



## TBM 940

# PILOT'S INFORMATION MANUAL

**P/N DMKPIPYEE0 - Edition 0 - Revision 3**

**▲ 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.



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Customer care  
65921 TARBES CEDEX 9  
FRANCE

*Printed in FRANCE*

## Table of contents

	Section
General	1
Limitations	2
Emergency procedures	3
Normal procedures	4
Performance	5
Weight and balance	6
Description	7
Airplane handling, servicing and maintenance	8
Supplements	9



## Section 1

### General

#### Table of contents

1.1	-	General .....	1.1.1
1.2	-	Three view drawing .....	1.2.1
1.3	-	Descriptive data .....	1.3.1
		Engine .....	1.3.1
		Propeller .....	1.3.1
		Fuel .....	1.3.2
		Engine oil .....	1.3.3
		Maximum certificated weights .....	1.3.3
		Standard airplane weights .....	1.3.3
		Cabin and entry dimensions .....	1.3.4
		Specific loadings .....	1.3.4
1.4	-	Abbreviations and terminology .....	1.4.1
		Meteorological terminology .....	1.4.1
		General airspeed terminology and symbols .....	1.4.1
		Power terminology .....	1.4.2
		Airplane performance and flight planning terminology .....	1.4.3
		Weight and balance terminology .....	1.4.3
		General abbreviations .....	1.4.4
		Radio-navigation abbreviations .....	1.4.8
1.5	-	Conversion factors .....	1.5.1
1.6	-	Pressure and standard atmosphere .....	1.6.1
		Standard atmosphere .....	1.6.1
		Pressure conversion table .....	1.6.2

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PIM - Not authorized for operation

## 1.1 - General

This POH contains 9 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 standard.

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

Whenever this POH refers to the GARMIN integrated Flight Deck Pilot's Guide, it states the one described in section 2.1.

Whenever this POH refers to the MD302 Pilot's Guide, it states the one described in section 2.1.

The general information for complex optional systems are given in section 9, Supplements of the POH.

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, TBM airplane alternative source of electric power is able to supply 150 percent of the electrical loads of all required instruments and equipment for safe emergency operation of the aircraft for at least 1 hour.

Electrical load shedding procedure provided in section 3 of this POH must be followed in order to meet the requirements of that paragraph under 14 CFR 135.163(f)(2).

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**1.2 - Three view drawing**

\* Airplane on level field with fully extended FWD shock-absorber

Figure 1.2.1 (1/2) - Three view drawing



Figure 1.2.1 (2/2) - Three view drawing

### 1.3 - Descriptive data

#### Engine

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 66D

Engine type : Free turbine, reverse flow and 2 turbine sections

Compressor type : 4 axial stages, 1 centrifugal stage

Combustion chamber type : annular

Turbine type : 1 gas generator turbine stage, 2 power turbines stages

Horsepower rating and propeller speed : 850 SHP at 2000 RPM

#### Propeller

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-E5N-3C / NC8834K

Number of blades : 5

Propeller diameter :

Minimum : 90 in (2.286 m)

Maximum : 91 in (2.311 m)

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

Propeller blade setting at station 30 in :

Low pitch : 19.5°

Feathering : 85°

Maximum reverse : - 9°

Propeller governor : 8210.007 WOODWARD

## Fuel

Total capacity : 301 USG (1140 litres)

Total capacity each tank : 150.5 USG (570 litres)

Total usable : 292 USG (1106 litres)

**▲ 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 comprised between a minimum of 0.06 % and a maximum of 0.15 % by volume. Refer to section 8 Handling, servicing and maintenance for additional information.



**▲ CAUTION ▲**

The use of aviation gasoline (AVGAS) must be restricted to emergency purposes only. AVGAS shall not be used for more than 150 cumulative hours during any period between engine overhaul periods.



● NOTE ●

Use of AVGAS to be recorded in engine module logbook.



US specification (US)	French specification (FR)	English specification (UK)	NATO code
ASTM-D1655 JET A ASTM-D1655 JET A1 ASTM-D1655 JET B	AIR 3405C Grade F35	DERD 2494 Issue 9	F35 without additive
MIL-DTL-5624 Grade JP-4	AIR 3407B	DERD 2454 Issue 4 Amdt 1	F40 with additive
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amdt 1	F44 with additive when utilization
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amdt 1	F34 with additive S748
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43 without additive

Figure 1.3.1 - Recommended fuel types  
Reference : Service Bulletin P & W C. No. 14004



## Engine oil

System total capacity : 12.7 Quarts (12 litres) (oil cooler included)

Usable capacity : 6 Quarts (5.7 litres)

Maximum oil consumption in 10 hour period : 0.14 qt/hr (0.13 l/hr)  
[0.3 lb/hr (0.136 cc/hr)]

Specification

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

Figure 1.3.2 - Recommended engine oil types

Reference : Service Bulletin P & W C. No. 14001 at the latest revision

## Maximum certificated weights

Ramp : 7430 lbs (3370 kg)

Takeoff : 7394 lbs (3354 kg)

Landing : 7024 lbs (3186 kg)

Baggage weight

- refer to section 2, paragraph 2.5 for weight and C.G. limits
- refer to section 6 for cargo loading instructions

## Standard airplane weights

Standard empty weight : 4583 lbs (2079 kg)

Maximum useful load : 2811 lbs (1275 kg)

## **Cabin and entry dimensions**

Maximum cabin width : 3 ft 11.64 in (1.21 m)

Maximum cabin length : 13 ft 3.45 in (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 ft 6.52 in (1.08 m)

Entry height (standard) : 3 ft 10.85 in (1.19 m)

Pilot entry mean width : 2 ft 3.6 in (0.70 m)

Pilot entry mean height : 3 ft 2.16 in (0.97 m)

## **Specific loadings**

Wing loading : 38.16 lbs / sq.ft (186.3 kg / m<sup>2</sup>)

Power loading : 8.7 lbs / SHP (3.95 kg / SHP)

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## 1.4 - Abbreviations and terminology

### Meteorological terminology

<b>ISA</b>	:	International standard atmosphere
<b>OAT</b>	:	Outside air temperature
<b>SAT</b>	:	Static air temperature
<b>QFE</b>	:	Atmospheric pressure at the airport reference point.
<b>QNH</b>	:	Atmospheric pressure at sea level, at airplane position.

• NOTE •

On the ground, the altimeter will indicate zero if it is set to QFE. It will indicate airport altitude if it is set to QNH.

### Standard Temperature :

Is 15°C (59°F) at sea level pressure altitude and decreases by 2°C (3.6°F) for each 1000 ft of altitude.

### Pressure altitude :

Is the altitude read from an altimeter when the altimeter's barometric scale has been set to 29.92 inches of mercury (1013.2 hPa).

### General airspeed terminology and symbols

<b>KCAS</b>	:	Knots Calibrated Airspeed is 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.
<b>KIAS</b>	:	Knots Indicated Airspeed is the speed shown on the airspeed indicator and expressed in knots.
<b>KTAS</b>	:	Knots True Airspeed is the airspeed expressed in knots relative to undisturbed air which is KCAS corrected for altitude and temperature.
<b>V<sub>A</sub></b>	:	Maneuvering Speed is the maximum speed at which full or abrupt control movements may be used.
<b>V<sub>FE</sub></b>	:	Maximum Flap Extended Speed is the highest speed permissible with wing flaps in a prescribed extended position.
<b>V<sub>LE</sub></b>	:	Maximum Landing Gear Extended Speed is the maximum speed at which an airplane can be safely flown with the landing gear extended.

- V<sub>LO</sub>** : Maximum Landing Gear Operating Speed is the maximum speed at which the landing gear can be safely extended or retracted.
- V<sub>MO</sub>** : Maximum Operating Speed is the speed limit that may not be deliberately exceeded in normal flight operations.
- V<sub>R</sub>** : Rotation Speed is the speed at which rotation is initiated during takeoff to achieve takeoff safety speed at screen height.
- V<sub>SO</sub>** : Stalling Speed or the minimum steady flight speed at which the airplane is controllable in the landing configuration.
- V<sub>S1</sub>** : Stalling Speed or the minimum steady flight speed obtained in a specific configuration.
- V<sub>x</sub>** : Best Angle of Climb Speed is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.
- V<sub>y</sub>** : Best Rate of Climb Speed is 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, to maintain a specified power.

### Overheated start :

Engine start or attempt to start which causes the interturbine temperature to be higher than the maximum value permissible during start.

**Flame out** : 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 allowing minimal drag.

### Maximum Cruise Power :

Power developed corresponding to outside flight level and temperature conditions - refer to chapter 5 Performance.

**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 :**

Is the ratio of the change in height during a portion of climb, to the horizontal distance traversed in the same time interval.

### **Demonstrated crosswind velocity :**

Is 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** : Is acceleration due to gravity.

**Usable fuel** : Total fuel which can be effectively consumed by the engine.

## **Weight and balance terminology**

### **Reference datum :**

Datum perpendicular to the longitudinal airplane centerline from which all distances are measured for balance purpose.

**Arm** : Is the distance from the reference datum to the center of gravity (C.G.) of an item.

**Moment** : Is the product of the weight of an item multiplied by its arm.

### **Center of gravity (C.G.) :**

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** : Center of Gravity Limits are 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** : Is the difference between maximum ramp weight and the basic empty weight.

**Maximum ramp weight :**

Is the maximum weight approved for ground maneuver. It includes the weight of start, taxi and run up fuel.

**Maximum takeoff weight :**

Is the maximum weight approved at the beginning of the takeoff run.

**Maximum landing weight :**

Is the maximum weight approved for landing touchdown.

**General abbreviations**

<b>A</b>	: Ampere or Amber
<b>ABN</b>	: Abnormal
<b>ADC</b>	: Air Data Computer
<b>AGL</b>	: Above ground level
<b>AIL TRIM</b>	: Aileron TRIM
<b>ALT. SEL.</b>	: Altitude selector
<b>ALTI</b>	: Altimeter
<b>AMP</b>	: Ampere
<b>AoA</b>	: Angle of Attack
<b>AP</b>	: Autopilot
<b>AT</b>	: Autothrottle
<b>ATIS</b>	: Automatic Terminal Information Service
<b>AUTO SEL</b>	: Automatic selector
<b>AUX BP</b>	: Auxiliary boost pump
<b>BAT</b>	: Battery
<b>BRT</b>	: Brightness
<b>CAS</b>	: Crew Alerting System
<b>°C</b>	: Celsius degree
<b>CONT.</b>	: Control
<b>DIEGME</b>	: Diethylene glycol monomethyl ether
<b>DISC</b>	: Disconnect
<b>DN</b>	: Down

## Pilot's Operating Handbook

<b>EDM</b>	:	Emergency Descent Mode
<b>EGME</b>	:	Ethylene glycol monomethyl ether
<b>EIS</b>	:	Engine Indication System
<b>EMER</b>	:	Emergency
<b>ESHP</b>	:	Estimated shaft horsepower
<b>ESP</b>	:	Electronic Stability Protection
<b>ESS. BUS TIE</b>	:	Essential BUS tie
<b>EXT. LIGHTS</b>	:	Exterior lightings
<b>°F</b>	:	Fahrenheit degree
<b>FCU</b>	:	Fuel control unit
<b>FD</b>	:	Flight director
<b>FL</b>	:	Flight level
<b>FOB</b>	:	Fuel On Board
<b>FPL</b>	:	Flight Plan
<b>ft</b>	:	Feet
<b>ft/min</b>	:	Feet per minute
<b>G</b>	:	Green
<b>GIFD</b>	:	Garmin Integrated Flight Deck
<b>GTC</b>	:	Garmin Touchscreen Controller
<b>HI</b>	:	High
<b>HP</b>	:	High pressure
<b>hPa</b>	:	Hectopascal
<b>hr</b>	:	Hour
<b>HS</b>	:	HomeSafe
<b>HTR</b>	:	Heater
<b>HTRS</b>	:	Heaters
<b>IGNIT</b>	:	Ignition
<b>in</b>	:	Inch / inches

<b>INERT SEP</b>	: Inertial separator
<b>INDIC</b>	: Indicator
<b>in.Hg</b>	: Inch of mercury
<b>INT. LIGHTS</b>	: Interior lightings
<b>INSTR.</b>	: Instrument
<b>ITT</b>	: Interturbine temperature
<b>kg</b>	: Kilogram
<b>kt</b>	: Knot (1 nautical mile/hr - 1852 m/hr)
<b>kW</b>	: Kilowatt
<b>l</b>	: Litre
<b>L or L.H.</b>	: Left
<b>l/h</b>	: Litre / hour
<b>lb or lbs</b>	: Pound(s)
<b>L / D</b>	: Lift-to-drag
<b>LDG</b>	: Landing
<b>LDG GR</b>	: Landing gear
<b>LDR</b>	: Lightweight Data Recorder
<b>LFE</b>	: Landing Field Elevation
<b>LRCR</b>	: Long Range Cruise
<b>LO</b>	: Low
<b>LP</b>	: Low pressure
<b>LRN</b>	: Long range navigation
<b>LTS TEST</b>	: Lightings test
<b>m</b>	: Metre
<b>m.a.c. or MAC</b>	: Mean aerodynamic chord
<b>MAIN GEN</b>	: Main generation
<b>MAN</b>	: Manual
<b>MAN OVRD</b>	: Manual override



## Pilot's Operating Handbook

<b>MAX RPM</b>	: Maximum revolutions per minute
<b>MDA</b>	: Minimum Descent Altitude
<b>MFD</b>	: Multi-function Display
<b>MIN</b>	: Minimum
<b>min</b>	: Minute
<b>mm</b>	: Millimetre
<b>MLW</b>	: Maximum Landing Weight
<b>MRW</b>	: Maximum Ramp Weight
<b>msg</b>	: Message
<b>MTOW</b>	: Maximum Takeoff Weight
<b>MXCR</b>	: Maximum Cruise
<b>MZFW</b>	: Maximum Zero Fuel Weight
<b>NM</b>	: Nautical mile
<b>NOCR</b>	: Normal cruise (recommended)
<b>NORM</b>	: Normal
<b>PFD</b>	: Primary Flight Display
<b>PHF</b>	: Plan Horizontal Fixe (Horizontal stabilizer)
<b>PRESS</b>	: Pressure
<b>PROP</b>	: Propeller
<b>psi</b>	: Pounds per square inch
<b>PSIG</b>	: Pounds per Square Inch Gage
<b>qt</b>	: Quart ( $\frac{1}{4}$ USG)
<b>QTY</b>	: Quantity
<b>R or R.H.</b>	: Right
<b>RCR</b>	: Recommended cruise
<b>RUD</b>	: Rudder
<b>s or sec</b>	: Second
<b>SEL</b>	: Selector

<b>SIG</b>	: Signalization
<b>SL</b>	: Sea level
<b>S/N</b>	: Serial number
<b>SPD</b>	: Speed
<b>SPKR</b>	: Speaker
<b>ST - BY</b>	: Stand-by
<b>STALL HTR</b>	: Stall heater
<b>Std</b>	: Standard
<b>T°</b>	: Temperature
<b>TEMP</b>	: Temperature
<b>TO</b>	: Takeoff
<b>TURN COORD</b>	: Turn coordinator
<b>USG</b>	: Gallon U.S
<b>USP</b>	: Under Speed Protection
<b>V</b>	: Volt or Voltage
<b>WARN</b>	: Warning
<b>W / S</b>	: Windshield
<b>YD</b>	: Yaw damper

### **Radio-navigation abbreviations**

<b>ADF</b>	: Automatic Direction Finder System
<b>ADI</b>	: Attitude Director Indicator
<b>ADS-B</b>	: Automatic Dependent Surveillance-Broadcast
<b>AFCS</b>	: Automated Flight Control System
<b>AHRS</b>	: Attitude and Heading Reference System
<b>AIRAC</b>	: Aeronautical Information Regulation And Control
<b>ATC</b>	: Air Traffic Control
<b>Baro VNAV</b>	: Barometric Vertical NAVigation
<b>B RNAV</b>	: Basic aRea NAVigation

## Pilot's Operating Handbook

<b>CDI</b>	:	Course Deviation Indicator
<b>COM</b>	:	Communications Transceivers
<b>DME</b>	:	Distance Measuring Equipment
<b>ELT</b>	:	Emergency Locator Transmitter
<b>FDE</b>	:	Fault Detection and Exclusion
<b>FMS</b>	:	Flight Management System
<b>GNSS</b>	:	Global Navigation Satellite System
<b>GPS</b>	:	Global Positioning System
<b>HF</b>	:	High Frequency
<b>IFR</b>	:	Instrument Flight Rules
<b>ILS</b>	:	Instrument Landing System
<b>IMC</b>	:	Instrument Meteorological Conditions
<b>L NAV</b>	:	Lateral NAVigation
<b>LPV</b>	:	Localizer Precision Vertical
<b>MKR</b>	:	Marker Radio Beacon
<b>NAV</b>	:	Navigation Indicators or Receivers
<b>P RNAV</b>	:	Precision Area NAVigation
<b>RAIM</b>	:	Receiver Autonomous Integrity and Monitoring
<b>RF Leg</b>	:	Radius to Fix Leg
<b>R NAV</b>	:	Area NAVigation
<b>RNP</b>	:	Required Navigation Performance
<b>SAM</b>	:	Standby Attitude Module
<b>SBAS</b>	:	Satellite Based Augmentation System
<b>STAR</b>	:	Standard Terminal Arrival Route
<b>TAS</b>	:	Traffic Advisory System
<b>TAWS</b>	:	Terrain Awareness Warning System
<b>VFR</b>	:	Visual Flight Rules
<b>VHF</b>	:	Very High Frequency

<b>VMC</b>	: Visual Meteorological Conditions
<b>V NAV</b>	: Vertical NAVigation
<b>VOR</b>	: VHF Omnidirectional Range
<b>VOR / LOC</b>	: VHF Omnidirectional Range LOCalizer
<b>WAAS</b>	: Wide Area Augmentation System
<b>WFDE</b>	: WAAS Fault Detection and Exclusion
<b>WGS</b>	: World Geodetic System
<b>WXR</b>	: Weather surveillance radar
<b>XPDR</b>	: Transponder

PIM - Not authorized for operation

**1.5 - Conversion factors**

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	metre	metre	3.2808	feet
inch	25.4	mm	mm	0.03937	Inch
Imp.Gal	4.546	litre	litre	0.220	Imp.Gal
USG	3.785	litre	litre	0.264	USG
lb	0.45359	kg	kg	2.2046	lb

Figure 1.5.1 - Imperial and U.S units to metric units

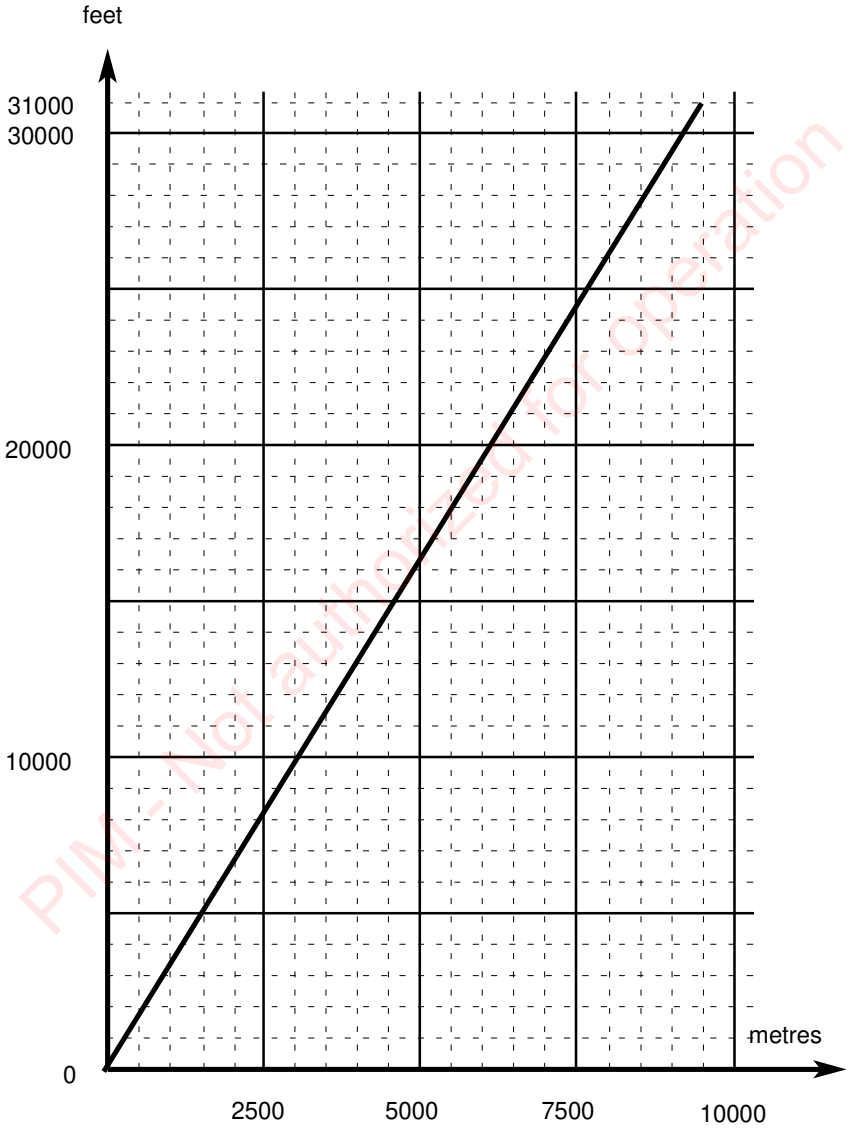


Figure 1.5.2 - Feet versus metres

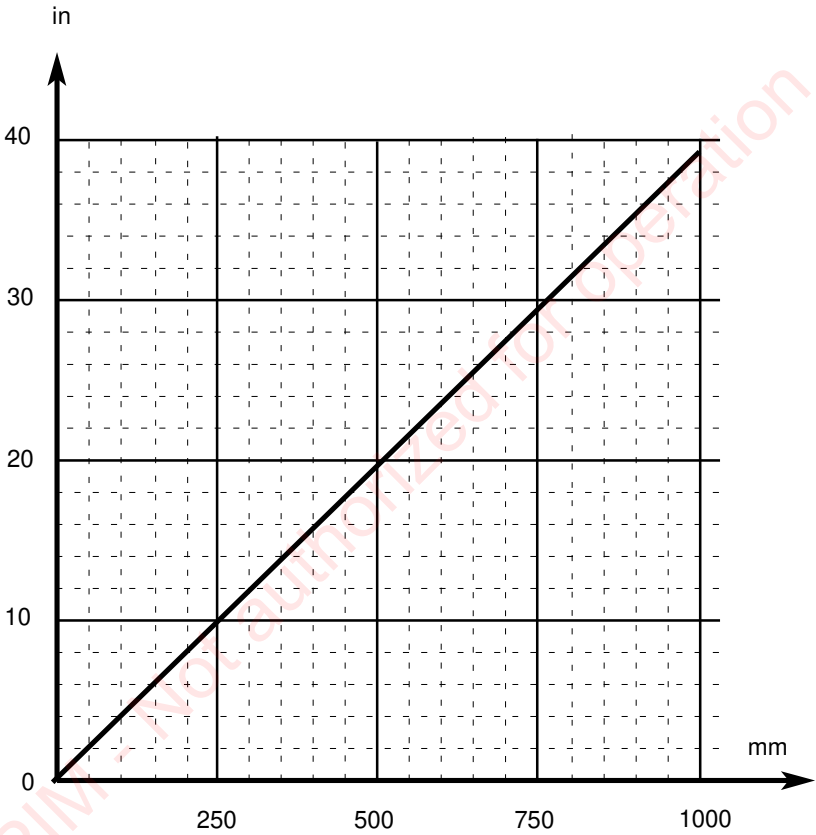


Figure 1.5.3 - Inches versus millimetres

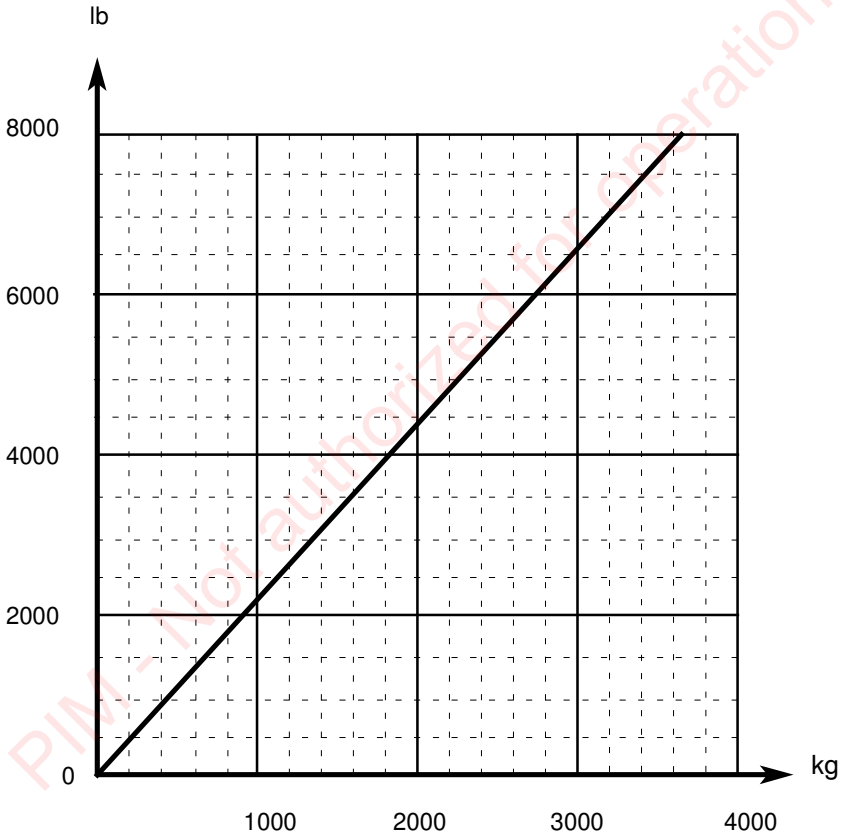


Figure 1.5.4 - Pounds versus kilograms



**1.6 - Pressure and standard atmosphere****Standard atmosphere**

Pressure altitude (ft)	Pressure (hPa)	°C	°F
0	1013.2	+ 15.0	+ 59.0
2000	942.1	+ 11.0	+ 51.8
4000	875.0	+ 7.0	+ 44.6
6000	811.9	+ 3.1	+ 37.6
8000	752.6	- 0.8	+ 30.5
10000	696.8	- 4.8	+ 23.4
12000	644.3	- 8.7	+ 16.2
14000	595.2	- 12.7	+ 9.2
16000	549.1	- 16.6	+ 2.2
18000	505.9	- 20.6	- 5.0
20000	465.6	- 24.6	- 12.4
22000	427.8	- 28.5	- 19.3
24000	392.6	- 32.5	- 26.5
26000	359.8	- 36.5	- 33.6
28000	329.3	- 40.4	- 40.7
30000	300.8	- 44.4	- 47.8
31000	287.4	- 46.4	- 51.6

Figure 1.6.1 - Standard atmosphere

### Pressure conversion table

• NOTE •

The standard pressure of 1013.2 hPa is equal to 29.92 inches of mercury.

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
1000 29.53	1001 29.56	1002 29.59	1003 29.62	1004 29.65	1005 29.68	1006 29.71	1007 29.74	1008 29.77	1009 29.80
1010 29.83	1011 29.85	1012 29.88	1013 29.91	1014 29.94	1015 29.97	1016 30.00	1017 30.03	1018 30.06	1019 30.09
1020 30.12	1021 30.15	1022 30.18	1023 30.21	1024 30.24	1025 30.27	1026 30.30	1027 30.33	1028 30.36	1029 30.39
1030 30.42	1031 30.45	1032 30.47	1033 30.50	1034 30.53	1035 30.56	1036 30.59	1037 30.62	1038 30.65	1039 30.68
1040 30.71	1041 30.74	1042 30.77	1043 30.80	1044 30.83	1045 30.86	1046 30.89	1047 30.92	1048 30.95	1049 30.98

Figure 1.6.2 - Pressure conversion table

## Section 2

### Limitations

#### Table of contents

2.1	-	General .....	2.1.1
2.2	-	Airspeed limitations .....	2.2.1
2.3	-	Powerplant limitations .....	2.3.1
		Engine .....	2.3.1
		Oil .....	2.3.2
		Fuel .....	2.3.3
		Propeller .....	2.3.4
2.4	-	Starter operation limits .....	2.4.1
2.5	-	Weight and C.G. limits .....	2.5.1
		Weight limits .....	2.5.1
		C.G. limits .....	2.5.2
2.6	-	Operation limits .....	2.6.1
		Maneuver limits .....	2.6.1
		Temperature limits .....	2.6.1
		Flight load factor limits .....	2.6.1
		Generator limits .....	2.6.2
		GFC 700 autopilot limits .....	2.6.2
		Autothrottle limits .....	2.6.2
		HomeSafe emergency function (Post-MOD70-0650-34A) ...	2.6.3
		GNSS (GPS/SBAS) navigation equipment approvals .....	2.6.3
		GNSS (GPS/SBAS) navigation system limitations .....	2.6.7
		Icing conditions .....	2.6.10
		Severe icing conditions .....	2.6.10
		Flap operating envelope .....	2.6.11
		Reverse utilization .....	2.6.11
		Weather radar .....	2.6.12
		Equipment required depending on type of operation .....	2.6.12

	Altitude operating limits .....	2.6.17
	In-flight breaker use limits .....	2.6.17
	Enhanced mode S .....	2.6.18
	Chartview system operating limitations .....	2.6.19
2.7	- Miscellaneous limits .....	2.7.1
	Seating limits C.G. ....	2.7.1
	Baggage limits .....	2.7.1
	Minimum crew .....	2.7.1
	Maximum occupancy .....	2.7.1
	Use of doors .....	2.7.1
	Cargo net installation limits .....	2.7.1
	Weather radar limitation .....	2.7.2
2.8	- Markings .....	2.8.1
	Airspeed Indicator on PFD(s) and on Standby airspeed indicator .....	2.8.1
	Pressurization .....	2.8.1
	Engine instruments .....	2.8.2
2.9	- Placards .....	2.9.1

## 2.1 - General

TBM 940 is the trade name of the TBM 700 N version 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. 190-02577-00, 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  
OPERATIONS"

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.

Intentionally left blank

PIM - Not authorized for operation

## 2.2 - Airspeed limitations

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

	Speed	KCAS	KIAS	Remarks
V <sub>MO</sub>	Maximum operating speed	271	266	Do not intentionally exceed this speed in normal flight category
V <sub>A</sub>	Maneuvering speed	160	158	Do not make abrupt or full control movements above this speed
V <sub>FE</sub>	Maximum flaps extended speed :			
	landing configuration	120	122	Do not exceed these speeds depending on flaps position
	takeoff configuration	180	178	
V <sub>LO</sub>	Maximum landing gear operating speed :			
	extension	180	178	Do not extend or retract landing gear above this speed
	retraction	151	150	
	emergency extension	151	150	
V <sub>LE</sub>	Maximum landing gear extended speed	180	178	Do not exceed this speed with landing gear extended

Figure 2.2.1 - Airspeed limitations

Intentionally left blank

PIM - Not authorized for operation



## 2.3 - Powerplant limitations

### Engine

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 66D

#### Maximum power :

100 % at Np = 2000 RPM

#### Ng limitation :

104.1 %

#### Np limitation :

2000 RPM  $\pm$  40 RPM

#### ITT limitations :

- Takeoff : 850°C
- Maximum climb/cruise : 840°C
- During start :
  - < 840°C, no duration limitation
  - < 870°C for 20 seconds max.
  - < 1000°C for 5 seconds max.

**▲ CAUTION ▲**

When normally operating, refer to chapter 5.8 Engine operation tables.



## 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

Oil pressure :

- Minimum : 60 psi
- Maximum : 135 psi, a transient oil pressure up to 170 psi is acceptable for maximum 20 seconds

Normal oil pressure is 105 to 135 psi. Oil pressures under 105 psi are undesirable. Under emergency conditions, to complete a flight, a lower oil pressure of 60 psi is permitted at reduced power level not exceeding 80% 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 Quarts (12 litres), oil cooler included
- Usable capacity : 6 Quarts (5.7 litres)

## Fuel

Fuel limitations :

- 2 tanks : 150.5 USG (570 litres) each
- Total fuel : 301 USG (1140 litres)
- Usable fuel : 292 USG (1106 litres)
- Unusable fuel : 9 USG (34 litres)
- Maximum fuel imbalance : 15 USG (57 litres)

• NOTE •

Usable fuel can be safely used 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 comprised between a minimum of 0.06 % and a maximum of 0.15 % by volume. Refer to section 8 Handling, servicing and maintenance for additional information.

▲

▲ CAUTION ▲

The use of aviation gasoline (AVGAS) must be restricted to emergency purposes only. AVGAS shall not be used for more than 150 cumulative hours during any period between engine overhaul periods.

▲

• NOTE •

Use of AVGAS to be recorded in engine module logbook.

•

▲ CAUTION ▲

Maximum time for sideslip condition is 30 seconds.

▲

US specification (US)	French specification (FR)	English specification (UK)	NATO code
ASTM-D1655 JET A ASTM-D1655 JET A1 ASTM-D1655 JET B	AIR 3405C Grade F35	DERD 2494 Issue 9	F35 without additive
MIL-DTL-5624 Grade JP-4	AIR 3407B	DERD 2454 Issue 4 Amdt 1	F40 with additive
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amdt 1	F44 with additive when utilization
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amdt 1	F34 with additive S748
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43 without additive

Figure 2.3.1 - Recommended fuel types  
 Reference : Service Bulletin P & W C. No. 14004

## Propeller

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-E5N-3C / NC8834K

Propeller diameter :

- Minimum : 90 in (2.286 m)
- Maximum : 91 in (2.311 m)

Propeller blade setting at station 30 in :

- Low pitch : 19.5°
- Feathering : 85°
- Maximum reverse : - 9°

## 2.4 - Starter operation limits

Starter operation sequence is limited as follows :

if Ng < 30 % ..... 30 seconds

if Ng > 30 % ..... 60 seconds

Should several sequences be necessary, respect following spacing :

1st sequence

wait ..... 1 minute

2nd sequence

wait ..... 5 minutes

3rd sequence

wait ..... 30 minutes

4th sequence

Intentionally left blank

PIM - Not authorized for operation

## 2.5 - Weight and C.G. limits

### Weight limits

Maximum ramp weight (MRW) : 7430 lbs (3370 kg)

Maximum takeoff weight (MTOW) : 7394 lbs (3354 kg)

Maximum landing weight (MLW) : 7024 lbs (3186 kg)

Maximum zero fuel weight (MZFW) : 6032 lbs (2736 kg)

Maximum baggage weight :

- in FWD 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 sketch below

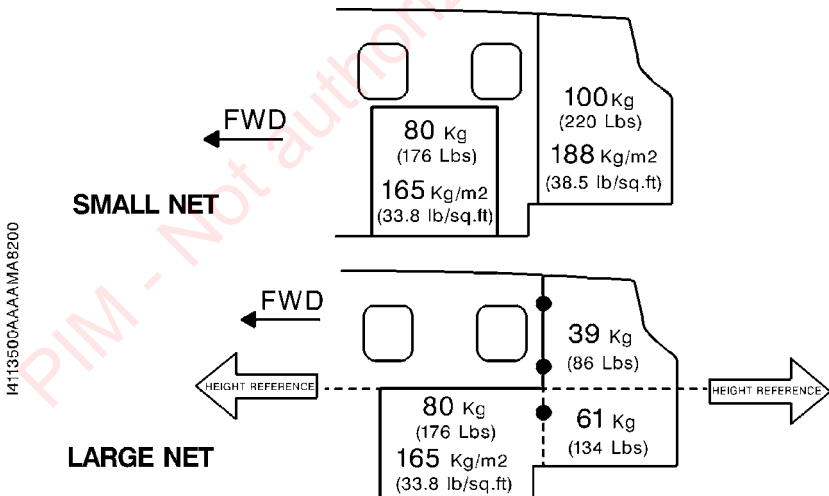


Figure 2.5.1 - Baggage limits

### 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 4409 lbs (2000 kg) or less (14 % of m.a.c)
- 183.6 in (4.664 m) aft of datum at 6250 lbs (2835 kg) (18 % of m.a.c)
- 185.3 in (4.707 m) aft of datum at 6579 lbs (2984 kg) (20.85 % of m.a.c)
- 187 in (4.752 m) aft of datum at all weights above 7024 lbs (3186 kg) (23.8 % of m.a.c)

Aft limits :

- 193.65 in (4.921 m) aft of datum at 7394 lbs (3354 kg) (35 % of m.a.c.)
- 194 in (4.928 m) aft of datum at 6986 lbs (3169 kg) (35.5 % of m.a.c.)

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 insure that the airplane is properly loaded.  
See section 6 Weight and balance for proper loading instructions.

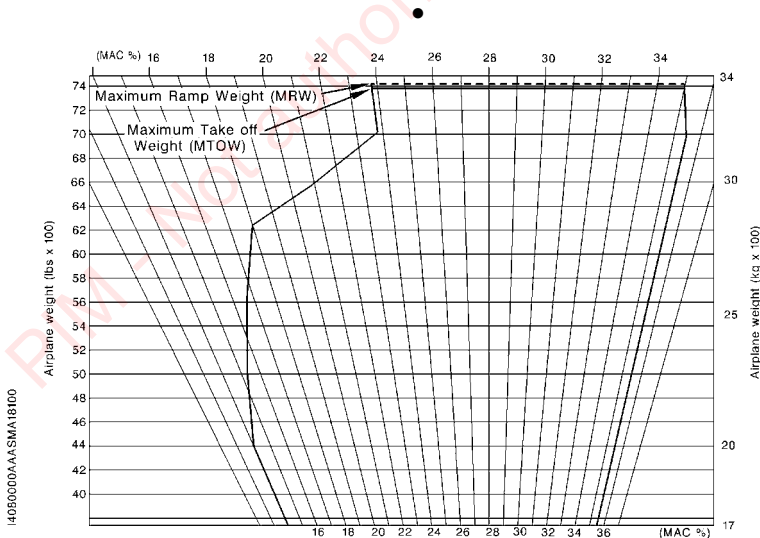


Figure 2.5.2 - C.G. limits



## 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 8000 ft pressure altitude

Maximum temperature in flight :

ISA + 37°C (+ 67°F) from 0 to 8000 ft pressure altitude

ISA + 30°C (+ 54°F) above 8000 ft pressure altitude

### Flight load factor limits

#### Flaps up

Weight below 6579 lbs (2984 kg) : - 1.5 < n < + 3.8 g

Weight above 6579 lbs (2984 kg) : - 1.5 < n < + 3.5 g

#### Flaps down

- 0 < n < + 2.0 g

**▲ CAUTION ▲**

Intentional negative load factors 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 1000 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 2000 ft (600 m) AGL with a vertical speed in excess of 2000 ft/min.

•

## Autothrottle (AT) limits

- Do not engage autothrottle for taxi.
- Do not engage autothrottle below 1000 ft (300 m) AGL in case of takeoff without autothrottle.
- Do not engage autothrottle during takeoff with OAT > ISA + 30°C.
- Do not engage autothrottle during landing and touch and go.
- Disengage autothrottle if speed is not controlled within  $\pm 5$  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 (Post-MOD70-0650-34A)

HomeSafe must be activated only when the pilot is incapacitated.

### ▲ WARNING ▲

**HomeSafe deactivation must be performed by a pilot :**

- **fully capable of flying the airplane,**
- **fully aware of all the actions the pilot will have to perform to reconfigure the airplane (the initial flight plan in the FMS is lost, the landing gear and flaps positions may not agree with LANDING GEAR and FLAPS levers positions).**



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.

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. <sup>1</sup>  Two GNSS systems required to be operational. <sup>2</sup>	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 <i>(formerly designated as B-RNAV)</i>	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. <sup>1</sup>  Two GNSS systems required to be operational. <sup>2</sup>	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	

Phase of flight	Approved PBN Capability	Operational limitations	Reference Documents	ICAO Flight Plan Code		Notes
				Item 10a Code	Item 18 PBN/	
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. <sup>2</sup>  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 <i>(with and without RF legs)</i>	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).
Approach	RNP APCH LNAV minima <i>(with and without RF legs)</i>	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.

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/VNAV minima <i>(with and without RF legs)</i>	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 <i>(with and without RF legs)</i>	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.

<sup>1</sup> and <sup>2</sup>, see Note 1 and Note 2 hereafter

Table 2.6.1 - GNSS operational requirements

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](http://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](http://www.Garmin.com)>Support>Contact Garmin Support>Aviation. Pilots and operators can view navigation data base alerts at [www.Garmin.com](http://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 the Table 2.6.1 - GNSS operational requirements, 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 the 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 a minimum, the flight director must be displayed and utilized when conducting procedures containing RF legs.

**Advisory visual approaches****▲ WARNING ▲**

**All advisory visual approaches shall be conducted in VMC.  
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. Use of advisory visual  
approaches in IMC is prohibited.**



## Icing conditions

Except for certain phases of flight where the POH specifies that deicing boots should not be used (e.g. take-off, 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 Particular procedures described in chapter 4.5 and in case of unforeseen icing conditions, refer in addition to the Emergency procedure described in chapter 3.12.

## 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 the list of equipment required depending on type of operation in this same chapter.

Refer to Particular procedures described in chapter 4.5 and in case of unforeseen icing conditions, refer in addition to the Emergency procedure described in chapter 3.12.

## Flap operating envelope

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

## Reverse utilization

The use of control reverse BETA ( $\beta$ ) range is prohibited :

- during flight,
- on ground, if the engine is not running.

## ■ 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.

## 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
  - Stand-by heading reference instrument
2. CAS warning and caution messages
  - Oil pressure
  - Low fuel pressure
  - Fuel selector OFF
  - Fuel auxiliary pump ON
  - L.H. and R.H 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
  - Overspeed regulator
  - 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. L.H. 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 : 31000 ft (9449 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 - refer to section List of equipment, paragraph List of critical RVSM equipment.

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 following equipment must be installed and operating normally upon entering RVSM airspace :

- Pilot and R.H. station primary altimeters
- Autopilot
- Altitude alerter
- ATC transponder

• 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
Groundspeed	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 back-up 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.

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PIM - Not authorized for operation

## 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)

### Baggage limits

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

### Minimum crew

- One pilot at L.H. 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 door open or ajar 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.



## Weather radar limitation

Weather radar can be displayed on :

- PFD 1,
- PFD 2,
- MFD, with different indications of mode.

Example :

- PFD 1 : "SBY" MODE
- MFD : "SBY" MODE
- PFD 2 : "ACTIVE" MODE

**▲ CAUTION ▲**

The radar is OFF only when all displays indicate OFF.



## 2.8 - Markings

### Airspeed indicator on PFD(s) and on Standby airspeed indicator

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

Marking	KIAS (Value or range)	Significance
Red strip	Below 65	/
White strip	65 - 122	Full flap operating range Lower limit is maximum weight $V_{SO}$ in landing configuration.
Green strip	122 - 266	Normal operating airspeed range
Red/white barber pole strip	Above 266	266 = VMO

Figure 2.8.1 - Airspeed indicator markings

### Pressurization

Marking	Value	Significance
Red line	6.2 psi	Cabin $\Delta P$ limit

Figure 2.8.2 - Pressurization marking

## Engine instruments

Engine instrument markings and their color code significance are shown in figure 2.8.3.

Indication	Red line or arc ----- Minimum limit	Yellow line or arc ----- Caution range	Green line or arc ----- Normal operating	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 105 psi	105 to 135 psi	135 psi (red line) normal limit
Generator RPM (Ng)	---	103 to 104 %	51 to 103 %	104 %
Propeller RPM (Np)	---	---	1950 to 2050 RPM	2050 RPM
ITT Engine start or off	---	840 to 1090°C (1544 to 1994°F)	400 to 840°C (752 to 1544°F)	840°C (1544°F) normal limit ----- 870°C (1598°F) ----- 1000°C (1838°F) (red line) ----- 1090°C (1994°F) absolute limit
Engine running		820 to 840°C (1507 to 1544°F)	400 to 820°C (752 to 1544°F)	840°C (1544°F) normal limit
Torque (TRQ)	---	100 to 110 %	0 to 100 %	100 % (red line) ----- 110 %

Figure 2.8.3 - Engine instrument markings



**2.9 - Placards**

- (1) Under L.H. front side window

14113004AAAKMA18200

<p>FLIGHT CONDITIONS : DAY AND NIGHT VFR AND IFR</p>		<p>THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND PILOT OPERATING HANDBOOK</p>		<p>ICING CONDITIONS ALLOWED</p>	
INVERTED FLIGHT	_____	PROHIBITED	MANEUVERING SPEED $V_A$	_____	158 KIAS
ACROBATIC MANEUVERS	_____	PROHIBITED	MAXIMUM OPERATING SPEED $V_{MO}$	_____	266 KIAS
INTENTIONAL SPINS	_____	PROHIBITED	FLAPS EXTENDED MAXIMUM SPEED $V_{FE}$	_____	
MAXIMUM TAKEOFF WEIGHT	_____	3251 kg / 7201 lbs	TAKEOFF CONFIGURATION	_____	178 KIAS
MAXIMUM LANDING WEIGHT	_____	3186 kg / 7024 lbs	LANDING CONFIGURATION	_____	178 KIAS
DESIGN LOAD FACTOR (MAXIMUM)	_____		LANDING GEAR EXTENDED MAXIMUM SPEED $V_{LE}$	_____	178 KIAS
FLAPS UP (WEIGHT BELOW 2584 kg / 5719 lbs)	_____	$-1.5 < r < +3.8 g$	LANDING GEAR OPERATING MAXIMUM SPEED $V_{LO}$	_____	150 KIAS
FLAPS UP (WEIGHT ABOVE 2584 kg / 5719 lbs)	_____	$-1.5 < r < +3.5 g$	UP	_____	
FLAPS DOWN	_____	$-0 < r < +2 g$	DOWN	_____	178 KIAS

- (2) On pressurized baggage compartment partition wall

14113500AAABMA18001

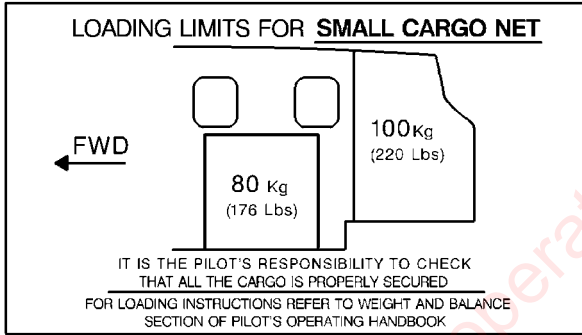
**100 kg - 220 lbs MAXIMUM**

IT IS THE PILOT'S RESPONSIBILITY TO CHECK THAT ALL THE BAGGAGE IS PROPERLY SECURED

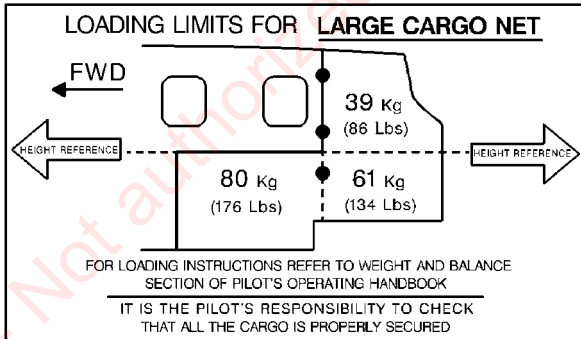
FOR LOADING INSTRUCTIONS SEE "WEIGHT AND BALANCE DATA" IN PILOT'S OPERATING HANDBOOK

I4113500AAAAMA18000

- (2)a For the small cargo net, on the right lower upholstery panel



- (2)b For the large cargo net, on R.H. side upholstery panel, in the rear baggage compartment



I4113500AAAAMA18100

- (2)c On FWD baggage compartment door frame (non pressurized)

I4112001AAA-FMAA8000

**50 kg - 110 lbs MAXIMUM**

FOR LOADING INSTRUCTIONS  
SEE "WEIGHT AND BALANCE DATA"  
IN PILOT'S OPERATING HANDBOOK

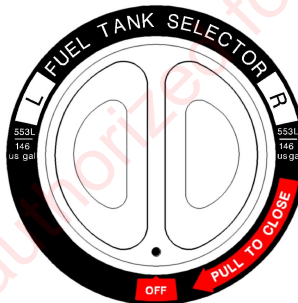
- (3) On pedestal console

I4113600AAAAMMA8001



- (4) On fuel selector

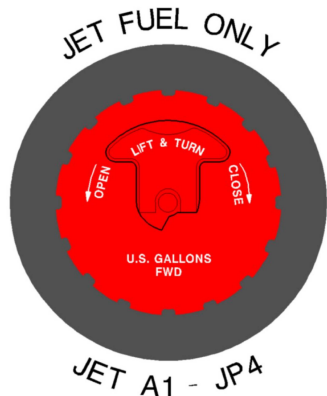
I4113006AAALMA8300



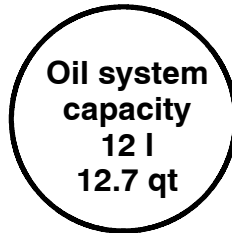
- (5) Near fuel tank caps

**JET-A-FUEL**  
TOTAL CAPACITY 150.5 us gal - 570 l  
ANTHCE ADDITIVE REQUIRED. SEE PILOT'S  
OPERATING HANDBOOK FOR OTHER APPROVED  
FUELS QUANTITY AND TYPE OF ADDITIVE

I4112004AAAAMMA8200



- (6) On internal face of L.H. engine cowling



- (7) On landing gear emergency control access door

I4113200AABMA8400



- (8) Under window, at L.H. Intermediate seat

I4113300AAAAMA8400



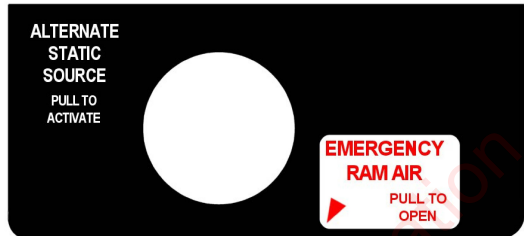
- (9) Above passenger's table

I4113400AAADMA8300

**TABLE MUST BE STOWED DURING TAKE OFF AND LANDING**

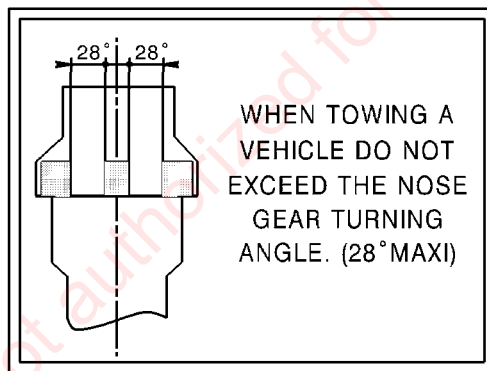
- (10) Under R.H. control wheel

I4351000AAACMA8000



- (11) On nose gear door

I4112001AAACMA8000



- (12) On nose gear leg

**NOSE LANDING GEAR  
TIRE PRESSURE : 6,5 bar  
94 psi**

- (13) On main gear leg

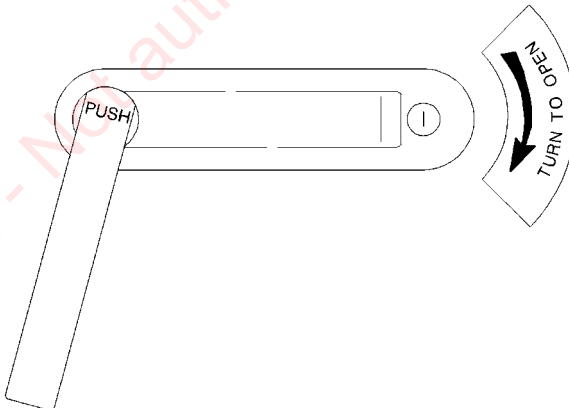
**MAIN LANDING GEAR  
TIRE PRESSURE : 8,96 bar  
130 psi**

- (14) On engine cowling, in front of compartment door

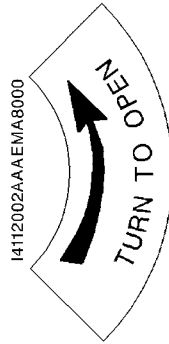
**EXTERNAL POWER  
28 VOLTS D.C. NOMINAL  
800 AMP  
STARTING CAPACITY MIN  
DO NOT EXCEED 1000 AMP**

- (15) On pilot door - External side, if installed

I4112002AAAEM/A8100



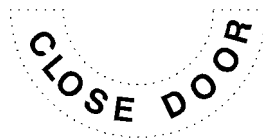
- (16) On access door - External side



- (17) On outer fuselage skin aft of access door



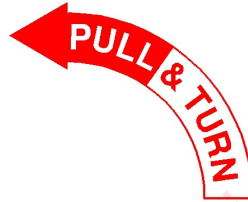
- (18) In the cabin forward of access door



I4113300AAAADMA8000

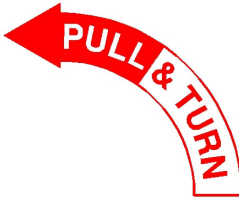
- (19) On access door - Internal side

14113400AAADMA8000



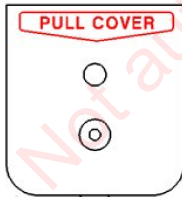
- (20) On pilot door - Internal side, if installed

14113400AAADMA8400

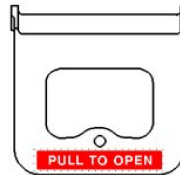


- (21) On emergency exit handle

Marking on cover



Marking on handle



14113300AAAAA18100





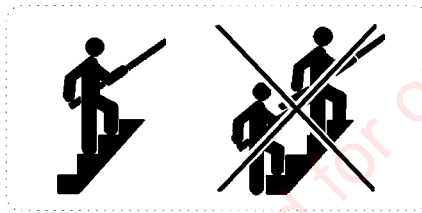
(22) Above emergency exit door

I4113300AAAAMA18000



(23) On last step of stairs

I4113400AAAADMA8100



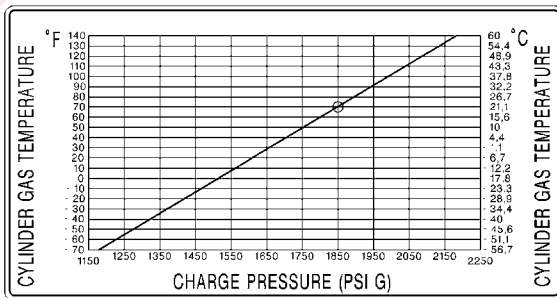
(24) On rear passengers masks containers

I4113400AAAADMA8200

**OXYGEN MASKS**

(25) On internal face of the oxygen cylinder service door

I4112400AAAAMA8000



- (26) On the oxygen service door

I4112400AAAAMA8100



- (27) On emergency locator transmitter inspection door

I4112200AAAAMA8000



- >> *Airplane equipped with coat hanger (Post-MOD70-0641-25A)*

- (28) On the L.H. rear cargo compartment panel upper edge

I4113200AAAALMA8300

**MAX WEIGHT CAPACITY 4,5kg - 10 lbs**

- >> *Airplane equipped with coat and headset hanger (Post-MOD70-0683-25F)*

- (29) On the L.H. rear cargo compartment panel upper edge

C4113200AAAAMA8100

**MAX WEIGHT CAPACITY 7kg - 15.43 lbs**

>> *With HomeSafe emergency function (Post-MOD70-0650-34B)*

(30) Above AFCS control unit

C4113207AAAAA8000

USE OF HOMESAFE FUNCTION  
RESTRICTED TO SITUATIONS  
OF PILOT INCAPACITATION

PIM - Not authorized for operation

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PIM - Not authorized for operation

## Section 3

### CAS messages

#### Table of contents

• NOTE •

CAS MESSAGES are in alphabetical order by either Chapter, Section, Paragraph or Supplement

•

<b>ABORT APR</b> .....	3.12.24
<b>AC CONF MISMATCH</b> .....	3.7.16
<b>AIRFRAME DEICE FAIL</b> .....	3.11.1
<b>AP ON YD OFF</b> .....	3.12.20
<b>APR DWNGRADE</b> .....	3.12.25
<b>AURAL WRN 1 CHNL</b> .....	3.12.9
<b>AURAL WRN FAIL</b> .....	3.12.8
<b>AUTO SEL</b> .....	3.8.5
<b>AUX BOOST PMP ON</b> .....	3.8.3
<b>BAT AMP</b> .....	3.9.1
<b>BAT OFF</b> .....	3.9.1
<b>CABIN ALTITUDE and USE OXYGEN MASK</b> .....	3.10.6
<b>CABIN DIFF PRESS</b> .....	3.10.8
<b>CARGO DOOR</b> .....	3.12.17
<b>CHIP</b> .....	3.3.13
<b>DOOR</b> .....	3.10.11
<b>EDM</b> .....	3.10.7
<b>EDM OVERRIDE</b> .....	Advisory
<b>ELEC FEATH FAULT</b> .....	3.9.7
<b>ESP DEGRADED - AOA</b> .....	3.12.12
<b>ESP DEGRADED - IAS</b> .....	3.12.11
<b>ESP FAIL</b> .....	3.12.10
<b>ESP OFF</b> .....	Advisory
<b>FIRE</b> .....	If installed - Supplement 18

<b>FLAPS ASYM</b> .....	3.7.3
<b>FUEL IMBALANCE</b> .....	3.8.6
<b>FUEL LOW L</b> .....	3.8.4
<b>FUEL LOW R</b> .....	3.8.4
<b>FUEL OFF</b> .....	7.8.1
<b>FUEL PRESS</b> .....	3.8.1
<b>GAS DEGRADED</b> .....	3.10.4
<b>GAS EVENT</b> .....	3.10.3
<b>GEAR UNSAFE</b> .....	3.7.5
<b>GPU DOOR</b> .....	3.12.18
<b>GWX FAIL</b> .....	3.12.35
<b>HOMESAFE REQUEST</b> .....	3.12.38
<b>HS ABN BRAKES</b> .....	3.7.17
<b>HS CONFIG MODE</b> .....	3.12.40
<b>HS FUEL SHUTOFF</b> .....	3.8.8
<b>ICE DETECTED</b> .....	3.11.8
<b>ICE DETECTION FAIL</b> .....	3.11.9
<b>IGNITION</b> .....	3.12.19
<b>INERT SEP FAIL</b> .....	3.11.3
<b>INERT SEP ON</b> .....	Advisory
<b>ITT</b> .....	3.3.12
<b>ITT HI</b> .....	3.3.10
<b>LOW LVL FAIL L</b> .....	3.8.7
<b>LOW LVL FAIL R</b> .....	3.8.7
<b>LOW VOLTAGE</b> .....	3.9.3
<b>MAIN GEN</b> .....	3.9.2
<b>MAIN GEN and LOW VOLTAGE</b> .....	3.9.4
<b>MAX DIFF MODE</b> .....	Advisory
<b>NG</b> .....	3.3.16
<b>NG HI</b> .....	3.3.14
<b>NO ICE DETECTED</b> .....	Advisory
<b>OIL PRESS</b> .....	3.3.4
<b>OIL TEMP</b> .....	3.3.17

<b>O2 CYL CLOSED</b> .....	3.10.10
<b>PARK BRAKE</b> .....	7.5.9
<b>PITOT HT ON L</b> .....	7.14.6
<b>PITOT HT ON R</b> .....	7.14.6
<b>PITOT NO HT L</b> .....	3.11.6
<b>PITOT NO HT R</b> .....	3.11.6
<b>PRESSU BACKUP</b> .....	3.10.5
<b>PRESSU OFF</b> .....	3.10.1
<b>PROP DEICE FAIL</b> .....	3.11.2
<b>PROP DEICE ON</b> .....	7.14.4
<b>STALL HEAT ON</b> .....	7.14.6
<b>STALL NO HEAT</b> .....	3.11.7
<b>STARTER</b> .....	Advisory
<b>TCAS FAIL</b> .....	3.12.36
<b>TRAFFIC FAIL</b> .....	3.12.37
<b>USP ACTIVE</b> .....	3.12.7
<b>VACUUM LOW</b> .....	3.10.12
<b>XPDR1 ADS-B FAIL</b> .....	3.12.34
<b>XPDR1 FAIL</b> .....	3.12.33
<b>XPDR2 ADS-B FAIL</b> .....	3.12.34
<b>XPDR2 FAIL</b> .....	3.12.33

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PIM - Not authorized for operation



## Section 3

### Emergency procedures

#### Table of contents

3.1	-	General .....	3.1.1
		Procedure format .....	3.1.3
3.2	-	Rejected takeoff .....	3.2.1
		Engine failure at takeoff before rotation .....	3.2.1
		Rejected takeoff for any other reason .....	3.2.2
3.3	-	Engine failures .....	3.3.1
		Engine failure before rotation .....	3.3.1
		Engine failure after rotation .....	3.3.1
		Engine failure in flight .....	3.3.3
		<b>OIL PRESS</b> or <b>OIL PRESS</b> .....	3.3.4
		Engine regulation discrepancy, power loss, throttle control loss .....	3.3.5
		Governor control not operating .....	3.3.8
		Excessive propeller rotation speed .....	3.3.8
		Engine does not stop on ground .....	3.3.9
		<b>ITT HI</b> during takeoff .....	3.3.10
		<b>ITT HI</b> .....	3.3.11
		<b>ITT</b> .....	3.3.12
		<b>CHIP</b> .....	3.3.13
		<b>NG HI</b> during takeoff .....	3.3.14
		<b>NG HI</b> .....	3.3.15
		<b>NG</b> .....	3.3.16
		<b>OIL TEMP</b> .....	3.3.17
3.4	-	Air start .....	3.4.1
		Air start envelope .....	3.4.1
		Air start procedures .....	3.4.2

3.5	-	Fire and smoke .....	3.5.1
		Engine fire on ground .....	3.5.1
		Cabin fire on ground .....	3.5.2
		Engine fire in flight .....	3.5.3
		Cabin electrical fire or smoke during flight .....	3.5.4
		Smoke elimination .....	3.5.5
3.6	-	Emergency descents .....	3.6.1
		Emergency descents profiles .....	3.6.1
		Maximum rate descent .....	3.6.2
		Maximum range descent .....	3.6.3
3.7	-	Emergency landings, flaps, gear .....	3.7.1
		Forced landing .....	3.7.1
		Tire blowout during landing .....	3.7.2
		<b>FLAPS ASYM</b> .....	3.7.3
		Flaps malfunction .....	3.7.4
		Landing with flaps malfunction .....	3.7.4
		Landing gear retraction discrepancy .....	3.7.5
		Landing gear extension discrepancy .....	3.7.6
		Emergency gear extension .....	3.7.7
		Landing with unlocked main landing gear .....	3.7.10
		Landing with defective nose landing gear (down unlocked or not down) .....	3.7.12
		Landing with gear up .....	3.7.13
		Ditching .....	3.7.14
		Landing without elevator control .....	3.7.15
		<b>AC CONF MISMATCH</b> .....	3.7.16
		<b>HS ABN BRAKES</b> .....	3.7.17
3.8	-	Fuel system .....	3.8.1
		<b>FUEL PRESS</b> .....	3.8.1
		<b>AUX BOOST PMP ON</b> .....	3.8.3
		<b>FUEL LOW L-R</b> .....	3.8.4
		<b>AUTO SEL</b> .....	3.8.5
		<b>FUEL IMBALANCE</b> .....	3.8.6
		<b>LOW LVL FAIL L-R</b> .....	3.8.7
		<b>HS FUEL SHUTOFF</b> .....	3.8.8

3.9	-	Electrical system .....	3.9.1
		<b>BAT AMP</b> .....	3.9.1
		<b>BAT OFF</b> .....	3.9.1
		<b>MAIN GEN</b> .....	3.9.2
		<b>LOW VOLTAGE</b> .....	3.9.3
		<b>MAIN GEN</b> and <b>LOW VOLTAGE</b> .....	3.9.4
		<b>ELEC FEATH FAULT</b> .....	3.9.7
		Bus bar .....	3.9.8
		Total loss of electrical power .....	3.9.11
3.10	-	Pressurization and air conditioning .....	3.10.1
		<b>PRESSU OFF</b> .....	3.10.1
		<b>GAS EVENT</b> .....	3.10.3
		<b>GAS DEGRADED</b> .....	3.10.4
		<b>PRESSU BACKUP</b> .....	3.10.5
		<b>CABIN ALTITUDE</b> and <b>USE OXYGEN MASK</b> .....	3.10.6
		<b>EDM</b> .....	3.10.7
		<b>CABIN DIFF PRESS</b> .....	3.10.8
		Cabin not depressurized after landing .....	3.10.9
		<b>O2 CYL CLOSED</b> .....	3.10.10
		<b>DOOR</b> .....	3.10.11
		<b>VACUUM LOW</b> .....	3.10.12
		Defog malfunction .....	3.10.13

3.11	-	Deicing system	3.11.1
		<b>AIRFRAME DEICE FAIL</b>	3.11.1
		<b>PROP DEICE FAIL</b>	3.11.2
		<b>INERT SEP FAIL</b>	3.11.3
		Windshield deicing failure	3.11.4
		Windshield misting or internal icing	3.11.5
		<b>PITOT NO HT L-R</b>	3.11.6
		<b>STALL NO HEAT</b>	3.11.7
		<b>ICE DETECTED</b>	3.11.8
		<b>ICE DETECTION FAIL</b>	3.11.9
3.12	-	Miscellaneous	3.12.1
		Unsuccessful AT disconnection	3.12.1
		Trim runaway	3.12.2
		Crack in cockpit window or window panel	3.12.3
		Emergency exit use	3.12.4
		Emergency beacon (ELT) use	3.12.5
		Inadvertent spins	3.12.6
		AP off, stall warning	3.12.7
		<b>USP ACTIVE</b>	3.12.7
		<b>AURAL WRN FAIL</b>	3.12.8
		<b>AURAL WRN 1 CHNL</b>	3.12.9
		<b>ESP FAIL</b>	3.12.10
		<b>ESP DEGRADED - IAS</b>	3.12.11
		<b>ESP DEGRADED - AOA</b>	3.12.12
		Oxygen use	3.12.13
		Airspeed indicating system failure	3.12.15
		Flight into severe icing conditions	3.12.16
		<b>CARGO DOOR</b>	3.12.17
		<b>GPU DOOR</b>	3.12.18
		<b>IGNITION</b>	3.12.19
		<b>AP ON YD OFF</b>	3.12.20

Autopilot or electric pitch trim malfunction .....	3.12.21
Dual GPS/SBAS failure ( <b>DR</b> or <b>LOI</b> annunciation on HSI) ..	3.12.22
<b>ABORT APR</b> .....	3.12.24
<b>APR DWNGRADE</b> .....	3.12.25
<b>PIT</b> in AP vertical mode during FD approach with vertical guidance .....	3.12.26
<b>VDI</b> or <b>VDI</b> on Approach .....	3.12.27
Left PFD failure .....	3.12.28
AHRS failure .....	3.12.29
ADC failure .....	3.12.31
MFD failure .....	3.12.32
<b>XPDR1 FAIL</b> or <b>XPDR2 FAIL</b> .....	3.12.33
<b>XPDR1 ADS-B FAIL</b> or <b>XPDR2 ADS-B FAIL</b> .....	3.12.34
<b>GWX FAIL</b> .....	3.12.35
<b>TCAS FAIL</b> .....	3.12.36
<b>TRAFFIC FAIL</b> .....	3.12.37
<b>HOMESAFE REQUEST</b> .....	3.12.38
HomeSafe deactivation .....	3.12.39
<b>HS CONFIG MODE</b> .....	3.12.40

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PIM - Not authorized for operation

### 3.1 - General

The recommended procedures for different failures or emergency situations are provided in this section.

Emergency 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 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.

#### Alarm system recall

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

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 practical 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 :

- 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** - **830°C**) requires engine power reduction, as soon as practical, to resume operation in the normal operating range.

Red or amber failure warnings are coupled with the lighting of

- a flashing red indicator/button



or

- a fixed amber indicator/button



Both indicators/buttons are located on the upper part of the L.H. instrument panel. When either one lights up, press it once to reactivate. It will go out and is ready to signal in the event of another failure. On the CAS display, the corresponding failure message remains ON as long as the failed condition exists.

The actions associated to the **red** warning or **amber** caution messages are described in this Section of the POH.

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 2 pages or more.

### MEMORY ITEMS

The memory items are indicated with a grey border box as shown hereafter :

The memory items are written like this.
---

Memory items are critical steps that must be executed quickly from memory without referring to POH or checklist.

### 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 :

► *Continuing*

*Continue* ►

#### LANDING DIRECTIVES

- Land as soon as possible ◀ means land on the nearest suitable runway.
- Land as soon as practical ◀ means land on the nearest suitable runway with convenient facilities.

#### CAS MESSAGES

Indicated as displayed in the MFD CAS window :

- **FUEL PRESS** means FUEL PRESS warning CAS message,
- **MAIN GEN** means MAIN GEN caution CAS message.
- **MAX DIFF MODE** means MAX DIFF MODE 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 - | THROTTLE ..... | Flight IDLE |
| 2 - | Brakes .....   | As required |

*If the airplane cannot be stopped on the runway :*

- 3 - THROTTLE ..... CUT OFF
- 4 - FUEL TANK SELECTOR ..... OFF
- 5 - Crash lever ..... Pull down

*If necessary :*

- 6 - Evacuate after the airplane has come to a stop.

*End of procedure.*

Rejected takeoff for any other reason

- 1 - THROTTLE ..... Flight IDLE
- 2 - Reverse ..... As required
- 3 - Brakes ..... As required

*If the airplane cannot be stopped on the runway :*

- 4 - THROTTLE ..... CUT OFF
- 5 - FUEL TANK SELECTOR ..... OFF
- 6 - Crash lever ..... Pull down

*If necessary :*

- 7 - Evacuate after the airplane has come to a stop.

*End of procedure.*

PIM - Not authorized for operation

### 3.3 - Engine failures

#### Engine failure before rotation

Perform procedure ..... Engine failure at takeoff before rotation  
Refer to chapter 3.2

*End of procedure.*

#### Engine failure after rotation

1/2

► Fly the airplane ◀

1 - MAN OVRD control ..... Full forward

*If power recovery successful :*

► Fly the airplane using the MAN OVRD control for power ◀

2 - THROTTLE ..... Flight IDLE

► Land as soon as possible ◀

*End of procedure* ■

*If power recovery unsuccessful :*

3 - MAN OVRD control ..... Full backward

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

► Land straight ahead without changing LANDING GEAR position ◀

4 - FLAPS lever ..... TO

5 - Airspeed ..... Maintain above 100 KIAS

6 - THROTTLE ..... CUT OFF

*Continue* ►

**Engine failure after rotation** 2/2

► *Continuing*

7 - FUEL TANK SELECTOR ..... OFF

*Before touch down :*

8 - FLAPS lever ..... LDG

9 - Crash lever ..... Pull down

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

*End of procedure* ■

*If height allows to reach a suitable landing surface :*

- |                                    |
|------------------------------------|
| 11 - LANDING GEAR lever ..... DN   |
| 12 - FLAPS lever ..... As required |

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

13 - THROTTLE ..... CUT OFF

14 - FUEL TANK SELECTOR ..... OFF

*Before touch down :*

15 - Crash lever ..... Pull down

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

*End of procedure.*

**Engine failure in flight***Symptoms : Loss of power.*

► Fly the airplane ◀

- |                              |              |
|------------------------------|--------------|
| 1 - FUEL TANK SELECTOR ..... | Switch tanks |
| 2 - AUX BP switch .....      | ON           |
| 3 - AT / AP .....            | Disconnect   |

*If power recovery successful :*

- 4 - Remaining fuel ..... Check

► Land as soon as possible ◀

*End of procedure ■**If power recovery unsuccessful :*

- |                        |         |
|------------------------|---------|
| 5 - THROTTLE .....     | CUT OFF |
| 6 - Oxygen masks ..... | Use     |

- 7 - Air start envelope ..... Check
- 
- Refer to chapter 3.4

*End of procedure.*

**OIL PRESS** or **OIL PRESS**

Indicates that oil pressure is below 105 psi.

▶ Fly the airplane ◀

▶ Land as soon as possible ◀

1 -	Oil pressure .....	Monitor
2 -	TRQ .....	Minimum necessary

▲ CAUTION ▲

Due to the oil pressure drop, the propeller blade angle may go towards high pitch and therefore lead to a Np propeller rotation speed decrease.



If engine power decreases :

- 3 - THROTTLE ..... CUT OFF
- 4 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6
- 5 - Perform procedure ..... Forced landing  
Refer to chapter 3.7  
*End of procedure.*



**Engine regulation discrepancy, power loss,  
throttle control loss**

1/3

*Symptoms :*

- *power fluctuations, or*
- *uncommanded power loss, or*
- *bad response to THROTTLE movements,*
- *bad autothrottle behaviour if engaged.*

▶ **Fly the airplane** ◀*If AT is engaged :*

- 1 - AT ..... Disconnect

*If power recovery is successful :*

- 2 - Continue the flight without using autothrottle.

*End of procedure* ■*If AT is not engaged and discrepancy still occurant :**If circumstances and obtained minimum power allow :*▲ **CAUTION** ▲

In manual override mode, engine is neither protected against slam accelerations, nor against maximum speed overshooting. Avoid rapid control movements and manage engine parameters.  
Use of MAN OVRD lever disengages autothrottle.



- 3 - THROTTLE ..... Flight IDLE
- 4 - Confirm engine still running.
- 5 - FUEL TANK SELECTOR ..... Switch tanks
- 6 - Check that no engine indication exceeds allowed value.
- 7 - MAN OVRD control ..... Actuate  
Progressively to minimum necessary

*Continue* ▶

**Engine regulation discrepancy, power loss,  
throttle control loss** 2/3

► *Continuing*

- 8 - Continue the flight.
  - Land as soon as possible ◀

*If the available power is weak :*

- 9 - LANDING GEAR lever ..... DN  
Only on a final approach glide path
- 10 - FLAPS lever ..... LDG  
Only in short final

**▲ CAUTION ▲**

When MAN OVRD control is used, the available power may not be sufficient to ensure a go-around in landing configuration, particularly if the weight is near the maximum weight.

- Do not perform a go around ◀
  - Do not use the reverse ◀
  - 11 - Land normally.
  - 12 - Brakes ..... As required
- End of procedure* ■

*If minimum power obtained is excessive :*

- 13 - Airspeed ..... Reduce below 178 KIAS  
By setting nose-up attitude
- 14 - INERT SEP switch ..... ON

*If ITT > 840°C :*

- 15 - INERT SEP switch ..... OFF
- 16 - LANDING GEAR lever ..... DN
- 17 - FLAPS lever ..... TO

*Continue* ►

**Engine regulation discrepancy, power loss,  
throttle control loss****3/3**► *Continuing*

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

*When runway is assured :*

- 19 - THROTTLE ..... CUT OFF
- 20 - FLAPS lever ..... LDG as required  
At IAS < 122 KIAS
- 21 - Land normally.
- 22 - Brakes ..... As required  
*End of procedure.*

### Governor control not operating

► Fly the airplane ◀

1 - Continue the flight.

*If  $N_p < 1960$  RPM :*

- Do not perform a go around ◀
- Do not use the reverse ◀

In that case, the go-around performance and the reverse efficiency might be lower than expected.

Repair before further flight.

*End of procedure.*

### Excessive propeller rotation speed

► Fly the airplane ◀

1 - Reduce power and airplane speed to avoid propeller rotation speeds higher than 2050 RPM.

- Land as soon as possible ◀
- Do not perform a go around ◀

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

Repair before further flight.

*End of procedure.*

Engine does not stop on ground

If the engine does not stop when the THROTTLE is set to CUT OFF :

- 1 - FUEL TANK SELECTOR ..... OFF
  - 2 - Wait for engine stop due to lack of fuel in the pipes.
  - 3 - GENERATOR selector ..... OFF
  - 4 - SOURCE selector ..... OFF
  - 5 - Crash lever ..... Pull down
- Inform maintenance department.

*End of procedure.*

PIM - Not authorized for operation

**ITT HI** during takeoff

1 - Continue takeoff normally.

When takeoff procedure is completed :

If AT is engaged :

2 - AT ..... Disconnect

3 - THROTTLE ..... Reduce  
To get ITT < 820°C

• NOTE •

Above 400 ft AGL, autothrottle engine protection system will reduce power to get ITT below 820°C. The resulting engine power is sufficient to maintain minimum climb gradients.

•

End of procedure.

**ITT HI**

Indicates that ITT is between 820°C and 839°C.

▲ **CAUTION** ▲

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



● **NOTE** ●

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



- 1 - Check that AT reacts to reduce ITT.
- 2 - ITT decreasing ..... Check  
Below 820°C

● **NOTE** ●

Single engine indicator may stay with ITT display for ITT > 818°C.



If ITT does not reduce :

- 3 - AT ..... Disconnect
  - 4 - THROTTLE ..... Reduce  
To get ITT below 820°C
- End of procedure* ■

If AT is failed or if ESP is OFF :

- 5 - THROTTLE ..... Reduce  
To get ITT below 820°C
- End of procedure.*



Indicates that ITT is more than 840°C.

▲ CAUTION ▲

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



During engine start :

- |  |       |
|--|-------|
| 1 - Starting procedure .....                 | Abort |
| Refer to procedure Engine start, chapter 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 ■

In flight :

► Fly the airplane ◀

- |                              |        |
|------------------------------|--------|
| 4 - AT disengaged .....      | Check  |
| 5 - THROTTLE .....           | Reduce |
| To get ITT < 840°C           |        |
| ► Land as soon as possible ◀ |        |

Inform maintenance department.

End of procedure.



**CHIP**

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

*In flight :*

► Fly the airplane ◀

► Land as soon as practical ◀

Inform maintenance department.

*End of procedure ■*

*On ground :*

► Do not take off ◀

Airplane is grounded.

Inform maintenance department.

*End of procedure.*

**NG HI** during takeoff

1 - Continue takeoff normally.

When takeoff procedure is completed :

If AT is engaged :

2 - AT ..... Disconnect

3 - THROTTLE ..... Reduce  
To get Ng < 103 %

• NOTE •

Above 400 ft AGL, autothrottle engine protection system will reduce power to get Ng below 103 %. The resulting engine power is sufficient to maintain minimum climb gradients.

•

End of procedure.

**NG HI**

Indicates that Ng speed is between 103 and 104 %.

**▲ CAUTION ▲**

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

**● NOTE ●**

Single engine indicator has switched to NG parameter.



- 1 - Check that AT reacts to reduce Ng.
- 2 - Ng decreasing ..... Check  
Below 103 %

**● NOTE ●**

Single engine indicator may stay with NG display for Ng > 102.8 %.



If Ng does not reduce :

- 3 - AT ..... Disconnect
- 4 - THROTTLE ..... Reduce  
To get Ng below 103 %  
*End of procedure ■*

If AT is failed or if ESP is OFF :

- 5 - THROTTLE ..... Reduce  
To get Ng below 103 %  
*End of procedure.*



*Indicates that Ng speed is more than 104 %.*

▲ **CAUTION** ▲

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



- |     |                              |                       |
|-----|------------------------------|-----------------------|
| 1 - | AT disengaged .....          | Check                 |
| 2 - | THROTTLE .....               | Reduce                |
|     |                              | To get Ng below 103 % |
|     | ▶ Land as soon as possible ◀ |                       |

Inform maintenance department.

*End of procedure.*

**OIL TEMP**

Indicates that oil temperature is below 0°C or above 104°C (possibly with **OIL PRESS**).

1 - Oil temperature indicator ..... Check

*If the indicated temperature is in the green sector :*

▶ Land as soon as possible ◀

▶ Fly the airplane ◀

2 - Oil temperature ..... Monitor

*End of procedure* ■

*If the indicated temperature is not in the green sector :*

Failure is confirmed, you can expect an oil pressure failure shortly.

▲ **CAUTION** ▲

Due to the oil pressure drop, the propeller blade angle may go towards high pitch and therefore lead to a Np propeller rotation speed decrease.

▲

▲ **CAUTION** ▲

Prepare for an engine stop shortly.

▲

3 - TRQ ..... Minimum necessary

▶ Land as soon as possible ◀

*If engine power decreases :*

4 - THROTTLE ..... CUT OFF

5 - Perform procedure ..... Forced landing

Refer to chapter 3.7

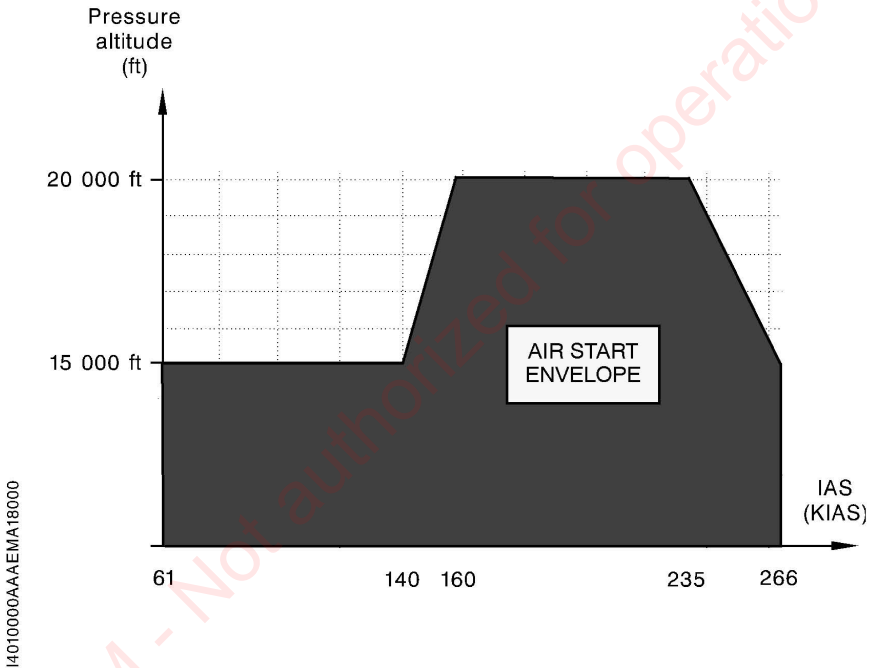
*End of procedure.*

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PIM - Not authorized for operation

**3.4 - Air start**

## Air start envelope



## • NOTE •

Air start may be attempted outside of the envelope. However, above 20000 ft or at lower speeds, ITT tends to increase during start and prudence is recommended.

•

*End of procedure.*

**Air start procedures** 1/2

- 1 - Oxygen masks ..... Use

▲ **CAUTION** ▲

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



- 2 - GENERATOR selector ..... MAIN

▲ **CAUTION** ▲

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



- 3 - BLEED switch ..... OFF  
4 - A/C switch ..... OFF  
5 - Electric consumption ..... Reduce  
6 - FUEL TANK SELECTOR ..... L or R  
7 - AUX BP switch ..... ON

● **NOTE** ●

Maintain AUX BP switch in ON position for the remainder of the flight.



- 8 - IGNITION switch ..... AUTO or ON  
9 - THROTTLE ..... CUT OFF  
10 - STARTER switch ..... ON, start timer

*If there is no start after 5 seconds :*

- 11 - STARTER switch ..... ABORT

*When Ng around 13 % :*

- 12 - THROTTLE ..... LO-IDLE  
13 - ITT and Ng ..... Monitor

● **NOTE** ●

Autothrottle engine protection system is disabled during engine start, thus there is no protection against ITT exceedances.



*Continue* ►



## Air start procedures

2/2

▶ *Continuing**When Ng > 50 % :*

14 - Starter ..... Check OFF automatically

*If starter has not turned off automatically :*

15 - STARTER switch ..... ABORT

16 - THROTTLE ..... Flight IDLE

17 - THROTTLE ..... As required

18 - BLEED switch ..... As required

19 - Electrical equipment ..... As required

*If necessary :*20 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6*If air start is not successful :*21 - Perform procedure ..... Forced landing  
Refer to chapter 3.7*End of procedure.*

Intentionally left blank

PIM - Not authorized for operation

**3.5 - Fire and smoke****Engine fire on ground**

Symptoms : ITT increasing, **ITT** , smoke, ...

- |     |                          |             |
|-----|--------------------------|-------------|
| 1 - | THROTTLE .....           | CUT OFF     |
| 2 - | BLEED switch .....       | OFF         |
| 3 - | A/C switch .....         | OFF         |
| 4 - | Brakes .....             | As required |
| 5 - | FUEL TANK SELECTOR ..... | OFF         |

If necessary :

- 6 - Warn ground assistance.
- 7 - Crash lever .....
- Pull down

► Evacuate as soon as possible ◀

*End of procedure.*

Cabin fire on ground

1 - THROTTLE ..... CUT OFF

2 - Brakes ..... As required

*If necessary :*

3 - Warn ground assistance.

4 - Crash lever ..... Pull down

5 - Cabin extinguisher ..... As required

▶ Evacuate as soon as possible ◀

*End of procedure.*

PIM - Not authorized for operation

**Engine fire in flight**

Symptoms : ITT increasing, **ITT** , smoke, ...

**▲ WARNING ▲****No air start attempt after an engine fire.****► Fly the airplane ◀**

- |     |                          |         |
|-----|--------------------------|---------|
| 1 - | Oxygen masks .....       | Use     |
| 2 - | THROTTLE .....           | CUT OFF |
| 3 - | AUX BP switch .....      | OFF     |
| 4 - | FUEL TANK SELECTOR ..... | OFF     |
- 5 - BLEED switch ..... OFF
- 6 - A/C switch ..... OFF
- If necessary :*
- 7 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6
- 8 - Perform procedure ..... Forced landing  
Refer to chapter 3.7
- End of procedure.*

Cabin electrical fire or smoke during flight

► Fly the airplane ◀

- 1 - Oxygen masks and goggles ..... Use

*If the origin is known :*

- 2 - Defective equipment breaker ..... Pull  
3 - Cabin extinguisher ..... Use

*If the origin is unknown :*

- 4 - A/C switch ..... OFF  
5 - All unnecessary equipment ..... OFF  
6 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6

*If necessary :*

- 7 - Perform procedure ..... Smoke elimination  
Refer to procedure hereafter

► Land as soon as possible ◀

*End of procedure.*

**Smoke elimination**

- 1 - Oxygen masks and goggles ..... Use
- 2 - BLEED switch ..... OFF
- 3 - A/C switch ..... OFF
- 4 - DUMP switch ..... Actuate
- 5 - Wait until the 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.*

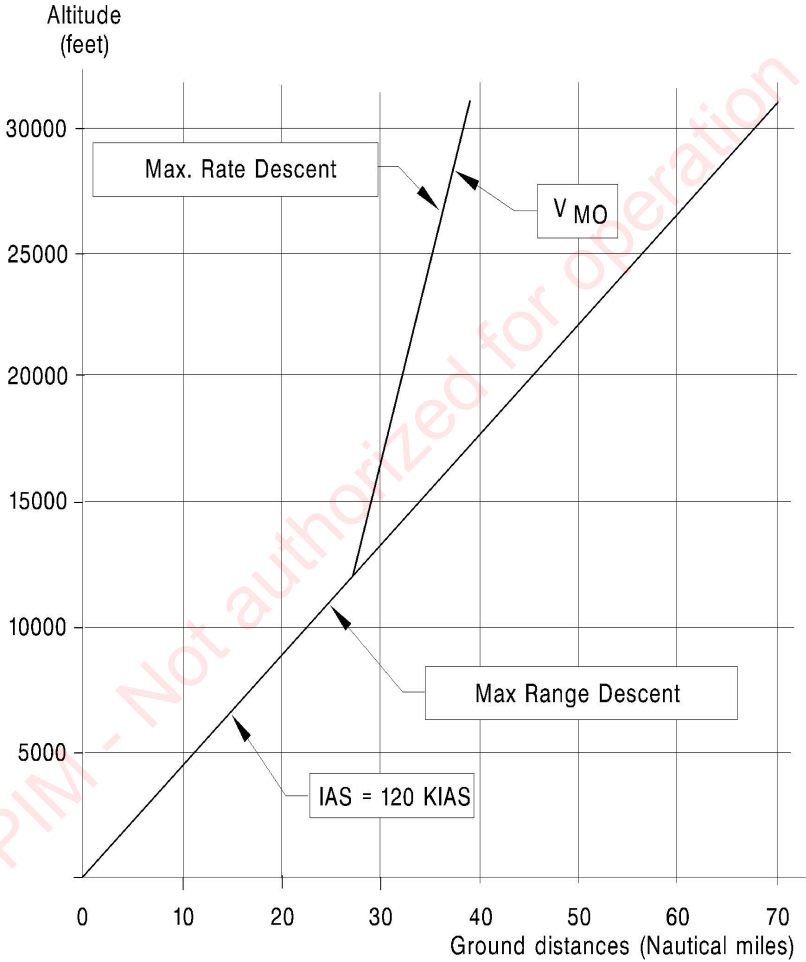
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PIM - Not authorized for operation



**3.6 - Emergency descents**

**Emergency descents profiles**



No wind - Smooth atmosphere

I4010000AAAAA08200

Maximum rate descent

- 1 - THROTTLE ..... Flight IDLE
- 2 - Oxygen masks ..... Use
- 3 - Pitch attitude ..... - 10° to - 20°

*If smooth air :*

- 4 - FLAPS and LANDING GEAR levers ..... UP
- 5 - Airspeed .....  $V_{MO} = 266$  KIAS

*If rough air or in case of structure problem :*

- 6 - Airspeed ..... Below 178 KIAS
- 7 - FLAPS lever ..... UP
- 8 - LANDING GEAR lever ..... DN

*End of procedure.*

Maximum range descent	1/2
-----------------------	-----

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

2 - THROTTLE ..... CUT OFF

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

4 - Airspeed ..... 120 KIAS

5 - DUMP switch ..... Actuate

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

*If VMC and non icing conditions are possible :*

7 - ESS BUS TIE switch ..... EMER

8 - Prepare for ..... Forced landing  
Refer to chapter 3.7

*End of procedure* ■

*If VMC and non icing conditions are not possible :*

Breakers :

9 - PFD 2 ..... Pull

10 - ADC 2 ..... Pull

11 - XPDR 2 ..... Pull

Switches :

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

13 - DE ICE SYSTEM ..... All OFF

14 - Lights ..... All OFF

15 - BLEED ..... OFF

16 - A/C ..... OFF

17 - AUX BP ..... OFF

18 - FUEL SEL ..... MAN

*Continue* ►

Maximum range descent	2/2
-----------------------	-----

► *Continuing*

- 19 - AP / TRIMS ..... OFF
- 20 - DIMMER / CABIN / ACCESS ..... OFF

*If icing conditions :*

- 21 - PITOT L/R & STALL HTR switch ..... ON
- 22 - WINDSHIELD switch ..... ON
- 23 - Airspeed ..... Above 135 KIAS  
Configuration flaps UP

*If time permits :*

- 24 - PLUGS breakers ..... Pull
- 25 - AIR COND breaker ..... Pull
- 26 - Prepare for ..... Forced landing  
Refer to chapter 3.7

*End of procedure.*

**3.7 - Emergency landings, flaps, gear****Forced landing**

- |                              |         |
|------------------------------|---------|
| 1 - THROTTLE .....           | CUT OFF |
| 2 - FUEL TANK SELECTOR ..... | OFF     |
| 3 - AUX BP switch .....      | OFF     |
- 4 - BLEED switch ..... OFF
- 5 - A/C switch ..... OFF
- 6 - DUMP switch ..... Actuate
- 7 - Gliding airspeed ..... Maintain 120 KIAS  
Until favorable ground approach
- 8 - ESS BUS TIE switch ..... NORM  
To have GEAR and FLAPS available

*If landing surface is suitable :*

- 9 - LANDING GEAR lever ..... DN

*If landing surface is not suitable :*

- 10 - LANDING GEAR lever ..... Keep UP

*If night conditions :*

- 11 - OFF/TAXI/LDG switch ..... LDG

*When chosen landing surface is assured :*

- 12 - FLAPS lever ..... LDG

- 13 - Crash lever ..... Pull down

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

- 15 - Land flaring out.

- 16 - Evacuate after stop.

*End of procedure.*

**Tire blowout during landing**

- 1 - Control direction with brakes and nose wheel steering.
- 2 - Reverse ..... As required
- 3 - Stop airplane to minimize damages.
- 4 - Perform procedure ..... Shutdown

Refer to chapter 4.3

*End of procedure.*

PIM - Not authorized for operation

**FLAPS ASYM**

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.
- 4 - For landing, refer to procedure ..... Landing with flaps malfunction  
Refer to procedure on following page  
*End of procedure.*

**Flaps malfunction**

*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.
- 4 - For landing, refer to procedure ..... Landing with flaps malfunction  
Refer to procedure hereafter  
*End of procedure.*

**Landing with flaps malfunction**

*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**

## ● NOTE ●

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

●

*Symptoms :*

- **GEAR UNSAFE** CAS msg and GEAR UNSAFE red warning light are ON, or
- amber light flashing and 3 green lights are OFF.

1 - Airspeed ..... Maintain below 150 KIAS

2 - LDG GEAR breaker ..... Pull

*If **GEAR UNSAFE** CAS msg 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  
Refer to following procedures

*End of procedure ■**If not :*

- 5 - LDG GEAR breaker ..... Push
- 6 - Perform procedure ..... Emergency gear extension  
Refer to following procedures

*End of procedure.*

Landing gear extension discrepancy

• NOTE •

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

•

Symptoms :

- **GEAR UNSAFE** CAS msg and GEAR UNSAFE red warning light are ON, or
- amber light flashing and 0 to 3 green lights are OFF.

1 - Airspeed ..... Maintain below 150 KIAS

- 2 - Perform procedure ..... Emergency gear extension  
Refer to procedure on following page

*End of procedure.*

PIM - Not authorized for operation

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 - | By-pass selector .....   | Fully pull / Locked     |

▲ CAUTION ▲

The entire extension of the landing gear may take up to 110 cycles. It is mandatory to have a clear hardening of the manual control at the end of the maneuver.

- |     |  |  |
|-----|--|--|
| 6 - | Landing gear emergency pump handle ..... | Actuate<br>With maximum amplitude until pump hardening |
| 7 - | MASTER WARNING push-button .....         | 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*
  - *3 green lights are ON :*
    - 8 - *Exit and / or remain outside icing conditions.*
- Continue flight at airspeed < 178 KIAS.*

► Land as soon as practical ◀

*End of procedure* ■

*If :*

- *GEAR UNSAFE red warning light is ON and*
- **GEAR UNSAFE** *is ON and*
- *0 to 3 green lights are ON :*
  - 9 - *LDG GEAR breaker* ..... *Push*
  - 10 - *CHECK DOWN push-button* ..... *Press*

*If :*

- *hardening of the pump is marked and*
- *3 green lights are ON or*
- *3 green lights are ON and flickering while pressing the CHECK DOWN push-button :*
  - 11 - *Land*

*End of procedure* ■

*Continue* ►

## Emergency gear extension

3/3

▶ *Continuing**If :*

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

A gear unlock condition is confirmed.

Recycle the landing gear as follows :

- 12 - By-pass selector ..... Unlock / Push
- 13 - Wait 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  
Refer to following procedures

**▲ 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 in the following procedures.



*End of procedure.*

Landing with unlocked main landing gear 1/2

**▲ 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 in the following procedures.



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

*If defective gear is down but unlocked :*

- 2 - BLEED switch ..... OFF
- 3 - DUMP switch ..... Actuate
- 4 - FUEL TANK SELECTOR ..... Maintain on defective LDG gear side  
    To lighten corresponding wing (maximum fuel imbalance 15 USG)
- 5 - Choose a runway with headwind or crosswind blowing from 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 - AT / AP ..... 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.

*Continue ►*

## Landing with unlocked main landing gear

2/2

► *Continuing**If landing gear drags during landing :*

- 12 - THROTTLE ..... CUT OFF
- 13 - Crash lever ..... Pull down
- 14 - FUEL TANK SELECTOR ..... OFF
- 15 - Evacuate after airplane comes to a stop.

*End of procedure ■**If landing gear does not drag during landing :*

- 16 - Preferably do not use reverse.
- 17 - Complete taxiing with a slight turn towards defective landing gear.
- 18 - THROTTLE ..... CUT OFF
- 19 - Perform procedure ..... Shutdown  
Refer to chapter 4.3
- 20 - Evacuate.

*End of procedure.*

**Landing with defective nose landing gear  
(down unlocked or not down)**

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

*If necessary :*

- 1 - Transfer passengers to the rear.
- 2 - Perform a normal approach.
- 3 - FLAPS lever ..... LDG
- 4 - Airspeed ..... Maintain 90 KIAS
- 5 - AT / AP ..... Disconnect  
Before 200 ft
- 6 - Land with nose-up attitude. Keep nose high.
- 7 - THROTTLE ..... CUT OFF
- 8 - Touch down slowly with nose wheel and keep elevator at nose-up stop.
- 9 - Brakes ..... Apply moderately
- 10 - Crash lever ..... Pull down
- 11 - FUEL TANK SELECTOR ..... OFF
- 12 - Evacuate after airplane comes to a stop.

*End of procedure.*



**Landing with gear up**

- 1 - Do a standard final approach.
- 2 - FLAPS lever ..... LDG
- 3 - Airspeed ..... Maintain 85 KIAS
- 4 - BLEED switch ..... OFF
- 5 - DUMP switch ..... Actuate
- 6 - AT / AP ..... Disconnect  
Before 200 ft

*When runway is assured :*

- 7 - THROTTLE ..... CUT OFF
- 8 - FUEL TANK SELECTOR ..... OFF
- 9 - Flare out.

*After touch-down :*

- 10 - Crash lever ..... Pull down
- 11 - Evacuate after airplane comes to a stop.

*End of procedure.*

**Ditching**

**▲ CAUTION ▲**

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



- 1 - AT / AP ..... Disconnect  
Before 200 ft
- 2 - LANDING GEAR lever ..... UP
- 3 - FLAPS lever ..... LDG
- 4 - Airspeed ..... Maintain above 85 KIAS
- 5 - Maintain a descent rate as low as possible when approaching the water.
- 6 - BLEED switch ..... OFF
- 7 - DUMP switch ..... Actuate
- 8 - Crash lever ..... Pull down
- 9 - Maintain attitude without flaring out until touch-down.
- 10 - Evacuate through EMERGENCY EXIT.

*End of procedure.*

**Landing without elevator control**

- 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  $\approx$  300 ft/min
- 5 - Adjust elevator by using manual pitch trim wheel.

*When ground approaches :*

- 6 - Slope ..... Decrease progressively
- 7 - TRQ ..... Reduce progressively

*End of procedure.*

>> With HomeSafe emergency function (Post-MOD70-0650-34A)

**AC CONF MISMATCH**

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  
Refer to chapter 3.7

*End of procedure.*

>> With HomeSafe emergency function (Post-MOD70-0650-34A)

**HS ABN BRAKES**

*Indicates that the HomeSafe auto-brake servo is operating.*

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

- 1 - AP/TRIM DISC push-button ..... Press twice  
AT and AP also disengage

*End of procedure.*

PIM - Not authorized for operation

Intentionally left blank

PIM - Not authorized for operation

**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 BOOST PMP 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 practical ◀

*End of procedure ■*If **FUEL PRESS** remains ON :

- 7 - FUEL TANK SELECTOR ..... Switch tanks

If **FUEL PRESS** is OFF :A supply problem may have occurred from the tank selected first  
(air vent, fuel icing, etc...).*End of procedure ■**Continue ►*

**FUEL PRESS**

2/2

► *Continuing*

If **FUEL PRESS** remains ON :

- 8 - Fullest tank ..... Select
- 9 - Avoid high power and rapid movements of the THROTTLE.
- 10 - Altitude ..... Below 18000 ft
  - Land as soon as possible ◀
  - Fly the airplane ◀

*End of procedure.*



**AUX BOOST PMP ON**

Indicates 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 ..... AUTO

If **AUX BOOST PMP ON** goes OFF :

- 3 - Continue the flight normally.

End of procedure ■

If **AUX BOOST PMP ON** remains ON :

Mechanical booster pump has failed.

- 4 - AUX BP switch ..... ON

► Land as soon as possible ◀

End of procedure.

**FUEL LOW L-R**

Indicates a level drop in the corresponding tank.

- 1 - Corresponding gage ..... Check
- 2 - Check the other tank has been automatically selected.

If other tank not automatically selected :

- 3 - FUEL SEL switch ..... MAN
- 4 - Select tank manually ..... As required

► Fly the airplane ◀

- 5 - Minimum fuel ..... Check
- 6 - Take decision.

If necessary :

► Land as soon as practical ◀

End of procedure.

**AUTO SEL**

*Indicates that there is no more automatic control mode running.*

► Fly the airplane ◀

1 - FUEL SEL switch ..... Check AUTO

*If FUEL SEL switch already on AUTO :*

Failure is confirmed.

2 - FUEL SEL switch ..... MAN

3 - Select tanks manually ..... As required

▲ CAUTION ▲

Maximum fuel imbalance is 15 USG



*End of procedure.*

PIM - Not authorized for operation

**FUEL IMBALANCE**

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

If FUEL SEL switch is on AUTO :

- 1 - Fullest tank ..... Select  
By pressing the SHIFT push-button

If FUEL SEL switch is on MAN :

- 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**

*Indicates a failure of fuel low level sensor.*

- 1 - Remaining fuel in tanks ..... Check
- 2 - Take decision.

*If any doubt :*

- ▶ Land as soon as practical ◀
- ▶ Fly the airplane ◀

*On the ground :*

Inform maintenance department.

*End of procedure.*

>> With HomeSafe emergency function (Post-MOD70-0650-34A)

**HS FUEL SHUTOFF**

Indicates that the HomeSafe fuel shut-off valve is closed.

▲ **WARNING** ▲

**This may quickly lead to an engine stop if the right fuel tank is selected.**



- 1 - FUEL TANK SELECTOR ..... L
- 2 - AUX BP switch ..... ON

● **NOTE** ●

Maintain AUX BP switch in ON position for the remainder of the flight.



► Land as soon as practical ◀

If **HS FUEL SHUTOFF** remains ON :

A mechanical failure of the HomeSafe fuel shut-off valve may have occurred.

- 3 - FUEL SEL switch ..... MAN
- 4 - FUEL TANK SELECTOR ..... Check L

▲ **CAUTION** ▲

Land as soon as possible to limit fuel imbalance.



*End of procedure.*

**3.9 - Electrical system****BAT AMP**

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

After starting the engine with airplane power, a battery charge over 50 amperes 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**

*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**

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

- 1 - GENERATOR selector ..... Check / Correct  
If necessary
- If warning persists :*
- Main generator switching is confirmed.
- 2 - MAIN GENERATOR RESET push-button ..... 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 push-button ..... Press
- 6 - Maintain ST-BY loads below 100 A.

*End of procedure.*



**LOW VOLTAGE**

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 push-button ..... 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 push-button ..... 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 push-button ..... 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.

Continue ►

**MAIN GEN** and **LOW VOLTAGE** 2/3

► *Continuing*

9 - GENERATOR selector ..... OFF

*If altitude > 10000 ft :*

10 - OXYGEN switch ..... ON

*If VMC and non-icing conditions are possible :*

11 - ESS BUS TIE switch ..... EMER  
In this configuration, only both ESS BUS bars and BATT BUS bar are directly supplied by the battery.

► Land as soon as possible ◀

*If use of other 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 :

- PFD 2 ..... Pull
- ADC 2 ..... Pull
- TAS ..... Pull
- DATA LINK ..... Pull
- XPDR 2 ..... Pull

Switches :

- DE ICE SYSTEM mode ..... MAN  
All deicing systems turn on
- ICE LIGHT ..... OFF
- INERT SEP ..... As required
- AIRFRAME DE ICE ..... OFF
- PROP DE ICE ..... OFF

*Continue* ►

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

► *Continuing*

- WINDSHIELD ..... OFF
- OFF/LDG/TAXI light ..... OFF
- PULSE ..... OFF
- STROBE ..... OFF
- BLEED ..... OFF
- A/C ..... OFF
- AUX BP ..... OFF
- FUEL SEL ..... MAN
- AP / TRIMS ..... OFF
- DIMMER / CABIN / ACCESS ..... OFF

*If icing conditions :*

- 14 - PITOT L/R & STALL HTR switch ..... Check ON
- 15 - WINDSHIELD switch ..... ON
- 16 - Maintain minimum recommended airspeeds into known icing conditions.

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

*If time permits :*

- 17 - PLUGS breakers ..... Pull
  - 18 - AIR COND breaker ..... Pull
- Land as soon as possible ◀

*End of procedure.*

**ELEC FEATH FAULT**

*Indicates a propeller feathering system malfunction.*

► Fly the airplane ◀

- 1 - FEATHER breaker ..... Pull  
► Land as soon as possible ◀

• NOTE •

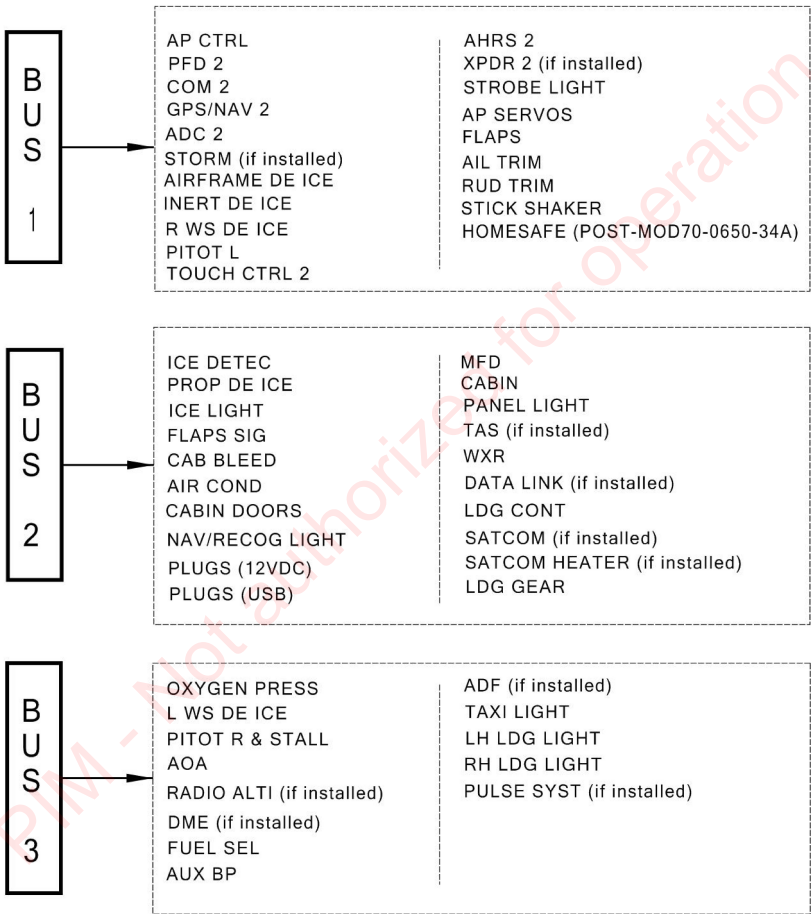
Auto ignition may turn on during engine shutdown.

•

*End of procedure.*

PIM - Not authorized for operational use

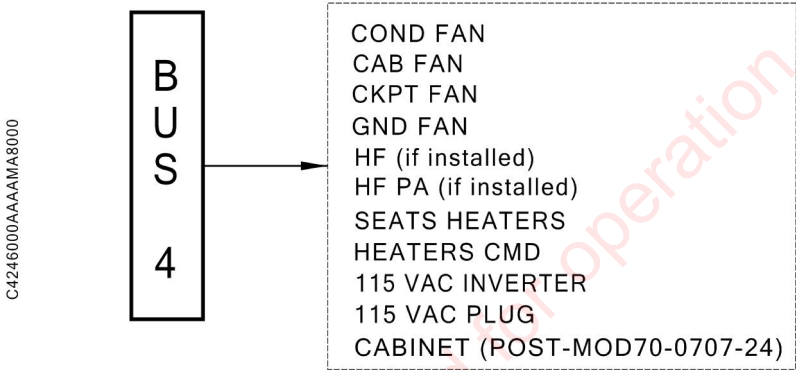
Bus bar 1/3



I4246000AAASMA8001

Figure 3.9.1 (1/3) - Electrical distribution of bus bars

Bus bar 2/3



NOTE: CIRCUIT BREAKERS ON C13 BIS FRAME

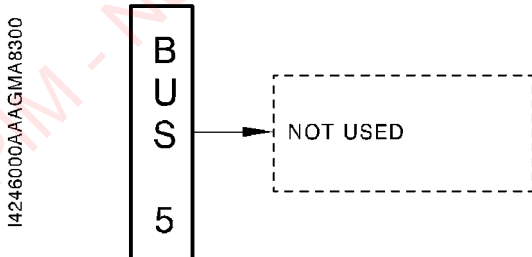
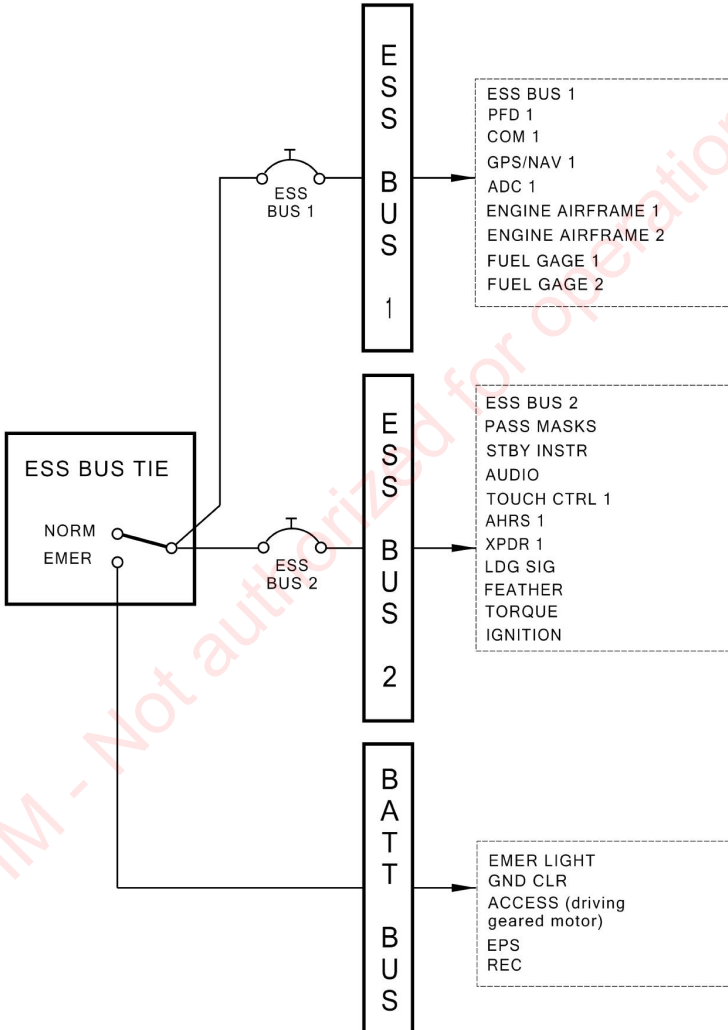


Figure 3.9.1 (2/3) - Electrical distribution of bus bars

Bus bar 3/3



C4246000AAAAA8100

Figure 3.9.1 (3/3) - Electrical distribution of bus bars



**Total loss of electrical power**

- 1 - Maintain airplane control.
- 2 - Use the MD 302 for
  - attitude,
  - airspeed,
  - altitude and/or
  - heading.

► Fly the airplane ◀

► 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.

*End of procedure.*

Intentionally left blank

PIM - Not authorized for operation

### 3.10 - Pressurization and air conditioning

<b>PRESSU OFF</b>	1/2
-------------------	-----

Possibly due to :

- system malfunction,
- BLEED switch on OFF position.

If in flight :

1 -	Oxygen masks .....	Use
2 -	BLEED switch .....	Check / Correct
<i>If possible :</i>		
3 -	TRQ .....	Reduce
▶ Fly the airplane ◀		
4 -	BLEED switch .....	OFF
5 -	BLEED switch .....	AUTO

If **PRESSU OFF** is still ON :

*If altitude > 10000 ft :*

*If necessary :*

- 6 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6
- 7 - Continue the flight.

● NOTE ●

If  $Z_p > 10000 \text{ ft} \pm 500 \text{ ft}$ , it may be followed by **CABIN ALTITUDE** and

**USE OXYGEN MASK**

●

Inform maintenance department.

*End of procedure* ■

*Continue* ▶

**PRESSU OFF**

2/2

► *Continuing*

*If on ground :*

8 - BLEED switch ..... OFF

9 - Taxi back to apron.

10 - Perform procedure ..... Shutdown  
Refer to chapter 4.3

Inform maintenance department.

*End of procedure.*

PIM - Not authorized for operation

**GAS EVENT**

*Indicates a GASC system malfunction (only displayed 45 sec. after landing)*

- 1 - Taxi back to the apron.
- 2 - Perform procedure ..... Shutdown  
Refer to chapter 4.4
- 3 - Inform maintenance department before next flight.

*End of procedure.*

PIM - Not authorized for operation

**GAS DEGRADED**

*Indicates a GASC system malfunction*

- 1 - Shorten the flight.
- 2 - Inform maintenance department before next flight.

*End of procedure.*

PIM - Not authorized for operation

**PRESSU BACKUP**

*Indicates a GASC system malfunction. The GASC cannot compute optimal cabin altitude and is automatically set to 9800 ft default value as cabin altitude reference.*

► Fly the airplane ◀

1 - Continue the flight.

Inform maintenance department before next flight.

▲ **CAUTION** ▲

When the airplane descends below 9800 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 ALTITUDE** and **USE OXYGEN MASK**

• NOTE •

**CABIN ALTITUDE** is followed by **USE OXYGEN MASK** and 3 voice alerts  
"Use oxygen mask / Use oxygen mask".

Indicates a cabin altitude over 10000 ft ± 500 ft.

- |   |       |
|---|-------|
| 1 - Pressurization indicator .....                | Check |
| <i>If cabin altitude &gt; 10000 ft ± 500 ft :</i> |       |
| 2 - Oxygen masks .....                            | Use   |

► Fly the airplane ◀

- 3 - BLEED switch ..... Check AUTO
- 4 - DUMP switch ..... Check NORM / Guarded
- 5 - EMERGENCY RAM AIR control knob ..... Check pushed

*If necessary :*

- 6 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6

- 7 - Limit flight altitude to maintain cabin altitude below 10000 ft.

■ Inform maintenance department before next flight.

*End of procedure.*



**EDM**

• NOTE •

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

EDM makes a 90° left heading change and descent to 15000 ft.  
EDM override is possible by pressing twice the AP / TRIM DISC push-button,  
and other AP modes are usable.  
AT engages automatically and reduces power.

Indicates a cabin altitude over 10000 ft ± 500 ft.

- |   |                                |       |
|---|--------------------------------|-------|
| 1 -   | Pressurization indicator ..... | Check |
| <i>If cabin altitude &gt; 10000 ft ± 500 ft :</i> |                                |       |
| 2 -   | Oxygen masks .....             | Use   |

▶ Fly the airplane ◀

- 3 - BLEED switch ..... Check AUTO
- 4 - DUMP switch ..... Check NORM / Guarded
- 5 - EMERGENCY RAM AIR control knob ..... Check pushed

*If necessary :*

- 6 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6
- 7 - Limit flight altitude to maintain cabin altitude below 10000 ft.

*End of procedure.*

**CABIN DIFF PRESS**

*Indicates a cabin pressure differential over 6.4 PSI  $\pm$  0.2 PSI.*

1 - Pressurization indicator ..... Check

*If  $\Delta P > 6.4 \text{ PSI} \pm 0.2 \text{ PSI}$  :*

2 - BLEED switch ..... OFF

3 - Oxygen masks ..... Use

► Fly the airplane ◀

*If necessary :*

4 - Perform procedure ..... Emergency descent  
Refer to chapter 3.6

*End of procedure.*

**Cabin not depressurized after landing**

*If  $\Delta P$  cabin remains  $> 0$  :*

- 1 - DUMP switch ..... Actuate
- 2 - BLEED switch ..... OFF

*If necessary :*

- 3 - EMERGENCY RAM AIR control knob ..... Pull
- 4 - Wait for complete cabin depressurization before opening any door.

*End of procedure.*



*Indicates that the oxygen cylinder isolation valve is closed.*

**▲ WARNING ▲**

**Flight is prohibited with oxygen cylinder closed.**



- 1 - Oxygen cylinder ..... Open

*End of procedure.*

PIM - Not authorized for operation

**DOOR**

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

On ground :

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

If **DOOR** is still ON :

- 2 - Do not take off.

End of procedure ■

In flight :

► Fly the airplane ◀

- 3 - Start a slow descent.
- 4 - Decrease cabin pressure differential . . . . . By selecting a higher LFE  
(LFE between 9500 ft and 10000 ft)

If a real failure of one of the doors is noticed :

- 5 - Oxygen masks . . . . . Use
- 6 - BLEED switch . . . . . OFF
- 7 - DUMP switch . . . . . Actuate

If necessary :

- 8 - Perform procedure . . . . . Emergency descent  
Refer to chapter 3.6

End of procedure.

**VACUUM LOW**

Low vacuum may lead to malfunctioning of leading edge deicing and pressurization.

1 - Monitor the normal functioning of leading edge deicing and pressurization.

*If necessary :*

2 - Altitude ..... Below 10000 ft

3 - Return to VMC conditions as soon as possible.

► Fly the airplane ◀

4 - BLEED switch ..... OFF

*End of procedure.*

PIM - Not authorized for operation

**Defog malfunction**

*If moisture starts to quickly cover the inside of the windscreen with the HOT AIR FLOW distributor already turned to the left :*

- 1 - HOT AIR FLOW distributor ..... Set to around a 10 o'clock position

*If moisture continues :*

- 2 - HOT AIR FLOW distributor ..... Turn to the left
- 3 - DE ICE SYSTEM mode switch ..... MAN  
All deicing systems turn on
- 4 - WINDSHIELD switch ..... Check ON
- 5 - INERT SEP switch ..... As required
- 6 - AIRFRAME DE ICE switch ..... As required
- 7 - PROP DE ICE switch ..... As required

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

- 8 - Altitude ..... Around 10000 ft
- 9 - BLEED switch ..... OFF

**▲ 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

PIM - Not authorized for operation



**3.11 - Deicing system****AIRFRAME DEICE FAIL**

*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 switch ..... OFF

*End of procedure.*

**PROP DEICE FAIL**

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 switch ..... OFF

*End of procedure.*

**INERT SEP FAIL**

Symptoms :

- **INERT SEP ON** does not appear 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**

*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 switch ..... OFF / ON  
When necessary

*In case of total failure :*

- 3 - TEMP selector ..... Max warm
- 4 - HOT AIR FLOW distributor ..... Turn to the left

*Before landing :*

- 5 - Wait for a sufficient visibility.

*End of procedure.*

**Windshield misting or internal icing***Symptoms : mist or ice on windshield internal face.*

- 1 - TEMP selector ..... Set to 12 o'clock position
- 2 - HOT AIR FLOW distributor ..... Turn to the left
- 3 - DE ICE SYSTEM mode switch ..... MAN  
All deicing systems turn on
- 4 - WINDSHIELD switch ..... ON

**▲ WARNING ▲****If icing conditions, turn deicing systems on.**

- 5 - INERT SEP switch ..... As required
- 6 - AIRFRAME DE ICE switch ..... As required
- 7 - PROP DE ICE switch ..... As required

*If unsuccessful, to get sufficient visibility :*

- 8 - HOT AIR FLOW distributor ..... Fully turn to the left
- 9 - Manually clean a sufficient visibility area.

*If necessary :***▲ CAUTION ▲**

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



- 10 - Clean L.H. side window.
- 11 - Perform a sideslip approach with rudder pedals to the right.  
To get sufficient landing visual references

*For landing :*

- 12 - FLAPS lever ..... LDG
- 13 - Airspeed ..... Maintain above 95 KIAS

*End of procedure.*

**PITOT NO HT L-R**

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** :

Icing conditions may alter airspeed indications provided by ADC1.

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** :

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

► Fly the airplane ◀

- 3 - Airspeed ..... Monitor below 266 KIAS

End of procedure.

**STALL NO HEAT**

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**

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**

*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.*

PIM - Not authorized for operation

Intentionally left blank

PIM - Not authorized for operation

**3.12 - Miscellaneous****Unsuccessful AT disconnection**

*Symptoms : AT is still engaged and active after having pressed the AT DISC push-button.*

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

*If unsuccessful to disconnect AT using AT key on AFCS control box :*

2 - AP/TRIM DISC push-button ..... Press  
AP also disengages  
Re-engage if needed

*If unsuccessful to disconnect AT using AP/TRIM DISC push-button :*

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

*If unsuccessful to disconnect AT by forcing the THROTTLE :*

4 - MAN OVRD control ..... Forward  
Up to AT disconnection  
Move full backward and use THROTTLE to manage power

*If unsuccessful to disconnect AT using MAN OVRD control :*

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

*If unsuccessful to disconnect AT :*

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

*End of procedure.*

**Trim Runaway**

▶ Fly the airplane ◀

- 1 - AP / TRIM DISC push-button ..... Press and hold

● NOTE ●

When AP / TRIM DISC push-button is pressed and held, autothrottle also disengages.

●

The three trim tabs are disconnected and runaway stops.

- 2 - AP / TRIMS switch ..... OFF
- 3 - AP / TRIM DISC push-button ..... 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.*

Crack in cockpit window or window panel

► Fly the airplane ◀

- 1 - Descend slowly.
- 2 - Cabin  $\Delta P$  ..... Reduce  
By setting Landing Field Elevation to 10000 ft

*End of procedure.*

PIM - Not authorized for operation

### Emergency exit use

- 1 - Check that the anti-theft safety pin has been removed.
- 2 - Lift up the opening handle.
- 3 - Pull emergency exit assembly towards oneself to release it from its recess.
- 4 - Put the emergency exit door inside fuselage or throw it away from the fuselage through the opening.
- 5 - Evacuate airplane.

*End of procedure.*

Emergency beacon (ELT) use

*Before a forced landing :*

*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.*

PIM - Not authorized for operation

Inadvertent spins

**▲ WARNING ▲**

**Voluntary spins are prohibited.**



- 1 - AP / TRIM DISC push-button ..... Press and Hold until recovery
  - 2 - Control wheel ..... Neutral  
Pitch and roll axis
  - 3 - Rudder ..... Fully opposed to the spin
  - 4 - THROTTLE ..... Flight IDLE
  - 5 - FLAPS lever ..... UP
- When rotation is stopped :*
- 6 - Level the wings and ease out of the dive.
- ▶ Fly the airplane ◀

*End of procedure.*



**AP off, stall warning**

• 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.*

**USP ACTIVE**

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**

*Indicates that no aural warning alerts are available.*

▲ **CAUTION** ▲

No aural stall warning.  
No aural overspeed warning.  
No 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 CHNL**

## • NOTE •

System switches automatically on the remaining valid aural channel.

•

*End of procedure.*

PIM - Not authorized for operation

**ESP FAIL**

*Indicates 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 flight.
- 3 - Inform maintenance department.

*End of procedure.*

**ESP DEGRADED - IAS**

*Indicates high speed protection is inoperative.*

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

► Fly the airplane ◀

1 - Maintain IAS below 266 KIAS.

2 - Continue flight.

3 - Inform maintenance department.

*End of procedure.*

**ESP DEGRADED - AOA**

*Indicates AoA protection at low speed is inoperative.*

► Fly the airplane ◀

1 - Maintain airspeed above 1.3Vs.

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

- 2 - Continue flight.
- 3 - Inform maintenance department.

*End of procedure.*

Oxygen use 1/2

With or without **USE OXYGEN MASK**.

**▲ WARNING ▲**

**Smoking is strictly prohibited any time oxygen system is used. Before using oxygen, remove any trace of oil, grease, soap and other fatty substances (including lipstick, make-up, etc...).**



For front seats :

- 1 - Take a mask on the opposite seat side (pilot : R.H. side ; R.H. Front passenger : L.H. side). Draw it out of the stowage cup and uncoil tube totally.
  - 2 - Press on the red side vanes to inflate the harness.
  - 3 - Put the mask onto the face.
- If no smokes :*
- 4 - 3-position selector ..... NORMAL  
100 % as required
- In case of smokes :*
- 5 - 3-position selector ..... EMERGENCY
  - 6 - Don the smoke goggles onto the face.
  - 7 - PASSENGER OXYGEN switch ..... DEPLOY
  - 8 - Check oxygen flow indicator for the front seats (the blinker is transparent) and for the rear passengers (the blinker is green).
  - 9 - MICRO/MASK switch ..... MASK
  - 10 - Perform an emergency descent ..... To the minimum enroute altitude
- If possible :*
- 11 - Perform an emergency descent ..... To an altitude below 10000 ft

*Continue ►*

Oxygen use

2/2

► *Continuing*

*For rear passengers :*

- 1 - Take a mask.
- 2 - Uncoil tube totally.
- 3 - Pull on the lanyard cord to take out the lanyard pin.
- 4 - Put the mask onto the face.

*End of procedure.*



**Airspeed indicating system failure**

*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 L.H instrument panel :*

4 - Perform a precautionary approach maintaining an adequate airspeed.

*End of procedure.*

**Flight into severe icing conditions**

*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.*

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 any sudden maneuver on flight controls.

▶ Do not engage the autopilot ◀

*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 extended flaps 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 them until the airframe is clear of ice.

*End of procedure.*

**CARGO DOOR**

*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 practical ◀

*End of procedure.*

PIM - Not authorized for operation

**GPU DOOR**

*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 practical ◀

*End of procedure.*

PIM - Not authorized for operation

**IGNITION**

*Indicates that ignition exciter is running.*

1 - IGNITION switch ..... Check position

*If weather permits :*

2 - IGNITION switch ..... AUTO

► Fly the airplane ◀

• NOTE •

IGNITION switch may be left ON for a long period.

•

*End of procedure.*

PIM - Not authorized for operation

**AP ON YD OFF**

*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.*

PIM - Not authorized for operation

**Autopilot or electric pitch trim malfunction****▲ 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 push-button ..... Press and hold

**● NOTE ●**

When AP / TRIM DISC push-button is pressed and held, autothrottle also disengages.



- 2 - AP / TRIMS switch ..... OFF  
3 - AP / TRIM DISC push-button ..... Release

*If necessary :*

- 4 - Control wheel ..... Retrim

*End of procedure.*

Dual GPS/SBAS failure ( <b>DR</b> or <b>LOI</b> annunciation on HSI)	1/2
---	-----

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 LOI.

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

If the 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

*Continue* ►



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

2/2

► *Continuing*

If no alternate navigation sources are available :

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

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

## ● 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).

- 1 - 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.*

**ABORT APR**

*Indicates a loss of GPS navigation.*

▶ Perform a go-around ◀

*End of procedure.*

PIM - Not authorized for operation

**APR DWNGRADE**

*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 •

Refer to the section 7 to get details on the approach downgrading process.

•

*End of procedure.*

**PIT** in AP vertical mode during FD approach with vertical guidance

*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

*Symptoms :*

- VDI amber or VDI white 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

► Fly the airplane ◀

- 1 - L.H. DISPLAY BACKUP ..... Engage  
TAS system is lost.
- 2 - XFR button (on AFCS) ..... Press / to right side then left side  
*End of procedure.*

PIM - Not authorized for operation

<b>AHRS failure</b>	<b>1/2</b>
---------------------	------------

*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, ...

- 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 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***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 - ADC 1 and/or ADC 2 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** , **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

• NOTE •

If PFD2 is in fullscreen mode, it will be splitted a few seconds after MFD failure.

•

Lost system :

- MFD

Actions :

- 1 - L.H. DISPLAY BACKUP button ..... Press
- 2 - MFD breaker ..... Check pushed

*End of procedure.*

PIM - Not authorized for operation

**XPDR1 FAIL** or **XPDR2 FAIL**

*Indicates 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 flight.
- 3 - Inform maintenance department.

*If transponder 2 [or transponder 1] is unavailable :*

- 4 - Inform Air Traffic Control of the loss of the second transponder.
- 5 - Leave controlled airspace.
- 6 - Continue flight.
- 7 - Inform maintenance department.

*End of procedure.*

**XPDR1 ADS-B FAIL** or **XPDR2 ADS-B FAIL**

*Indicates 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 flight.
- 3 - Inform maintenance department.

*If transponder 2 [or transponder 1] is unavailable :*

- 4 - Inform Air Traffic Control.
- 5 - Leave ADS-B OUT airspace.
- 6 - Continue flight.
- 7 - Inform maintenance department.

*End of procedure.*

**GWX FAIL**

*Indicates that GWX weather radar is inoperative.*

• NOTE •

No real time weather data available.

•

► Fly the airplane ◀

- 1 - WXR breaker ..... Check pushed
- 2 - Continue flight by using other weather data source, and adjust flight route.
- 3 - Inform maintenance department.

*End of procedure.*

**TCAS FAIL**

*Indicates that Traffic Advisory System is inoperative.*

• NOTE •

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

•

▶ Fly the airplane ◀

1 - Inform maintenance department.

*End of procedure.*

**TRAFFIC FAIL**

*Indicates that Traffic Advisory System is inoperative.*

• NOTE •

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

•

► Fly the airplane ◀

1 - Inform maintenance department.

*End of procedure.*

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

**HOMESAFE REQUEST**

*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 push-button ..... Press twice  
AT and AP also disengage

• NOTE •

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

•

*End of procedure.*



>> With HomeSafe emergency function (Post-MOD70-0650-34A)

HomeSafe deactivation

▲ **WARNING** ▲

**HomeSafe deactivation must be performed by a pilot :**

- fully capable of flying the airplane,
- fully aware of all the actions the pilot will have to perform to reconfigure the airplane (the initial flight plan in the FMS is lost, the landing gear and flaps positions may not agree with LANDING GEAR and FLAPS levers positions).



▲ **CAUTION** ▲

HomeSafe deactivation is not recommended on final approach.



- 1 - AP/TRIM DISC push-button ..... Press twice  
AT and AP also disengage

▲ **CAUTION** ▲

MFD reconfiguration can take up to 1 minute. During this time, engine instruments and CAS messages can be displayed on PFD by using DISPLAY BACKUP.



- 2 - L.H. DISPLAY BACKUP push-button ..... Press
- 3 - LVL push-button ..... Press
- 4 - Before using VHF, 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

If **AC CONF MISMATCH** is ON :

- 7 - Perform procedure ..... **AC CONF MISMATCH**  
Refer to chapter 3.7

*End of procedure.*

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

**HS CONFIG MODE**

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

1 - Do not start the engine.

Inform maintenance department.

*End of procedure.*

## Section 4

### Normal procedures

#### Table of contents

4.1	-	General .....	4.1.1
4.2	-	Airspeeds for normal operation .....	4.2.1
4.3	-	Check-list procedures .....	4.3.1
		Inside inspection .....	4.3.1
		Before starting engine .....	4.3.3
		Motoring (if residual ITT > 150°C) .....	4.3.4
		Engine start .....	4.3.5
		After engine start with GPU .....	4.3.6
		After engine start .....	4.3.6
		Before taxiing .....	4.3.7
		Before line up .....	4.3.8
		Takeoff with high OAT (> ISA + 30°C) .....	4.3.9
		Normal takeoff .....	4.3.10
		Short takeoff .....	4.3.11
		After takeoff .....	4.3.12
		Climb .....	4.3.13
		Cruise .....	4.3.14
		Before descent .....	4.3.15
		Approach .....	4.3.16
		Final approach (in GS) or downwind leg (VMC) .....	4.3.17
		Short final (≈ 500 ft) .....	4.3.18
		Runway clear .....	4.3.19
		Shutdown .....	4.3.20
4.4	-	Amplified procedures .....	4.4.1
		Preflight inspection .....	4.4.1
		Inside inspection .....	4.4.17
		Before starting engine .....	4.4.21
		Engine start .....	4.4.24
		Motoring .....	4.4.27
		Motoring followed by an engine start .....	4.4.30
		After engine start with GPU .....	4.4.33
		After engine start .....	4.4.34

	In-flight available oxygen quantity .....	4.4.36
	Before taxiing .....	4.4.37
	Taxiing .....	4.4.41
	Before line up .....	4.4.42
	Takeoff with high OAT (> ISA + 30°C) .....	4.4.46
	Normal takeoff .....	4.4.47
	Short takeoff .....	4.4.50
	After takeoff .....	4.4.53
	Climb .....	4.4.54
	Cruise .....	4.4.56
	Before descent .....	4.4.58
	Approach .....	4.4.59
	Final approach (in GS) or downwind leg (VMC) .....	4.4.60
	Short final (≈ 500 ft) .....	4.4.61
	Landing .....	4.4.62
	Go-around with AP OFF .....	4.4.63
	Go-around with AP ON .....	4.4.65
	Touch and go .....	4.4.66
	Runway clear .....	4.4.68
	Shutdown .....	4.4.69
	Outside check after shutdown .....	4.4.72
4.5	- Particular procedures .....	4.5.1
	Flight into known icing conditions .....	4.5.1
	Flight into severe icing conditions .....	4.5.5
	Flight under heavy precipitations .....	4.5.6
	Utilization on runways covered with water .....	4.5.6
	Utilization on runways covered with melting or not tamped snow .....	4.5.7
	Utilization on icy or covered with tamped snow runways .....	4.5.10
	Utilization by cold weather (0°C to - 25°C) and very cold weather (- 25°C to - 40°C) .....	4.5.12
	Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 1 .....	4.5.13
	Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 .....	4.5.16
	Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 3 .....	4.5.21
	Landing procedure with strong headwind or crosswind .....	4.5.23
	Utilization on grass runway .....	4.5.25
	GPS navigation .....	4.5.27

## 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.

PIM - Not authorized for operation

Intentionally left blank

PIM - Not authorized for operation

## 4.2 - Airspeeds for normal operation

Conditions :

- Takeoff weight : 7394 lbs (3354 kg)
- Landing weight : 7024 lbs (3186 kg)

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

Intentionally left blank

PIM - Not authorized for operation



**4.3 - Check-list procedures**

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

Inside inspection	1/2
1 - Cabin door and pilot door, if installed .....	Closed / Locked
2 - Baggage .....	Stowed
3 - EMERGENCY EXIT pin .....	Removed
4 - Seat, 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 - STARTER .....	OFF
12 - IGNITION .....	AUTO
13 - AUX BP .....	OFF
14 - FUEL SEL .....	MAN
15 - AP / TRIMS .....	OFF
16 - A/C .....	OFF
17 - SEATS HTRS MASTER .....	OFF
18 - CB LIGHTS .....	OFF
19 - MICRO / MASK .....	MICRO / Guarded
20 - PARK BRAKE .....	Reset / ON
21 - LANDING GEAR .....	DN
22 - DUMP .....	NORM / Guarded

*Continue* ►

Inside inspection	2/2
-------------------	-----

► *Continuing*

- 23 - BLEED ..... OFF
- 24 - HOT AIR FLOW ..... Fully turned to the right
- 25 - MAN OVRD ..... Full backward (notched)
- 26 - THROTTLE ..... CUT OFF
- 27 - FUEL TANK SELECTOR ..... Open / L or R
- 28 - ALTERNATE STATIC SOURCE ..... Pushed
- 29 - EMERGENCY RAM AIR ..... Pushed
- 30 - ESS BUS TIE ..... NORM / Guarded
- 31 - Breakers ..... All pushed
- 32 - Landing gear emergency pump handle ..... Check

*End of procedure.*

PIM - Not authorized for operation

**Before starting engine**

- 1 - Crash lever ..... Up
- 2 - ATIS ..... Copied
- 3 - Start clearance ..... As required
- 4 - SOURCE ..... BATT or GPU
- 5 - GENERATOR ..... MAIN
- 6 - TEST ..... Press
- 7 - INERT SEP ..... Check OFF
- 8 - LANDING GEAR LIGHTS / CHECK DOWN ..... Test
- 9 - MFD ..... Initialize
- 10 - Fuel on board ..... Check
- 11 - Residual ITT ..... Check

*If residual ITT > 150°C :*

- 12 - Perform procedure ..... Motoring  
Refer to procedure hereafter
- 13 - VOLTS : BATT > 24.5 V / GPU ~ 28 V ..... Check
- 14 - CAS ..... Check

*End of procedure.*

Motoring (if residual ITT > 150°C)

- 1 - IGNITION ..... OFF
- 2 - AUX BP ..... ON
- 3 - **AUX BOOST PMP ON** ..... Check ON
- 4 - Propeller area ..... Clear
- 5 - STARTER ..... ON  
2 sec then OFF

After 30 seconds maximum :

- 6 - STARTER ..... ABORT  
Then OFF
- 7 - AUX BP ..... OFF

*End of procedure.*

PIM - Not authorized for operation

Engine start

▲ **CAUTION** ▲

After aborted engine starts, wait :  
1 min / 5 min / 30 min before 2<sup>nd</sup> / 3<sup>rd</sup> / 4<sup>th</sup> new engine start.



- 1 - IGNITION ..... AUTO
- 2 - AUX BP ..... ON
- 3 - **AUX BOOST PMP ON** ..... Check ON
- 4 - Propeller area ..... Clear
- 5 - STARTER ..... ON  
2 sec then OFF

When Ng around 13 % :

- 6 - THROTTLE ..... LO-IDLE
- 7 - ITT, Ng, OIL °C and OIL PSI ..... Monitor

ITT	Maximum 1000°C for 5 sec 870°C for 20 sec
Ng	30 % before 30 sec 50 % before 1 min

When

- Ng > 50 % and,
- 1 minute max :

- 8 - Starter ..... Check OFF automatically

*End of procedure.*

After engine start with GPU

- 1 - SOURCE ..... BATT
- 2 - GPU ..... Disconnect
- 3 - **GPU DOOR** ..... Check OFF

*End of procedure.*

After engine start

- 1 - THROTTLE ..... LO-IDLE ► Flight IDLE
- 2 - Ng ..... Check 70 % ± 2 %
- 3 - OIL °C and OIL PSI ..... Check
- 4 - AUX BP ..... AUTO
- 5 - FUEL SEL ..... AUTO
- 6 - SHIFT ..... Test
- 7 - AP / TRIMS ..... ON

*If BATT < 80 amps :*

- 8 - GENERATOR ..... ST-BY / Test
- 9 - GENERATOR ..... MAIN
- 10 - CAS ..... Check
- 11 - A/C ..... As required
- 12 - SEATS HTRS MASTER ..... As required
- 13 - BLEED ..... AUTO or MAX DIFF

*End of procedure.*

**Before taxiing**

- 1 - Stand-by instruments ..... Check
- 2 - DE ICE SYSTEM ..... Test
- 3 - INERT SEP ..... ON
- 4 - Flight controls ..... Check
- 5 - TRIMS ..... Test
- 6 - FLAPS ..... UP
- 7 - MFD
  - FPL ..... Set
  - LFE ..... Set / Check
  - WX RADAR ..... STBY
- 8 - THROTTLE ..... Feather twice
- 9 - EIS ..... Check
- 10 - CAS ..... Check
- 11 - TAXI lights ..... ON

*End of procedure.*

Before line up

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

*End of procedure.*



**Takeoff with high OAT (> ISA + 30°C)**

- 1 - BLEED ..... OFF
- 2 - INERT SEP ..... OFF
- 3 - AT disengaged ..... Check
- 4 - Perform procedure ..... Normal takeoff  
or Short takeoff  
Maintaining AT disengaged until 1000 ft AGL

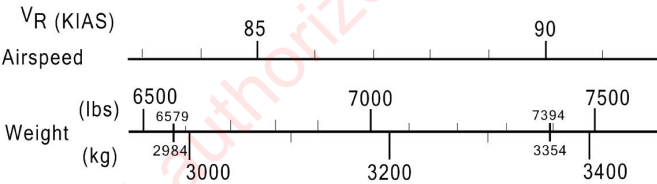
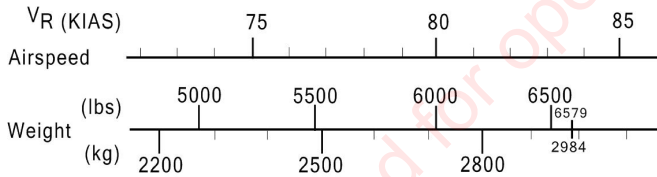
*After takeoff :*

- 5 - TRQ ..... Reduce by 10 %
- 6 - BLEED ..... AUTO
- 7 - INERT SEP ..... As required

*End of procedure.*

**Normal takeoff**

- 1 - ADI, HSI, headings ..... Check
- 2 - AT ..... As required
- 3 - PROP RPM ..... Green sector
- 4 - Brakes ..... Release
- 5 - TRQ ..... 100 %
- 6 - Rotation airspeed



14010000AAA1MA8000

- 7 - Attitude ..... 10° Up

*When vertical speed is positive :*

- 8 - Brakes ..... Apply
- 9 - LANDING GEAR ..... UP

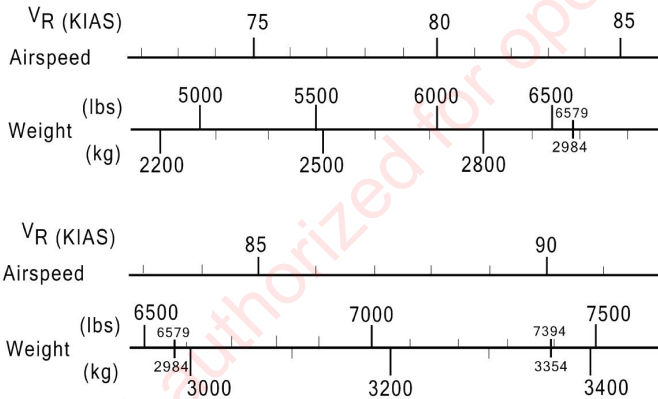
*When airspeed above 115 KIAS :*

- 10 - FLAPS ..... UP

*End of procedure.*

Short takeoff

- 1 - ADI, HSI, headings ..... Check
- 2 - AT ..... As required
- 3 - PROP RPM ..... Green sector
- 4 - TRQ ..... 100 %
- 5 - Brakes ..... Release
- 6 - Rotation airspeed



*Weight < 6579 lbs (2984 kg) :*

- 7 - Attitude ..... 15° Up

*Weight > 6579 lbs (2984 kg) :*

- 8 - Attitude ..... 12.5° Up

*When vertical speed is positive :*

- 9 - Brakes ..... Apply
- 10 - LANDING GEAR ..... UP

*When airspeed above 115 KIAS :*

- 11 - FLAPS ..... UP

*End of procedure.*

After takeoff

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

*End of procedure.*

PIM - Not authorized for operation

**Climb**

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

*End of procedure.*

PIM - Not authorized for operation

**Before descent**

- 1 - Briefing before approach ..... Completed
- 2 - Altimeters setting ..... Check
- 3 - Pressurization ..... Check
- 4 - LFE ..... Check
- 5 - FUEL gages ..... Check
- 6 - AMPS / VOLTS ..... Check
- 7 - DE ICE SYSTEM ..... As required
- 8 - INERT SEP ..... As required

*End of procedure.*

**Approach**

- 1 - Altimeters setting (QNH) ..... Set / Check
- 2 - Minimums ..... Set / Check
- 3 - COM / NAV / GPS ..... Set / Check
- 4 - Pressurization ..... Check
- 5 - LFE ..... Check
- 6 - FUEL gages ..... Check
- 7 - AMPS / VOLTS ..... Check
- 8 - DE ICE SYSTEM ..... As required
- 9 - INERT SEP ..... ON

*Below FL 100 :*

- 10 - LDG lights ..... ON

*End of procedure.*

PIM - Not authorized for operation



Final approach (in GS) or downwind leg (VMC)

- 1 - LDG lights ..... ON
- 2 - LANDING GEAR ..... DN  
Check 3 green
- 3 - FLAPS ..... TO

*End of procedure.*

PIM - Not authorized for operation

Short final (≈ 500 ft)

- 1 - LANDING GEAR ..... Check  
DN and 3 green
  - 2 - FLAPS ..... LDG
  - 3 - AP / YD / AT ..... Disconnect
- End of procedure.*

PIM - Not authorized for operation

**Runway clear**

- 1 - TAXI light ..... ON
- 2 - NAV ..... As required
- 3 - STROBE ..... As required
- 4 - DE ICE SYSTEM ..... As required
- 5 - TRIMS ..... Reset to TO
- 6 - FLAPS ..... UP
- 7 - A/C ..... As required
- 8 - XPDR ..... Check
- 9 - WX RADAR ..... Check

*End of procedure.*

**Shutdown**

- 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
- 7 - A/C ..... OFF
- 8 - SEATS HTRS MASTER ..... OFF
- 9 - BLEED ..... OFF
- 10 - THROTTLE ..... Flight IDLE  
For 2 min
- 11 - THROTTLE ..... LO-IDLE  
For 15 sec
- 12 - THROTTLE ..... CUT OFF
- 13 - INERT SEP ..... OFF
- 14 - **AUX BOOST PMP ON** ..... Check ON
- 15 - AUX BP ..... OFF
- 16 - GENERATOR ..... OFF

*When inertial separator is retracted, after approximately 40 sec :*

- 17 - SOURCE ..... OFF
- 18 - Crash lever ..... Pull down
- 19 - Stand-by instruments ..... OFF
- 20 - Oxygen cylinder (R.H. Karman) ..... Close

● NOTE ●

Within 10 minutes following the engine shutdown, check engine oil level.  
Refer to chapter 8.7 Oil level check.



*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 L.H. Wing
- IV Fuselage forward section
- V R.H. 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).**



*Continue ►*

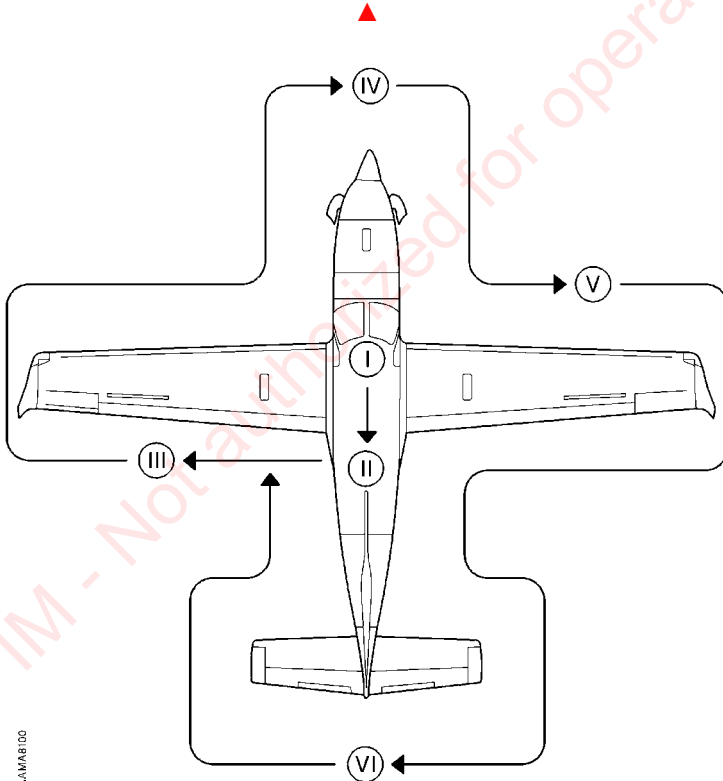
Preflight inspection

2/16

► *Continuing*

**▲ WARNING ▲**  
**Remove tie-downs.**

**Refer to section 8 for quantities, products and specifications of products and materials currently used.**



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Figure 4.4.1 - Preflight inspection

*Continue* ►

Preflight inspection	3/16
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► *Continuing*

Initial inside inspection

Cockpit (I)

- 1 - A/C switch ..... OFF
- 2 - SEATS HTRS MASTER switch ..... OFF
- 3 - MICRO/MASK switch ..... MICRO / Guarded
- 4 - 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.



- 5 - Flight controls deflections ..... Check
- 6 - PARK BRAKE ..... ON
- 7 - LANDING GEAR lever ..... DN
- 8 - DUMP switch ..... NORM / Guarded
- 9 - BLEED switch ..... OFF

Engine controls

- 10 - MAN OVRD control ..... Backward

▲ CAUTION ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area as a lack of hydraulic pressure prevents movement into reverse range. Trying to force the mechanism will cause damage.



- 11 - THROTTLE ..... CUT OFF

*Continue* ►

Preflight inspection 4/16

► *Continuing*

12 - FLAPS lever ..... UP

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

Open door of emergency landing compartment to check LANDING GEAR emergency control.

14 - Lever ..... Pushed down

15 - By-pass selector ..... Fully depressed

16 - Door ..... In place

• NOTE •

By-pass selector must be pushed at its maximum stop, so as to have the door in place.

•

17 - ALTERNATE STATIC SOURCE selector ..... Pushed

18 - EMERGENCY RAM AIR control knob ..... Pushed

19 - Breakers panel ..... All breakers checked

20 - ELT switch ..... ARM / OFF

21 - AP / TRIMS switch ..... OFF

FUEL panel

22 - FUEL SEL switch ..... MAN

23 - AUX BP switch ..... OFF

ENGINE START panel

24 - IGNITION switch ..... AUTO or OFF

• NOTE •

The IGNITION switch is normally selected to AUTO. This ensures ignition, whenever the STARTER switch is set to ON.

•

*Continue* ►



Preflight inspection	5/16
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► *Continuing*

25 - STARTER switch ..... OFF

● NOTE ●

If not, starter is going to operate as soon as SOURCE selector is moved to BATT or GPU (if connected).



ELECTRIC POWER panel

26 - Crash lever ..... Up

27 - GENERATOR selector ..... MAIN

28 - SOURCE selector ..... OFF

29 - ACCESS lighting ..... Check  
To ensure that the fuse of the BATT BUS operates correctly

30 - INT LIGHTS panel ..... All OFF

31 - EXT LIGHTS panel ..... All OFF

32 - OXYGEN switch ..... OFF

33 - PASSENGER OXYGEN switch ..... STBY

34 - Emergency lighting ..... Check

▲ CAUTION ▲

Before selecting source, check position of ignition and starter switches.



35 - IGNITION switch ..... AUTO or OFF

36 - STARTER switch ..... OFF

37 - LANDING GEAR lever ..... DN

38 - SOURCE selector ..... BATT or GPU

39 - 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.

*Continue* ►

Preflight inspection 6/16

► *Continuing*

If BATT source :

40 - 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 3 hours at a temperature below - 10°C (+ 14°F).

•

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.

▲

41 - Voltage ..... Check ≈ 28 volts

• NOTE •

If using a GPU, ensure that it provides a 28-volt regulated voltage, with negative on earth, as well as it supplies 800 amps minimum and 1000 amps maximum. See placard located near ground power receptacle door.

•

EXT LIGHTS panel

42 - OFF/TAXI/LDG switch ..... OFF

43 - STROBE switch ..... ON

44 - NAV switch ..... ON

*Continue* ►

Preflight inspection	7/16
----------------------	------

► *Continuing*

DE ICE SYSTEM panel

▲ **CAUTION** ▲

When engine is shut down, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.



- 45 - DE ICE SYSTEM mode switch ..... MAN  
All deicing systems turn on
- 46 - All switches ..... OFF
- 47 - ICE LIGHT switch ..... ON
- 48 - From outside the airplane, check operation of all lights and stall warning alert.  
Reentering the airplane
- 49 - EXT LIGHTS panel ..... All OFF
- 50 - CAS display ..... Check
- 51 - Left and right FUEL quantities ..... Check
- 52 - FLAPS lever ..... LDG
- LANDING GEAR panel
- 53 - Warning lights ..... Check 3 green ON
- 54 - LIGHT TEST push-button ..... 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.**



- 55 - PITOT L/R & STALL HTR switch ..... ON
- 56 - **PITOT HT ON L-R** ..... Check ON

*Continue* ►

Preflight inspection 8/16

► *Continuing*

57 - **STALL HEAT ON** ..... Check ON

• 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.

•

58 - PITOT L/R & STALL HTR switch ..... OFF

59 - Crash lever ..... Pull down

Cabin (II)

60 - Cabin fire extinguisher ..... Pressure / Attachment

61 - Seats / belts ..... Check

62 - Windows ..... General condition / No crack

63 - Emergency exit ..... Closed / Locked

64 - Anti-theft safety pin ..... Removed / Stowed

65 - Baggage compartment ..... Straps in place

>> *6-seat accommodation*

66 - Partition net ..... General condition / In place

>> *4-seat accommodation and baggage transportation*

67 - Large net or small net ..... General condition / In place

>> *All*

68 - Doors operation ..... Check

69 - Stairs condition ..... Condition / Play

*Continue* ►

## Preflight inspection

9/16

► *Continuing*

## Outside inspection

The preflight inspection described in figure 4.4.1 is recommended before each flight.

## ● 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.

L.H. wing (III)

70 - 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.

71 - 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.

●

72 - Trailing edge static discharger ..... Condition / Number / Attachment

73 - Winglet / nav. lights / strobe / landing light /  
recognition light / taxi light ..... Condition*Continue* ►

Preflight inspection	10/16
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► *Continuing*

- 74 - OAT probe ..... Condition
- 75 - Fuel tank cap ..... Closed / Locked

● 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.

●

- 76 - 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.

●

- 77 - Left pitot ..... Condition

- 78 - Wing lower surface ..... No leak

79 - Check fuel tank access doors for leaks.

80 - Check for surface damage.

- 81 - 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.

●

*Continue* ►

## Preflight inspection

11/16

► *Continuing*

- 82 - Fuel tank drain (two on each wing) ..... Drain  
Fuel free of water and contamination

## ● NOTE ●

In case of water in fuel system, drain it carefully using the four drain valves of tank sumps, and the fuel filter drain valve, till every trace of water or deposit has disappeared.

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. Refer to section 8 for servicing operations relative to fuel additives.

●

## L.H. main LANDING GEAR

- 83 - Shock absorber ..... Check  
84 - Doors ..... Check  
85 - Tire ..... Check  
86 - 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.

●

*Continue* ►

Preflight inspection 12/16

► *Continuing*

Fuselage forward section (IV)

Forward compartment

- 87 - Inside ..... Check
- 88 - Door ..... Close / Lock
- 89 - GPU door ..... Closed  
If not used
- 90 - 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.**



- 91 - Filter contamination indicator (clogging indicator) ..... Check
- 92 - L.H. 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.



- 93 - Upper engine cowls ..... Open

For the first flight of the day :

- 94 - Oil cap ..... Closed / Locked
- 95 - Engine oil level ..... Check
- 96 - Fuel pipes ..... No leak, deterioration, wear
- 97 - Engine cowls ..... Condition  
Closed / Locked

*Continue* ►



## Preflight inspection

13/16

► *Continuing*

## Air inlets

98 - Main ..... No cracks - Unobstructed

## ● NOTE ●

Check for no cracks, which are sometimes put in evidence by traces of soot resulting from exhaust gases.

●

99 - 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 R.H. windshield) and of vapor cycle cooling system (two rectangular grilles located forward of the circular grille).

●

100 - 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

101 - Shock absorber ..... Check

102 - Doors ..... Check

103 - Tire ..... Check

104 - Wheel well ..... Check

## ● NOTE ●

Without passengers and baggages on board, the unpainted surface of the nose gear shock absorber tube must be visible about :

57 mm (2.22 in) of minimum height with full tanks,  
63 mm (2.46 in) of minimum height with half tank.

●

*Continue* ►

Preflight inspection 14/16

► *Continuing*

• 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.

105 - R.H. exhaust stub ..... Condition / No cracks

R.H. wing (V)

Additional remarks are identical to those of L.H. wing.

106 - Fuel tank drain (two on each wing) ..... Drain  
Fuel free of water and contamination

R.H. main LANDING GEAR

107 - Shock absorber ..... Check

108 - Doors ..... Check

109 - Tire ..... Check

110 - Wheel well ..... Check

111 - Wing deicer boots ..... Condition / Attachment

112 - Stall warning ..... Condition / Deflection

113 - Wing lower surface ..... No leaks

114 - Fuel tank cap ..... Closed / Locked

115 - Fuel tank air vent ..... Unobstructed

116 - Right pitot ..... Condition

117 - Winglet / nav. light / strobe / landing light /  
recognition light / taxi light ..... Condition

118 - Trailing edge static discharger ..... Condition / Number / Attachment

119 - Aileron / spoiler ..... Condition / Free movement / Deflection

120 - Flap ..... Condition / Play

*Continue* ►

Preflight inspection	15/16
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► *Continuing*

Rear R.H. karman

- 121 - Oxygen cylinder ..... Open
- 122 - Oxygen pressure ..... Check
- 123 - Confirm OXYGEN quantity in regards with the expected flight.
- 124 - Oxygen pressure ..... Check

Fuselage rear section / empennages (VI)

Check that outside handle of emergency exit is flush with door skin.

- 125 - ELT ..... ARM / OFF
- 126 - ELT door ..... Closed / Locked

● NOTE ●

Access to ELT is possible through an inspection door located on R.H. side of fuselage rear section.



- 127 - Static pressure ports ..... Clean
- 128 - Ventral fins ..... Condition / Attachments

● 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.



- 129 - Inspection door under fuselage ..... Attachments - Closed
- 130 - Horizontal stabilizer deicer boots (R.H. side) ..... Condition / Attachments
- 131 - 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.



*Continue* ►

Preflight inspection	16/16
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► *Continuing*

- 132 - Static dischargers ..... Condition
- 133 - Vertical stabilizer deicer boots ..... Condition / Attachments
- 134 - Rudder and trim ..... Condition / Trim position
- 135 - Static dischargers ..... Condition
- 136 - Tail cone / nav. lights / strobe ..... Condition
- 137 - Static pressure ports ..... Clean

*End of procedure.*

PIM - Not authorized for operation

**Inside inspection**

1/4

After completion of preflight inspection. Initial inside inspection and outside inspection performed.

- 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 mandatory to adjust seats in fore-aft movement when seat is in maximum high permissible position, to avoid interference between side upholstery panel and seat housing in low and intermediate positions.



Pilot seat and R.H. front seat, if occupied ..... Adjust

**● NOTE ●**

Adjust seats and harnesses, so as to permit access to flight controls. The pilot at L.H. station must be able to easily reach A/C and PRESSURIZATION panel.



- 5 - Height adjustment ..... Max. UP
- 6 - Fore and aft adjustment ..... Adjust and check locking
- 7 - Height adjustment ..... Adjust
- 8 - L.H and R.H. pedals ..... Adjust
- 9 - Pilot and passengers belts and harnesses ..... Fasten

**● NOTE ●**

Check for pilot and passengers correct locking of belt buckles, as well as automatic locking of shoulder harness by exerting a rapid pull on the latter. If airbags installed, unoccupied seat belts have to be strapped. It is forbidden to fly with these belts unstrapped.

*Continue ►*

**Inside inspection** 2/4

► *Continuing*

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

● 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.

●

>> *All*

- 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 push-button 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 - DIMMER switch ..... OFF
- 16 - CABIN switch ..... OFF
- 17 - ACCESS switch ..... OFF
- 18 - PANEL rheostat ..... Fully turned to the left
- 19 - All lights ..... OFF
- 20 - Crash lever ..... Down

*Continue* ►

Inside inspection	3/4
-------------------	-----

► *Continuing*

21 - STARTER switch ..... OFF

● NOTE ●

If not, starter is going to operate as soon as SOURCE selector is positioned on BATT or GPU.

●

22 - IGNITION switch ..... AUTO

● NOTE ●

The IGNITION switch is normally selected to AUTO. This ensures ignition, whenever the starter is activated.

●

23 - AUX BP switch ..... OFF

24 - FUEL SEL switch ..... MAN

25 - AP / TRIMS switch ..... OFF

26 - A/C switch ..... OFF

27 - SEATS HTRS MASTER switch ..... OFF

28 - CB LIGHTS switch ..... OFF

29 - MICRO / MASK switch ..... MICRO / Guarded

30 - PARK BRAKE ..... Reset / ON

31 - LANDING GEAR lever ..... DN

32 - DUMP switch ..... NORM / Guarded

33 - BLEED switch ..... OFF

34 - HOT AIRFLOW distributor ..... Fully turned to the right

35 - Pitch trim wheel ..... Check

*Continue* ►

Inside inspection 4/4

► *Continuing*

▲ **CAUTION** ▲

Make sure that MAN OVRD control is backward to avoid  
overtemperature risks at start.



36 - MAN OVRD control ..... Full backward (notched)

▲ **CAUTION** ▲

When the engine is shut down, the THROTTLE must not be moved into  
the reverse area.



37 - THROTTLE ..... CUT OFF

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

39 - ALTERNATE STATIC SOURCE selector ..... Normal / Pushed

40 - EMERGENCY RAM AIR ..... Closed / Pushed

41 - ESS BUS TIE switch ..... NORM / Guarded

42 - Breakers ..... All pushed

43 - EMERGENCY LANDING GEAR lever ..... Check

*End of procedure.*



Before starting engine	1/3
------------------------	-----

Check that the weight and balance are within the correct limits. 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 (L or R 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 Volts which corresponds to the voltage in case of battery use.

●

*If battery use :*

- 11 - Battery voltage ..... Check > 24.5 V

*If battery voltage < 24.5 V :*

- 12 - Ask for a GPU and be ready to a GPU start.

- 13 - GENERATOR selector ..... MAIN
- 14 - **MAIN GEN** ..... Check ON

*Continue ►*

Before starting engine 2/3

► *Continuing*

15 - **O2 CYL CLOSED** ..... Check OFF

If **O2 CYL CLOSED** is ON :

16 - Open isolation valve of the oxygen cylinder in R.H. Karman.

17 - TEST push-button ..... Press  
Audio / DE ICE SYSTEM lights / stick shaker

18 - INERT SEP switch ..... Check OFF

19 - DUMP switch ..... NORM / Guarded

20 - LANDING GEAR light / CHECK DOWN ..... Test

21 - MFD ..... Initialize

22 - Fuel onboard ..... Check

- Quantity ..... Check

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

23 - Residual ITT ..... Check

If residual ITT > 150°C :

24 - Perform procedure ..... Motoring  
Refer to this chapter

● NOTE ●

A start up procedure with an engine residual ITT above 150°C may generate an ITT exceedance.

Particular monitoring of ITT will have to be performed during start up to ensure to keep the temperature within ITT envelope.

●

25 - VOLTS : BAT > 24.5 V / GPU ≈ 28 V ..... Check

26 - CAS display ..... Check

27 - PARK BRAKE ..... Check ON  
Last check before proceeding to engine start

*Continue* ►

## Before starting engine

3/3

► *Continuing*28 - **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.*

<b>Engine start</b>	<b>1/3</b>
---------------------	------------

- 1 - STROBE switch ..... ON
- 2 - G3000 ..... DISPLAY BACKUP  
Composite mode

• NOTE •

If there is a loss of MFD during start up sequence, that sequence will be ended using the left PFD in composite mode.



- 3 - IGNITION switch ..... AUTO
- 4 - AUX BP switch ..... ON
- 5 - **AUX BOOST PMP ON** ..... Check ON
- 6 - **FUEL PRESS** ..... Check OFF
- 7 - Propeller area ..... Clear

▲ CAUTION ▲

If 5 seconds after having positioned the STARTER switch in ON position there is no start, interrupt starting attempt using the ABORT position of the STARTER switch.



▲ CAUTION ▲

Starter operation is bound by limitations in chapter 2.4 Starter operating limits.



- 8 - STARTER switch ..... ON  
2 sec then OFF

*Simultaneously :*

- 9 - Timer clock ..... Start  
To check startup acceleration
- 10 - **STARTER** ..... Check ON
- 11 - **MAIN GEN** ..... Check ON

*Continue ►*

## Engine start

2/3

▶ *Continuing*▲ **CAUTION** ▲

When THROTTLE is positioned on LO-IDLE before having obtained 13 % of Ng, there is a risk of overtemperature further to an excessive accumulation of fuel inside the combustion chamber before ignition.

● **NOTE** ●

In case of starting with high residual ITT, an ITT decrease below 150°C (within starter operation limits) may allow to stay within the allowed ITT envelope during startup sequence.

● **NOTE** ●

■ Autothrottle engine protection system is disabled during engine start, thus there is no protection against ITT exceedances.

*When*

- Ng about 13 % and,
- ITT below 150°C and,
- time below 20 seconds :

12 - THROTTLE ..... LO-IDLE

*Continue* ▶

Engine start 3/3

► *Continuing*

*Abort starting procedure if :*

- *No ignition 10 seconds after having positioned THROTTLE to LO-IDLE,*
- **ITT** *lights on (max ITT < 870°C for more than 20 seconds, < 1000°C for more than 5 seconds),*
- *Ng < 30 % after 30 seconds of starter use,*
- *Ng < 50 % after 60 seconds of starter use,*

13 - THROTTLE ..... CUT OFF

14 - IGNITION switch ..... OFF or AUTO

*When ITT < 850°C :*

15 - STARTER switch ..... ABORT

*End of procedure ■*

*When*

- *Ng > 50 % and,*
- *1 minute max :*

▲ **CAUTION** ▲

If the starter does not go off automatically, disengage it using the ABORT position of the STARTER switch.



- 16 - Starter ..... Check OFF automatically
- 17 - **STARTER** ..... Check OFF
- 18 - Engine parameters ..... Check  
Check 54 % ≤ Ng ≤ 58 %, oil pressure and ITT in green sector

*End of procedure.*

**Motoring**

1/3

To drain fuel accumulated inside the combustion chamber, a motoring procedure is required following an aborted start.

A 15-second dry motoring run is sufficient to clear any fuel pooled in the engine. The fuel is removed in liquid or vapor form, through an airflow intended to dry combustion chamber, turbines and exhaust nozzles.

To improve cooling of the bearing cavities and prevent oil coking after shutdown in high OAT [above 35°C (95°F)] environment, it is recommended to perform a 30-second dry motoring run.

It is possible that no trace of drainage be observed under engine, due to the drainage collector intended to prevent parking area from contamination.

▲ **CAUTION** ▲

After any starting interrupt procedure, wait for engine total shutdown and wait at least 30 seconds before initiating a motoring.



Engine controls

1 - MAN OVRD control ..... Full backward (notched)

▲ **CAUTION** ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



2 - THROTTLE ..... CUT OFF

3 - IGNITION switch ..... OFF

4 - **IGNITION** ..... Check OFF

Fuel

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

6 - AUX BP switch ..... ON

7 - **AUX BOOST PMP ON** ..... Check ON

*Continue* ►

**Motoring** 2/3

► *Continuing*

8 - **FUEL PRESS** ..... Check OFF  
Fuel pressure is necessary for lubrication of HP pump.

9 - Propeller area ..... Clear

*To clear fuel and vapor internally trapped :*

10 - STARTER switch ..... ON  
2 sec then OFF

*Simultaneously :*

11 - Timer clock ..... Start

12 - **STARTER** ..... Check ON

13 - Motor ..... For 15 sec. max

14 - STARTER switch ..... ABORT  
Then OFF

15 - **STARTER** ..... Check OFF

*To cool engine following shutdown in high temperature environment :*

16 - STARTER switch ..... ON  
2 sec then OFF

*Simultaneously :*

17 - Timer clock ..... Start

18 - **STARTER** ..... Check ON

19 - Motor ..... For 30 sec. max

*If ignition symptoms occur (ITT increasing) :*

20 - IGNITION switch ..... Check OFF

21 - THROTTLE ..... Check CUT OFF

22 - Continue motoring.

*Continue* ►



## Motoring

3/3

► *Continuing*

23 - STARTER switch ..... ABORT  
Then OFF

24 - **STARTER** ..... Check OFF

## FUEL panel

25 - AUX BP switch ..... OFF

26 - **AUX BOOST PMP ON** ..... Check OFF

27 - **FUEL PRESS** ..... Check ON

*End of procedure.*

**Motoring followed by an engine start** 1/3

Amplified procedures stated in starting engine sequences using airplane power or with GPU are also to be applied to hereunder procedure.

Within starter operating limits (continuous max. 1 minute), it is possible to initiate a starting procedure from a motoring procedure.

This procedure will conserve the battery by taking advantage of first Ng acceleration.

Engine controls

- 1 - MAN OVRD control ..... Full backward (notched)

▲ **CAUTION** ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



- 2 - THROTTLE ..... CUT OFF
- 3 - IGNITION switch ..... OFF
- 4 - **IGNITION** ..... Check OFF

Fuel

- 5 - FUEL TANK SELECTOR ..... L or R
- 6 - AUX BP switch ..... ON
- 7 - **AUX BOOST PMP ON** ..... Check ON
- 8 - **FUEL PRESS** ..... Check OFF  
Fuel pressure is necessary for lubrication of HP pump.
- 9 - Propeller area ..... Clear
- 10 - STARTER switch ..... ON  
2 sec then OFF

Simultaneously :

- 11 - Timer clock ..... Start
- 12 - **STARTER** ..... Check ON

*Continue* ►

## Motoring followed by an engine start

2/3

► *Continuing*

13 - Motor ..... For 30 sec. max

*After 20 seconds and if ITT < 150°C :*

14 - IGNITION switch ..... AUTO

15 - Ng ..... Check &gt; 13 %

16 - THROTTLE ..... LO-IDLE

Monitor increase of :

17 - ITT ..... max. : < 870°C for 20 sec max.  
< 1000°C for 5 sec max.

## ● NOTE ●

No action is required for the following conditions :

- ITT from 850°C to 870°C limited to 20 seconds,
- ITT from 870°C to 1000°C limited to 5 seconds

●

18 - Ng

19 - Oil pressure

20 - **OIL PRESS** ..... Check OFF*When Ng > 50 % :*

## ▲ CAUTION ▲

If the starter does not go off automatically, disengage it using the  
ABORT position of the STARTER switch.

▲

21 - Starter ..... Check OFF automatically

22 - **STARTER** ..... Check OFF23 - Engine parameters ..... Check  
Check 54 % ≤ Ng ≤ 58 %, oil pressure and ITT in green sector*Continue ►*

Motoring followed by an engine start 3/3

► *Continuing*

Fuel panel

- 24 - AUX BP switch ..... AUTO
- 25 - **AUX BOOST PMP ON** ..... Check OFF

Electric power

- 26 - **MAIN GEN** ..... Check OFF  
Reset if necessary

• NOTE •

**MAIN GEN** normally goes off as soon as **STARTER** goes off.

•

If **MAIN GEN** does not go off :

- 27 - Ng ..... Increase over 70 %  
To start main generator
- 28 - Generator and battery AMPS ..... Check charge  
On EIS of MFD
- 29 - Battery and ESS. bus VOLTS ..... Check voltage ≈ 28 Volts  
On EIS of MFD

*End of procedure.*

After engine start with GPU

- 1 - SOURCE selector ..... BATT
- 2 - Electrical network ..... Check
- 3 - GPU ..... Disconnect  
Performed by ground personnel
- 4 - **GPU DOOR** ..... Check OFF
- 5 - GENERATOR selector ..... MAIN
- 6 - **MAIN GEN** ..... Check OFF

• NOTE •

**MAIN GEN** normally goes off as soon as **STARTER** goes off.

If **MAIN GEN** does not go off :

- 7 - Ng ..... Increase over 70 %  
To start main generator
- 8 - Generator and battery AMPS ..... Check charge  
On EIS of MFD
- 9 - Battery and ESS. bus VOLTS ..... Check voltage ≈ 28 Volts  
On EIS of MFD
- 10 - CAS display ..... Check
- 11 - A/C switch ..... As required
- 12 - BLEED switch ..... AUTO  
The MAX DIFF mode is available through the GTC

When ground personnel is cleared from propeller area :

- 13 - Perform procedure ..... After engine start  
Refer to procedure hereafter

*End of procedure.*

After engine start 1/2

▲ **CAUTION** ▲  
Generator load < 200 amps



- 1 - THROTTLE ..... LO-IDLE ► Flight IDLE
- 2 - Ng ..... Check 70 % ± 2 %
- 3 - OIL °C and OIL PSI ..... Check
- 4 - AUX BP switch ..... AUTO
- 5 - FUEL SEL switch ..... AUTO
- 6 - SHIFT push-button ..... Test  
Verify rotation of FUEL TANK SELECTOR
- 7 - AP / TRIMS switch ..... ON  
This initializes the AP and AT systems
- 8 - PFD 1, MFD and PFD 2 ..... NORMAL mode

*Perform generator test :*

- 9 - BLEED switch ..... OFF  
To unload the generator circuit
- 10 - GENERATOR selector ..... Check MAIN
- 11 - AMPS / VOLTS ..... Check

*When MAIN LOAD < 80 amps :*

- 12 - GENERATOR selector ..... ST-BY
- 13 - AMPS / VOLTS ..... Check

*If the voltage on the ST-BY generator is low (close to 27 volts) :*

- 14 - GENERATOR RESET ST-BY push-button ..... Press  
To reset ST-BY generator
- 15 - AMPS / VOLTS ..... Check  
The indicated voltage should be in the green range

- 16 - GENERATOR selector ..... MAIN

*Continue ►*

**After engine start** **2/2**

▶ *Continuing*

17 - Oxygen ..... Check  
Verify quantity available for the planned flight.  
See tables of paragraph In-flight available oxygen quantity  
in this chapter and chapter 7.10 for a FAR 135 type operation

PFD 1, MFD and PFD 2

• NOTE •

Detailed control procedures of avionics system are described in the GARMIN  
Integrated Flight Deck Pilot's Guide.

•

18 - Brightness ..... Adjust

19 - DISPLAY BACKUP push-button ..... Check  
Then return to NORMAL mode

20 - CAS ..... Check  
Check engine parameters

■ 21 - A/C switch ..... As required

• NOTE •

A good cabin temperature regulation will only be obtained if A/C switch is set to  
PILOT or PLT + PAX.

•

22 - TEMP selector ..... Adjust

23 - SEATS HTRS MASTER switch ..... As required

24 - BLEED switch ..... AUTO  
The MAX DIFF mode is available through the GTC

■ 25 - HOT AIR FLOW distributor ..... As required

• NOTE •

HOT AIR FLOW distributor is usually set fully turned to the right. However, if  
canopy misting is evident, set it fully turned to the left.

•

*End of procedure.*

**In-flight available oxygen quantity**

- 1 - Oxygen pressure ..... Read
- 2 - Outside air temperature (OAT) ..... Read
- 3 - Determine the usable oxygen percent using the chart figure 4.4.2

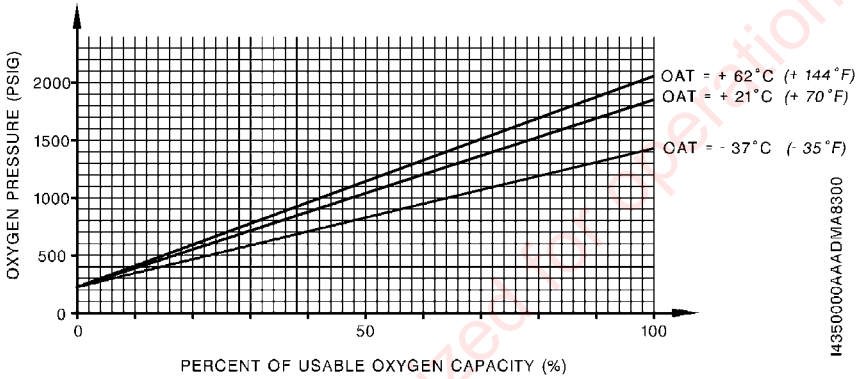


Figure 4.4.2 - Usable oxygen

- 4 - Determine the oxygen duration in minutes by multiplying the values read on table figure 4.4.3 by the percent obtained with the chart figure 4.4.2

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

Figure 4.4.3 - Oxygen duration

*End of procedure.*



<b>Before taxiing</b>	<b>1/4</b>
-----------------------	------------

- 1 - Stand-by instruments ..... Check
- Check de-ice system

● 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. Refer to chapter 4.5 Particular procedures of this section.

●

- 2 - DE ICE SYSTEM mode switch ..... MAN  
All deicing systems turn on
- 3 - INERT SEP switch ..... OFF
- 4 - PROP DE ICE system ..... Check ON  
Check illumination in green of the status light

● NOTE ●

Illumination in green of the 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.

●

- 5 - PROP DE ICE switch ..... OFF
- 6 - WINDSHIELD system ..... Check ON  
Check illumination in green of the status light
- 7 - WINDSHIELD switch ..... OFF

*Continue* ►

Before taxiing	2/4
----------------	-----

► *Continuing*

- 8 - Ng ..... Increase ≈ 80 %  
 To check AIRFRAME DE ICE

● NOTE ●

Theoretically, necessary air bleed to inflate wing and empennage leading edges, as well as depression necessary to their deflation are sufficient when THROTTLE is positioned on Flight IDLE. However, it is advised for check to choose a Ng power > 80 % in order to obtain operation design pressure, which enables illuminating surely in green the status light and avoiding

**VACUUM LOW** untimely alarms.

●

- 9 - AIRFRAME DE ICE system ..... Check ON  
 Check illumination in green of the status light

- 10 - Visually check functioning of deicer boots during 1 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.

●

- 11 - AIRFRAME DE ICE switch ..... OFF

- 12 - DE ICE SYSTEM mode switch ..... AUTO

- 13 - INERT SEP switch ..... ON  
 Keep ON while taxiing in order to avoid ingestion of particles by the engine

- 14 - Flight controls ..... Check  
 Proper operation from stop to stop, full deflection

Check autopilot and electrical pitch trim :

- 15 - AP / TRIMS ..... Check

● NOTE ●

Detailed control procedures of autopilot and electrical pitch trim are described in the GARMIN Integrated Flight Deck Pilot's Guide.

●

*Continue* ►

Before taxiing

3/4

► *Continuing*

- 16 - Pitch trim ..... UP / DN
  - 17 - Pitch trim ..... Adjust in green range  
Graduated from 12 to 37 %
  - 18 - Yaw trim ..... L / R
  - 19 - Yaw trim ..... Adjust in green range  
Takeoff range
  - 20 - Roll trim ..... L / R
  - 21 - Roll trim ..... Adjust at neutral position
  - 22 - FLAPS lever ..... UP
- Perform MFD flight management
- 23 - Weight computing ..... Set / Check
  - 24 - FOB (fuel on board) synchronization ..... Set
- If requested :*
- 25 - FPL ..... Set
- 26 - LFE selection ..... Done
- Landing Field Elevation selection is done on the touchscreen controller using either :
- automatically the destination airport of the flight plan,
- or
- a manual entry by pressing : HOME, AIRCRAFT SYSTEMS, LFE and then MANUAL.
- 27 - VHF/VOR/GPS ..... Adjust / Test
  - 28 - Radar ..... Adjust / Test
  - 29 - Stormscope/TAS/TAWS/Radio altimeter, if installed ..... Adjust / Test
  - 30 - ADI/HSI on PFD1 / PFD2 ..... Check
  - 31 - Altimeter setting ..... Set / Check

*Continue* ►

Before taxiing	4/4
----------------	-----

► *Continuing*

- 32 - THROTTLE ..... FEATHER twice  
Flight IDLE to LO-IDLE then Flight IDLE, twice
- 33 - EIS ..... Check
- 34 - CAS display ..... Check
- 35 - Passenger briefing ..... As required
- 36 - TAXI lights ..... ON
- 37 - PARK BRAKE ..... OFF  
Make sure that chocks are removed, if used
- 38 - **PARK BRAKE** ..... Check OFF

*End of procedure.*

PIM - Not authorized for operational use

**Taxiing****▲ CAUTION ▲**

Generator load &lt; 200 amps.

**▲ CAUTION ▲**

Avoid using reverse during taxiing.

**● NOTE ●**

Operation in the Beta ( $\beta$ ) range / reverse 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 ●**

After initial acceleration, THROTTLE may be in the TAXI range sector, avoiding excessive 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 stand-by indicator during ground turns.

*End of procedure.*

Before line up 1/4

▲ CAUTION ▲

Generator load < 200 amps.



- 1 - PARK BRAKE ..... ON
  - 2 - **PARK BRAKE** ..... Check ON
  - 3 - THROTTLE ..... Flight IDLE  
Ng = 69 % ± 2 %
  - 4 - LDG lights ..... ON
  - 5 - NAV switch ..... ON
  - 6 - STROBE switch ..... ON
  - 7 - IGNITION ..... As required  
AUTO or ON
  - 8 - AUX BP switch ..... AUTO
  - 9 - FUEL SEL switch ..... AUTO
- DE ICE SYSTEM panel
- 10 - INERT SEP switch ..... ON
  - 11 - AIRFRAME DE ICE switch ..... As required
  - 12 - PROP DE ICE switch ..... As required
  - 13 - WINDSHIELD switch ..... As required
  - 14 - PITOT L/R & STALL HTR switch ..... ON

*If icing conditions are foreseen :*

- 15 - Perform procedure ..... Flight into known icing conditions  
Refer to chapter 4.5

*Continue ►*

Before line up	2/4
----------------	-----

► *Continuing*

*Adjust trims for takeoff*

- 16 - Pitch ..... TO  
Adjust inside green index sector,  
depending on the current balance condition
- 17 - Yaw ..... TO  
Adjust inside green index sector
- 18 - Roll ..... TO  
Adjust at neutral position
- 19 - FLAPS lever ..... TO
- 20 - Flight controls ..... Check  
Check again for proper operation from stop to stop,  
full deflection
- 21 - A/C switch ..... As required
- 22 - BLEED switch ..... AUTO  
The MAX DIFF mode is available through the GTC
- 23 - LFE ..... Check
- 24 - FUEL gages ..... Check quantity and imbalance

▲ **CAUTION** ▲

Do not take off if battery charge > 50 amps ± 4 amps.



● **NOTE** ●

After starting engine with airplane power, a battery charge above 50 amps 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.



- 25 - AMPS ..... Check below **50 amps**
- 26 - **BAT AMP** ..... Check OFF
- 27 - EIS ..... Check

*Continue* ►

Before line up	3/4
----------------	-----

► *Continuing*

- 28 - CAS display ..... Check  
All messages OFF,  
except **PARK BRAKE** and, if used **INERT SEP ON**
- 29 - Altimeter setting ..... Set / Check
- 30 - Instruments departure setting ..... Check
- 31 - SID ..... Set
- 32 - ALT SEL ..... Set
- 33 - XPDR ..... Set
- 34 - VHF/VOR/GPS/XPDR ..... Adjust / Check
- 35 - Stormscope/TAS/TAWS/ADF, if installed ..... Adjust / Check
- 36 - Radar ..... Adjust / Check  
On ground, maintain radar on STANDBY  
in order not to generate radiations prejudicial to outside persons.
- 37 - Radio altimeter, if installed ..... Adjust / Check
- 38 - Transponder code ..... Adjust / Check
- 39 - Takeoff distances ..... Check  
Refer to chapter 5.9

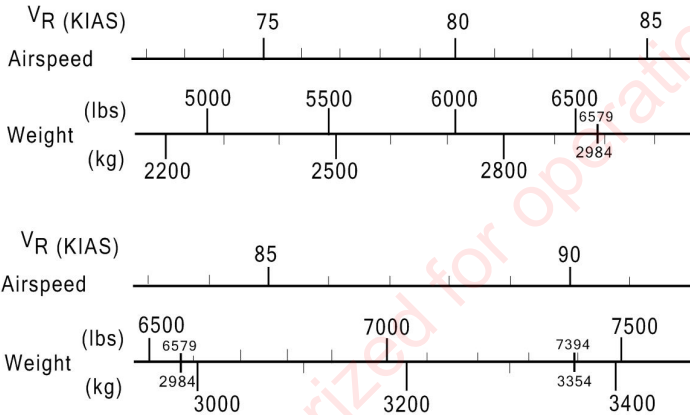
*Continue* ►



Before line up 4/4

► *Continuing*

40 - Rotation airspeed (V<sub>R</sub>) ..... Check



I401000AAA1MA8000

41 - Pilot's / Passengers' belts ..... Check

42 - Passengers' table ..... Stowed

43 - Engine instruments ..... Check

All engine parameters must be in green range,  
except propeller RPM, which will be about 1000 RPM or more  
with THROTTLE at Flight IDLE.

44 - PARK BRAKE ..... OFF

45 - **PARK BRAKE** ..... Check OFF

*End of procedure.*

Takeoff with high OAT (> ISA + 30°C)

• NOTE •

Autothrottle engine protection system is inhibited below 400 ft AGL.

•

- 1 - BLEED switch ..... OFF
- 2 - INERT SEP switch ..... OFF
- 3 - AT disengaged ..... Check
- 4 - Perform procedure ..... Normal takeoff  
or Short takeoff  
Maintaining AT disengaged until 1000 ft AGL

After takeoff :

- 5 - TRQ ..... Reduce by 10 %
  - 6 - BLEED switch ..... AUTO
  - 7 - INERT SEP switch ..... As required
- End of procedure.*

PIM - Not authorized for operation

Normal takeoff	1/3
----------------	-----

When lined up, on brakes :

▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.  
If icing conditions are foreseen, refer to chapter 4.5, paragraph Flight into known icing conditions.



- 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 - Stand-by instrument heading ..... Check
- 4 - OFF/TAXI/LDG switch ..... LDG
- 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 power.
- 9 - PROP RPM ..... Check green sector
- 10 - Brakes ..... Release

*Continue* ►

Normal takeoff	2/3
----------------	-----

► *Continuing*

11 - TRQ ..... 100 %

● NOTE ●

Torque will be about 40 % to 60 % before brake release. For a normal takeoff, maximum torque (100 %) will be applied after brakes release.



● NOTE ●

If AT is enabled, it will engage automatically when TRQ > 80 %.  
 Do not engage AT below 1000 ft (300 m) above ground level in case of takeoff without autothrottle.



12 - Rotation airspeed

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 3 landing gears are up locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly (refer to chapter 3.7 Emergency procedures).
- It is possible that the 3 landing gear position green indicator lights flash unevenly then go off at the end of the sequence.



16 - GEAR UNSAFE red warning light  
 and **GEAR UNSAFE** ..... Check OFF  
 At the end of the sequence

*Continue* ►

## Normal takeoff

3/3

► *Continuing**In case of initial climb at V<sub>x</sub> :*▲ **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, turn IGNITION and INERT SEP switches to ON.  
If icing conditions are foreseen, refer to chapter 4.5, paragraph Flight into known icing conditions.



- 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 - Stand-by instrument heading ..... Check
- 4 - OFF/TAXI/LDG switch ..... LDG
- 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 power.
- 9 - PROP RPM ..... Check green sector
- 10 - TRQ ..... 100 %

● NOTE ●

If AT is enabled, it will engage automatically when TRQ > 80 %.  
Do not engage AT below 1000 ft (300 m) above ground level in case of takeoff without autothrottle.



Continue ►

Short takeoff	2/3
---------------	-----

► *Continuing*

11 - Brakes ..... Release

● NOTE ●

On short runway, maximum torque will be applied before brakes release.

●

12 - Rotation airspeed

*Weight < 6579 lbs (2984 kg) :*

13 - Attitude ..... 15° Up

*Weight > 6579 lbs (2984 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 3 landing gears are up locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly (refer to chapter 3.7 Emergency procedures).
- It is possible that the 3 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<sub>x</sub> :*

▲ **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.*

PIM - Not authorized for operation



**After takeoff**

- 1 - LANDING GEAR lever ..... Check UP
- 2 - FLAPS lever ..... Check UP
- 3 - TRQ ..... Check 100 % max
- 4 - Climb airspeed ..... 124 KIAS
- 5 - EIS ..... Check
- 6 - CAS display ..... Check
- 7 - DE ICE SYSTEM panel ..... As required
- 8 - INERT SEP switch ..... As required

*End of procedure.*

<b>Climb</b>	<b>1/2</b>
--------------	------------

- 1 - ALT SEL ..... Check
- 2 - Altimeters setting ..... As required
- 3 - Autopilot ..... Check  
     Autopilot status and yaw damper ON

**▲ CAUTION ▲**

Observe TRQ / Ng / Np / ITT / OIL T° and PSI limitations.  
 Use optimum torque and / or refer to tables in chapter 5.8.



- 4 - AT ..... As required
- 5 - TRQ adjustment / ITT / Ng ..... Check

● NOTE ●

Torque setting during climb must be adjusted according to engine operation tables in chapter 5.8. These tables give the max. climb power torque setting (MXCL). For each engine, when torque is reduced below 100 % at high altitude according to the tables, during the final climb, reaching the maximum permitted Ng (104 %) is possible and the ITT will be approximately constant, giving a particular value of ITT.

For a simplified engine operation during climb, power may be set first of all by torque, using 100 %, then, when the ITT typical value for climb is reached, by indicated ITT, using this particular value. The margin between this indicated ITT and 790°C (recommended ITT limit during continuous operation) will gradually reduce as flight time is performed.



- 6 - Climb airspeed ..... 124 KIAS  
     Performance tables concerning climb at 124 KIAS and 170 KIAS / M 0.40  
     are given in chapter 5.10
- 7 - EIS ..... Check
- 8 - CAS display ..... Check
- 9 - Weather radar ..... As required
- 10 - Pressurization ..... Check

*Continue ►*

## Climb

2/2

► *Continuing*

A/C panel

- 11 - TEMP selector ..... Adjust
- 12 - FUEL gages ..... Check  
Verify fuel quantity and imbalance, correct if necessary.
- 13 - AMPS / VOLTS ..... Check

▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.



- 14 - DE ICE SYSTEM panel ..... As required  
Refer to chapter 4.5
- 15 - INERT SEP switch ..... As required
- 16 - LDG lights ..... As required

*End of procedure.*

<b>Cruise</b>	<b>1/2</b>
---------------	------------

- 1 - Altimeters setting ..... Check
- 2 - Autopilot ..... Check  
     Autopilot status and yaw damper ON

**▲ CAUTION ▲**

Observe TRQ / Ng / Np / ITT / OIL T° and PSI limitations.  
 Use optimum torque and / or refer to tables in chapter 5.8.



- 3 - AT ..... As required
- 4 - TRQ adjustment / ITT / Ng ..... Check  
     Adjust according to engine operation tables - chapter 5.8  
     or to cruise index on the PFDs

● NOTE ●

Engine operation tables (chapter 5.8) give torque to be applied according to OAT, in order not to exceed authorized maximum power.  
 When INERT SEP switch is OFF, a more accurate setting of torque must then be performed according to cruise performance tables presented in chapter 5.11.



- 5 - EIS ..... Check
- 6 - CAS display ..... Check
- 7 - Pressurization ..... Check

Regularly check fuel gages for :

- 8 - Consumption
- 9 - Expected fuel at destination
- 10 - Tank automatic change every 5 minutes
- 11 - Imbalance  
     Max. imbalance 15 USG

*When the cruise parameters are stabilized, after 4 min minimum :*

- 12 - AMPS / VOLTS ..... Check

*Continue ►*

## Cruise

2/2

▶ *Continuing*▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.



- |                                |                      |
|--------------------------------|----------------------|
| 13 - DE ICE SYSTEM panel ..... | As required          |
|                                | Refer to chapter 4.5 |
| 14 - INERT SEP switch .....    | As required          |
| 15 - LDG lights .....          | As required          |

*End of procedure.*

**Before descent**

- 1 - Briefing before approach ..... Completed
- 2 - Altimeters settings ..... Check
- 3 - Pressurization ..... Check
- 4 - LFE ..... Check
- 5 - FUEL gages ..... Check  
Check for quantity and imbalance
- 6 - Fullest tank ..... Select
- 7 - AMPS / VOLTS ..... Check

**▲ CAUTION ▲**

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.



- 8 - DE ICE SYSTEM mode switch ..... As required  
Refer to chapter 4.5
- 9 - Windshield misting protection system ..... As required

*Prior to descent in moist conditions and to avoid canopy misting :*

- 10 - HOT AIR FLOW distributor ..... Set to 12 o'clock position

*If misting continues :*

- 11 - HOT AIR FLOW distributor ..... Turn to the left  
Or refer to chapter 3.11  
paragraph Windshield misting or internal icing

- 12 - INERT SEP switch ..... As required

*End of procedure.*

**Approach**

- 1 - Altimeters settings (QNH) ..... Set / Check
- 2 - Minimums ..... Set / Check
- 3 - COM / NAV / GPS ..... Set / Check
- 4 - Pressurization ..... Check
- 5 - LFE ..... Check
- 6 - FUEL gages ..... Check  
Check for quantity and imbalance
- 7 - Fullest tank ..... Select
- 8 - AMPS / VOLTS ..... Check

**▲ CAUTION ▲**

If heavy precipitation, turn IGNITION and INERT SEP switch to ON.

- 9 - DE ICE SYSTEM mode switch ..... As required  
Refer to chapter 4.5

- 10 - Windshield misting protection system ..... As required

*Prior to descent in moist conditions and to avoid canopy misting :*

- 11 - HOT AIR FLOW distributor ..... Set to 12 o'clock position

*If misting continues :*

- 12 - HOT AIR FLOW distributor ..... Turn to the left  
Or refer to chapter 3.11  
paragraph Windshield misting or internal icing

- 13 - INERT SEP switch ..... ON

*When below FL 100 :*

- 14 - LDG lights ..... ON
- 15 - Passenger's briefing ..... As required
- 16 - Seats, belts, harnesses ..... Locked
- 17 - Passenger's table ..... Stowed

*End of procedure.*

**Final approach (in GS) or downwind leg (VMC)**

*Long final :*

- 1 - Altimeters ..... Check
- 2 - FUEL gages ..... 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
- 8 - 3 green indicator lights ..... Check ON
- 9 - GEAR UNSAFE red warning light ..... Check OFF
- 10 - **GEAR UNSAFE** ..... Check OFF
- 11 - Amber light ..... Check OFF

• NOTE •

During the sequence :

- The amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the 3 landing gears are down locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly (refer to chapter 3.7 Emergency procedures).
- It is possible that the 3 landing gear position green indicator lights flash unevenly then come ON at the end of the sequence.

•

- 12 - FLAPS lever ..... TO  
Airspeed < 178 KIAS
- 13 - Radar Mode softkey ..... STANDBY

*End of procedure.*



**Short final (≈ 500 ft)***Stabilized approach*

- 1 - LANDING GEAR lever ..... Check  
DN and 3 green

*When airspeed is below 122 KIAS :*

- 2 - FLAPS lever ..... LDG

• NOTE •

However, when autopilot is engaged, in APR mode, with coupled GS, FLAPS must be extended in landing position before crossing the OUTER MARKER.

•

*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 •

The pilot effort required to use the rudder pedals is reduced if the yaw damper is turned off. This is particularly significant when landing in a crosswind.

•

*End of procedure.*

Landing

**▲ WARNING ▲**

**Reduce power smoothly.**

**Quickly reducing the power to idle during the flare may induce a pronounced deceleration which may lead to a drop down of the airplane.**



1 - THROTTLE ..... Flight IDLE

- NOTE ●

Avoid three-point landings. Adopt a positive flight attitude in order to touch runway first with main landing gear.



*After wheels touch :*

**▲ CAUTION ▲**

On snowy or dirty runway, it is better not to use reverse below 40 KIAS.



2 - Reverse ..... As required  
Reverse may be applied as soon as the wheels touch the ground

- NOTE ●

To avoid ingestion of foreign objects, come out of the reverse range as speed reduces and use the brakes if necessary for further deceleration.



- NOTE ●

High power reverse at low speed can throw loose material into the air, and can cause control problems and decrease the comfort of crew and passengers. If permitted by the runway length, it is better to adopt a moderate reverse.



3 - Brakes ..... As required

- NOTE ●

It is advised not to brake energetically, as long as speed has not reached 40 KIAS, as otherwise wheels may be locked.



*End of procedure.*

<b>Go-around with AP OFF</b>	<b>1/2</b>
------------------------------	------------

- 1 - GO AROUND push-button ..... Press  
It provides the moving up of the flight director to + 10°.

*Simultaneously :*

*If AT is engaged :*

THROTTLE will move forward to T/O power.

*If AT is not engaged :*

- 2 - THROTTLE ..... T/O power manually

• NOTE •

The airplane will tend to yaw to the left when power is applied. Right rudder pressure will be required to maintain coordinated straight flight until the rudder trim can be adjusted.

•

- 3 - Attitude ..... 10° Up  
4 - FLAPS lever ..... TO

>> *Weight below 6579 lbs (2984 kg)*

If airspeed has been maintained at 80 KIAS or more and TRQ 100 %, select flaps to TO position as soon as the 10° Up attitude has been attained.

*When the vertical speed is positive and when airspeed is at or above 85 KIAS :*

- 5 - LANDING GEAR lever ..... UP  
All warning lights OFF

*When airspeed is at or above 110 KIAS :*

- 6 - FLAPS lever ..... UP  
7 - Climb airspeed ..... As required

>> *Weight above 6579 lbs (2984 kg)*

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 the vertical speed is positive and when airspeed is at or above 90 KIAS :*

- 8 - LANDING GEAR lever ..... UP  
All warning lights OFF

*Continue ►*

**Go-around with AP OFF** **2/2**

► *Continuing*

*When airspeed is at or above 115 KIAS :*

9 - FLAPS lever ..... UP

10 - Climb airspeed ..... As required

>> *All*

11 - TRQ ..... As required

*End of procedure.*

PIM - Not authorized for operation

**Go-around with AP ON**

- 1 - GO AROUND push-button ..... Press  
AP remains ON with the flight director moving up to + 10° .

*Simultaneously :*

*If AT is engaged :*

THROTTLE will move forward to T/O power.

*If AT is not engaged :*

- 2 - THROTTLE ..... T/O power manually
- 3 - FLAPS lever ..... TO

>> *Weight below 6579 lbs (2984 kg)*

If airspeed has been maintained at 80 KIAS or more and TRQ 100 %, select flaps to TO position as soon as the 10° Up attitude has been attained.

*When the vertical speed is positive and when airspeed is at or above 85 KIAS :*

- 4 - LANDING GEAR lever ..... UP  
All warning lights OFF

*When airspeed is at or above 110 KIAS :*

- 5 - FLAPS lever ..... UP
- 6 - Climb airspeed ..... As required

>> *Weight above 6579 lbs (2984 kg)*

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 the vertical speed is positive and when airspeed is at or above 90 KIAS :*

- 7 - LANDING GEAR lever ..... UP  
All warning lights OFF

*When airspeed is at or above 115 KIAS :*

- 8 - FLAPS lever ..... UP
- 9 - Climb airspeed ..... As required

>> *All*

- 10 - TRQ ..... As required

*End of procedure.*

Touch and go 1/2

Before wheels touch :

**▲ WARNING ▲**

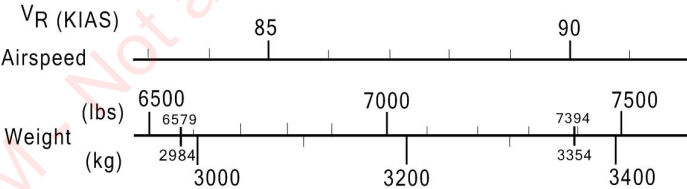
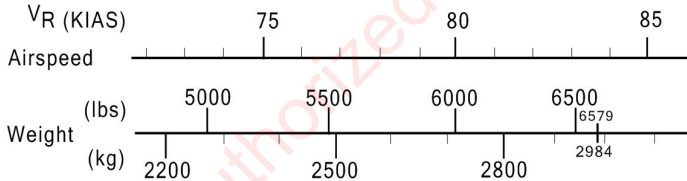
**AT engagement is prohibited for touch and go.**

**Reduce power smoothly.**

**Quickly reducing the power to idle during the flare may induce a pronounced deceleration which may lead to a drop down of the airplane.**



- 1 - Takeoff distances . . . . . Checked  
Refer to chapter 5.9
- 2 - Rotation airspeed (V<sub>R</sub>) . . . . . Checked



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After wheels touch :

- 3 - FLAPS lever . . . . . TO
- 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.

*Continue* ►

## Touch and go

2/2

► *Continuing***▲ WARNING ▲**

**Check that flaps have well 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 ..... T/O power

*If normal takeoff :*

6 - Attitude ..... 10° Up

*If short takeoff :**Weight < 6579 lbs (2984 kg)*

7 - Attitude ..... 15° Up

*Weight > 6579 lbs (2984 kg)*

8 - Attitude ..... 12°5 Up

## ● NOTE ●

However, the POH does not supply distances concerning touch and go. These distances are let to pilot's initiative.



## ● NOTE ●

Do not engage AT below 1000 ft (300 m) above ground level.

*End of procedure.*

**Runway clear**

*Runway clear - airplane stopped*

▲ **CAUTION** ▲

Generator load < 200 amps



- 1 - TAXI lights ..... ON
- 2 - NAV switch ..... OFF
- 3 - STROBE switch ..... OFF
- DE ICE SYSTEM panel :
- 4 - DE ICE SYSTEM mode switch ..... MAN  
All deicing systems turn on
- 5 - INERT SEP switch ..... Check ON
- 6 - AIRFRAME DE ICE switch ..... OFF
- 7 - PROP DE ICE switch ..... OFF
- 8 - WINDSHIELD switch ..... As required
- 9 - PITOT L/R & STALL HTR switch ..... OFF
- 10 - Trims ..... Reset to takeoff position
- 11 - FLAPS lever ..... UP
- 12 - A/C switch ..... As required
- 13 - XPDR ..... Check GND
- 14 - WX radar ..... Check

Maintain WX radar on standby in order  
not to generate radiations prejudicial to outside persons.  
The WX radar is automatically set to standby after the 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 switch ..... MAN
  - 7 - AP / TRIMS switch ..... OFF
  - 8 - A/C switch ..... OFF
  - 9 - SEATS HTRS MASTER switch ..... OFF
  - 10 - BLEED switch ..... OFF
  - 11 - Check for cabin depressurization ( $\Delta p = 0$  Psi).
  - 12 - THROTTLE ..... Flight IDLE  
For 2 min
    - NOTE •
    - This allows the engine to stabilize at minimum obtainable ITT in order to minimize the likelihood of oil coking in the #3 bearing area.
    -
  - 13 - THROTTLE ..... LO-IDLE  
For 15 sec
    - NOTE •
    - Keep THROTTLE on LO-IDLE position for 15 sec minimum before shutting down engine.
    -
  - 14 - THROTTLE ..... CUT OFF
  - 15 - INERT SEP switch ..... OFF
  - 16 - Radar Mode Softkey ..... OFF
- Continue ►*

**Shutdown** 2/3

► *Continuing*

Fuel system check

17 - **AUX BOOST PMP ON** ..... Check ON  
Wait for AUX BP operation, an audible operation of the auxiliary booster pump should be heard, it confirms the proper functioning of the system

18 - AUX BP switch ..... OFF

19 - GENERATOR selector ..... OFF

*When inertial separator is retracted, after approximately 40 sec :*

20 - SOURCE selector ..... OFF

21 - Crash lever ..... Pull down

22 - FUEL TANK SELECTOR ..... OFF

23 - PARK BRAKE ..... As required

▲ **CAUTION** ▲

In case of high OAT [above 35°C (95°F)], it is required to perform 30 sec dry motoring run after shutdown to improve cooling of the bearing cavities and minimize oil coking - refer to procedure Motoring.



Shutdown stand-by instruments

*MD302 normal shutdown procedure :*

24 - No pilot action required for normal shutdown. The MD302 will shut down automatically within 60 seconds following electrical power shutdown.

*MD302 manual shutdown procedure :*

● **NOTE** ●

The MD302 can be manually shut down when in the discharge mode to conserve battery power.



25 - Press and hold the control knob for approximately 2 seconds.

*Continue* ►

## Shutdown

3/3

▶ *Continuing*

- 26 - Turn the control knob to select POWER OFF on the menu and press the control knob to shut down the standby attitude module.

*End of procedure.*

PIM - Not authorized for operation

Outside check after shutdown

- 1 - Oxygen cylinder (R.H. Karman) ..... Close

- NOTE •

Within 10 minutes following the engine shutdown, check engine oil level.  
Refer to chapter 8.7 Oil level check.

- 

*End of procedure.*

PIM - Not authorized for operation

## 4.5 - Particular procedures

• NOTE •

The procedures and procedure elements given in this chapter Particular procedures supplement the normal procedures or complete certain elements of the normal procedures described in chapter(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 •

Refer to figure 5.5.1 to convert OAT to SAT in flight.

$SAT = OAT - 2^{\circ}C$  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.

*Continue ►*

**Flight into known icing conditions** 2/4

► *Continuing*

- Windshield electrical deice system.
- Inertial separator.

Description of deice systems is presented in chapter 7.13.

Ice accumulation thickness is monitored by the pilot on the L.H. wing leading edge.

At night, a leading edge icing inspection light located on the fuselage L.H. side, activated by the ICE LIGHT switch, 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 switch. If correct operation cannot be confirmed, do not enter or leave as soon as possible icing conditions.

Perform emergency procedure Leading edges deicing failure, paragraph 3.11.

**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

▲ **CAUTION** ▲

Inertial separator position affects engine parameters, particularly TRQ and ITT. Care must be exercised when operating the inertial separator or when increasing power with the inertial separator ON, to avoid exceeding engine limitations.



- 2 - All deicing systems ..... Check ON  
*Continue* ►

**Flight into known icing conditions** **3/4**

► *Continuing*

3 - IGNITION switch ..... ON

• NOTE •

IGNITION switch 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	
	< 6579 lbs (2984 kg)	> 6579 lbs (2984 kg)
FLAPS UP	130 KIAS	135 KIAS
FLAPS TO	110 KIAS	115 KIAS
FLAPS LDG	90 KIAS	95 KIAS

- 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.

*Continue* ►

Flight into known icing conditions

4/4

► *Continuing*

**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 %, if cruise power is not changed, or more, if cruise power setting should be decreased due to the additional inertial separator limitations (ITT limitation).

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 chapter 5.14 Landing distances.

*End of procedure.*



**Flight into severe icing conditions**

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.

**Procedures for exiting the severe icing environment****• NOTE •**

These procedures are applicable to all flight phases from takeoff to landing.

•

Monitor the ambient air temperature. While severe icing may form at temperatures as cold as - 18°C, increased vigilance is warranted at temperatures around freezing with visible moisture present. If the visual cues specified in section 2 Limitations for identifying severe icing conditions are observed, accomplish the following :

- 1 - Immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the severe icing conditions in order to avoid extended exposure to flight conditions more severe than those for which the airplane has been certificated.
- 2 - Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.
- 3 - Do not engage the autopilot.

*If the autopilot is engaged :*

- 4 - Hold the control wheel firmly and disengage the autopilot.

*If an unusual roll response or uncommanded roll control movement is observed :*

- 5 - Angle-of-attack ..... Reduce
- 6 - 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 :*

- 7 - Do not retract them until the airframe is clear of ice.
- 8 - Report these weather conditions to Air Traffic Control.

*End of procedure.*

**Flight under heavy precipitations**

1 - IGNITION switch ..... ON

• NOTE •

This action is intended, in highly improbable case of an engine flame-out 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**

*If takeoff or landing must be performed on a runway covered with water :*

1 - IGNITION switch ..... ON

2 - INERT SEP switch ..... ON

*End of procedure.*

Utilization on runways covered with melting  
or not tamped snow 1/3

If required :

Refer to paragraph Utilization by cold weather and very cold weather.

**▲ CAUTION ▲**

When engine is shut down, 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

Continue ►

Utilization on runways covered with melting  
or not tamped snow 2/3

► *Continuing*

- 9 - Rotation airspeed ..... Increased by 5 KIAS

• 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 3 in some melting or not tamped snow  
cases.

•

- 10 - IGNITION switch ..... ON
- 11 - INERT SEP switch ..... ON
- 12 - **INERT SEP ON** ..... Check ON

Takeoff :

*During takeoff run :*

- 13 - Lightly lift up nose wheel  
In order to reduce the forward resistance due to snow  
accumulation against the wheel.

*After takeoff :*

- 14 - Normally retract the landing gear, then perform a complete cycle  
(extension / retraction) at IAS < 150 KIAS.

Before landing :

- 15 - IGNITION switch ..... ON
- 16 - INERT SEP switch ..... ON
- 17 - **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 :

- 18 - Do not use the parking brake to prevent brake lock.
- 19 - Use chocks and / or tie-down the airplane.

*End of procedure.*

**Utilization on icy or covered with tamped snow runways 1/2**

If required :

Refer to paragraph Utilization by cold weather and very cold weather.

**▲ CAUTION ▲**

When engine is shut down, 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  
Use  $\beta$  area of THROTTLE to adjust airspeed  
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 switch ..... ON
- 9 - INERT SEP switch ..... ON
- 10 - **INERT SEP ON** ..... Check ON

Continue ►

**Utilization on icy or covered with tamped snow runways 2/2**► *Continuing*

## Takeoff :

- 11 - After takeoff, normally retract the landing gear, then perform a complete cycle (extension / retraction) at IAS < 150 KIAS.

## Before landing :

- 12 - IGNITION switch ..... ON  
13 - INERT SEP switch ..... ON  
14 - **INERT SEP ON** ..... Check ON

## Landing :

*After wheels touch*

- 15 - Use reverse only if necessary and very progressively by monitoring the airplane behaviour.

## ● NOTE ●

The engine torque tends to make the airplane turn to the left.



- 16 - Taxi airspeed ..... Max. 5 KIAS  
Use  $\beta$  area of THROTTLE to adjust airspeed  
Apply very smooth variations using THROTTLE

- 17 - 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.



- 18 - Use brakes only at very low airspeed and progressively.

## On the ramp, after landing or taxiing :

- 19 - Do not use the parking brake to prevent brake lock.  
20 - Use chocks and / or tie-down the airplane.

*End of procedure.*

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C)

• NOTE •

The procedure hereafter supplements the normal procedures for the airplane use when operating under temperatures between 0°C and - 40°C on ground.

•

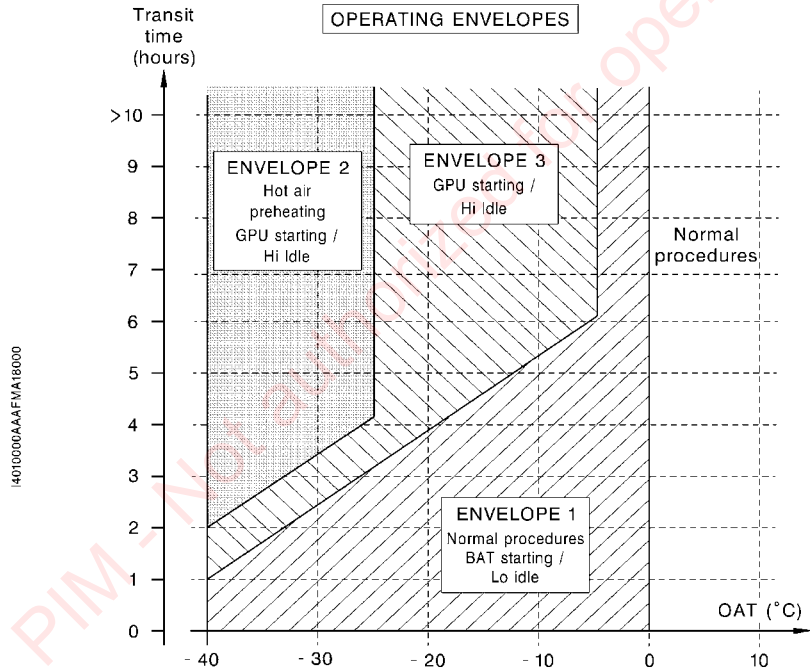


Figure 4.5.1 - Operating envelopes by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C)

End of procedure.



## Utilization by 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.

According to the condition of runways and taxiways

- 2 - Perform procedure ..... Utilization on runways covered with melting or not tamped snow  
Refer to chapter 4.5

or

- 3 - Perform procedure ..... Utilization on icy or covered with tamped snow runways  
Refer to chapter 4.5

- 4 - Carry out a complete rotation of the propeller to check its free rotation.

- 5 - 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.

- 6 - Remove chocks and / or release ties from the airplane.

- 7 - Check the free deflection of the flight controls and of the elevator trim.

- 8 - Check the free deflection of THROTTLE.

## Before starting engine / Engine start / After engine start :

- 9 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

## Before taxiing / Taxiing / Before line up / Takeoff :

## DE ICE SYSTEM panel

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

- 11 - INERT SEP switch ..... Check ON

*Continue* ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 1 2/3

► *Continuing*

- 12 - **INERT SEP ON** ..... Check ON
- 13 - PITOT L/R & STALL HTR switch ..... ON
- 14 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.  
According to the condition of runways and taxiways
- 15 - Perform procedure ..... Utilization on runways covered with melting or not tamped snow  
Refer to chapter 4.5

or

- 16 - Perform procedure ..... Utilization on icy or covered with tamped snow runways  
Refer to chapter 4.5

Landing / After landing :

- 17 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.  
According to the condition of runways and taxiways
- 18 - Perform procedure ..... Utilization on runways covered with melting or not tamped snow  
Refer to chapter 4.5

or

- 19 - Perform procedure ..... Utilization on icy or covered with tamped snow runways  
Refer to chapter 4.5

Shutdown :

- 20 - PARK BRAKE ..... OFF

*Continue* ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 1

3/3

► *Continuing*

21 - **PARK BRAKE** ..... Check OFF

• NOTE •

It is recommended not to use the parking brake by cold or very cold weather, so that the brakes do not stick when cooling.

•

- 22 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.
- 23 - Use chocks and / or tie-down the airplane using anchor points on ground.
- 24 - Put blanking caps and plugs on air inlets, exhaust stubs, pitots and static ports.

*End of procedure.*

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 1/5

• NOTE •

The procedures hereafter supplement or replace the normal procedures for the airplane use when operating in the Envelope 2 defined in figure 4.5.1.



Preflight inspection :

- 1 - Preheat the engine and 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 air inlet, on engine rear table by opening the upper cowling and in the cabin by half-opening the door.



- 2 - Remove any snow or ice from the wings, stabilizers and movable surfaces.

According to the condition of runways and taxiways

- 3 - Perform procedure ..... Utilization on runways covered with melting or not tamped snow  
Refer to chapter 4.5

or

- 4 - Perform procedure ..... Utilization on icy or covered with tamped snow runways  
Refer to chapter 4.5

- 5 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly 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.

- 9 - Check the free deflection of the flight controls and of the elevator trim.

- 10 - Check the free deflection of THROTTLE.

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2

2/5

► *Continuing*

11 - IGNITION switch ..... ON during 30 seconds

12 - **IGNITION** ..... Check ON

Then :

13 - IGNITION switch ..... AUTO

14 - **IGNITION** ..... Check OFF

## • NOTE •

This enables to preheat spark igniters before starting the engine.

•

Before starting the engine :

15 - Perform normal procedures defined in Chapter(s) 4.3 and / or 4.4.

Engine start :

## ▲ CAUTION ▲

The starting must be mandatorily performed using an external power source (GPU).

▲

16 - Ground power unit ..... Connected

17 - SOURCE selector ..... GPU

18 - **GPU DOOR** ..... Check ON19 - Battery and ESS. bus VOLTS ..... Check voltage ≈ 28 Volts  
On EIS of MFD

Engine controls

20 - MAN OVRD control ..... Full backward (notched)

*Continue* ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 3/5

► *Continuing*

▲ **CAUTION** ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



21 - THROTTLE ..... CUT OFF  
FUEL panel

22 - AUX BP switch ..... ON

23 - **AUX BOOST PMP ON** ..... Check ON

24 - **FUEL PRESS** ..... Check OFF

25 - Propeller area ..... Clear  
ENGINE START panel

26 - IGNITION switch ..... ON

27 - **IGNITION** ..... Check ON

28 - STARTER switch ..... ON  
2 sec then OFF

*Simultaneously :*

29 - Timer ..... Start

30 - **STARTER** ..... Check ON

*When Ng ≈ 13 % :*

31 - THROTTLE ..... HI-IDLE  
Move directly THROTTLE to HI-IDLE

● **NOTE** ●

The more the temperature is low, the more the selector is hard to move.  
Starter limits and checks of starting sequence are unchanged.



*Continue* ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 4/5

► *Continuing*

When Ng > 50% :

▲ **CAUTION** ▲

If the starter does not go off automatically, disengage it using the ABORT position of the STARTER switch.



- 32 - Starter ..... Check OFF automatically
- 33 - **STARTER** ..... Check OFF
- 34 - Engine parameters ..... Check  
Ng = 70 % ± 2 %  
Oil pressure and ITT in green sector
- 35 - SOURCE selector ..... BATT
- 36 - **BAT OFF** ..... Check OFF
- 37 - IGNITION switch ..... AUTO
- 38 - **IGNITION** ..... Check OFF
- 39 - Ground power unit ..... Disconnect
- 40 - GPU door ..... Close
- 41 - **GPU DOOR** ..... Check OFF
- FUEL panel
- 42 - AUX BP switch ..... AUTO
- 43 - **AUX BOOST PMP ON** ..... Check OFF
- 44 - GENERATOR selector ..... MAIN
- 45 - **MAIN GEN** ..... Check OFF  
Reset if necessary

*Continue* ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 5/5

► *Continuing*

After engine start :

*As soon as the current flow is lower than 100 A :*

A/C panel

- 46 - A/C switch ..... PILOT
- 47 - TEMP selector ..... Max warm
- 48 - FAN speed selector ..... 0

PRESSURIZATION panel

- 49 - BLEED switch ..... AUTO  
The MAX DIFF mode is available through the GTC

*As soon as the oil temperature is greater than 0°C :*

- 50 - THROTTLE ..... FEATHER twice  
Flight IDLE to LO-IDLE, then Flight IDLE twice
- 51 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

Before taxiing / Taxiing / Before line up / Takeoff :

- 52 - Perform procedures defined for Envelope 1.

Landing / After landing / Shutdown :

- 53 - Apply procedures defined for Envelope 1.

*End of procedure.*



Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 3 1/2

● NOTE ●

The procedures defined for the Envelope 2 are also applicable for the Envelope 3. However it is possible to start the engine using GPU without preheating of the engine and the cabin with a heater. In that case follow the procedure hereafter.

●

Preflight inspection / Before starting the engine / Engine start :

- 1 - Apply the procedures defined for the Envelope 2.

After engine start :

*As soon as the current flow is lower than 100 A :*

A/C panel

- 2 - A/C switch ..... PILOT
- 3 - TEMP selector ..... Max warm
- 4 - FAN airspeed selector ..... 0

PRESSURIZATION panel

- 5 - BLEED switch ..... AUTO  
The MAX DIFF mode is available through the GTC

- 6 - Preheat the cabin respecting time defined in figure 4.5.2.  
Before switching on the navigation and monitoring systems. This allows to respect minimum temperatures necessary for the equipment operation.

*As soon as the oil temperature is greater than 0°C :*

- 7 - THROTTLE ..... FEATHER twice  
Flight IDLE to LO-IDLE, then Flight IDLE twice
- 8 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

Taxiing / Before line up / Takeoff /

- 9 - Perform procedures defined for Envelope 1.

*Continue ►*

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 3 2/2

► *Continuing*

Landing / After landing / Shutdown /

10 - Perform procedures defined for 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 chapter 8.10.

●

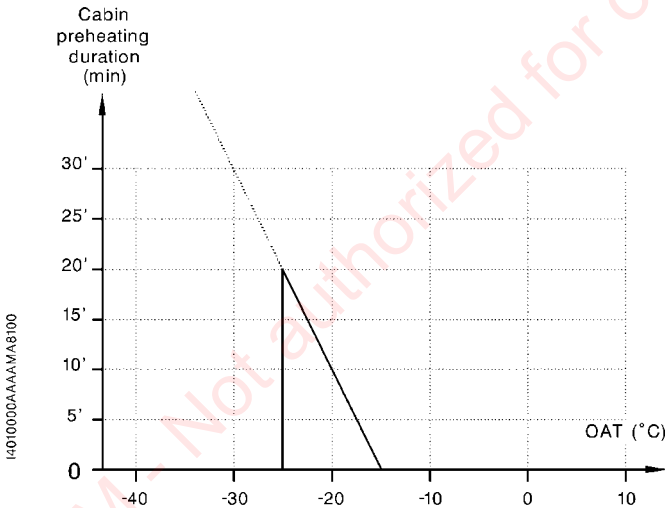


Figure 4.5.2 - Preheating duration

*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 2 following values :

-  $\Delta V = \frac{(\text{wind down} - 10)}{2}$  (Ex. wind down = 30 kt i.e.  $\Delta V = 10$  kt)

The wind down is the longitudinal component of the wind.

- Gust amplitude

- 2 - FLAPS lever ..... LDG

• NOTE •

It is not desirable to adopt configuration with flaps in 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 gage indicating low.



▲ CAUTION ▲

Maximum time for sideslip condition is 30 seconds.



- 3 - Maintain airplane in drift correction at the latest until the beginning of flare.

*In short final, on a short runway :*

- 4 - Use normal approach airspeed ..... IAS = 80 KIAS

- 5 - FLAPS lever ..... LDG

To avoid an excessive airspeed

• NOTE •

In this case, landing distance indicated in chapter 5.14, would not be respected.



*Continue ►*

Landing procedure with strong headwind or crosswind 2/2

► *Continuing*

*Before touch-down :*

- 6 - Generate a slideslip with the rudder in order to align fuselage with the runway (ie left crosswind, left wing low).

*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.

- 7 - 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 adopt a power greater than the one obtained when the THROTTLE is set to Flight IDLE, so the pilot will not be tempted to use the reverse.

*End of procedure* ■

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, ...) 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.*

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**GPS navigation****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 the table 2.6.1 in section 2 / GNSS (GPS/SBAS) navigation equipment approvals, 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 .....	5.1.1
5.2	-	Noise level .....	5.2.1
5.3	-	Airspeed calibration .....	5.3.1
5.4	-	Cabin pressurization envelope .....	5.4.1
5.5	-	SAT - OAT conversions .....	5.5.1
5.6	-	Stall speeds .....	5.6.1
5.7	-	Wind components .....	5.7.1
5.8	-	Engine operation .....	5.8.1
		Maximum climb power (FL < 200) - 124 KIAS .....	5.8.4
		Maximum climb power (FL > 200) - 124 KIAS .....	5.8.5
		Maximum climb power (FL < 200) - 170 KIAS / M 0.40 .....	5.8.6
		Maximum climb power (FL > 200) - 170 KIAS / M 0.40 .....	5.8.7
		Maximum cruise power (FL < 200) .....	5.8.8
		Maximum cruise power (FL > 200) .....	5.8.9
		Normal (recommended) cruise power (FL < 200) .....	5.8.10
		Normal (recommended) cruise power (FL > 200) .....	5.8.11
5.9	-	Takeoff distances .....	5.9.1
		Weight : 5512 lbs (2500 kg) .....	5.9.2
		Weight : 6579 lbs (2984 kg) .....	5.9.3
		Weight : 7394 lbs (3354 kg) .....	5.9.4

5.10	-	Climb performance .....	5.10.1
		MXCL - Speeds (IAS = 124 KIAS) .....	5.10.1
		MXCL - Speeds (IAS = 170 KIAS / M 0.40) .....	5.10.2
		MXCL - Time, consumption and climb distance (IAS = 124 KIAS) .....	5.10.3
		MXCL - Time, consumption and climb distance (IAS = 170 KIAS / M 0.40) .....	5.10.6
		Climb performance after go-around .....	5.10.9
		Climb performance - Flaps TO .....	5.10.10
5.11	-	Cruise performance .....	5.11.1
		Maximum cruise .....	5.11.1
		Normal cruise (Recommended) .....	5.11.9
		Long range cruise (5500 lbs - 2495 kg) .....	5.11.17
		Long range cruise (6300 lbs - 2858 kg) .....	5.11.19
		Long range cruise (7100 lbs - 3220 kg) .....	5.11.21
5.12	-	Time, consumption and descent distance .....	5.12.1
5.13	-	Holding time .....	5.13.1
5.14	-	Landing distances .....	5.14.1
		Weight : 7024 lbs (3186 kg) .....	5.14.2
		Weight : 6250 lbs (2835 kg) .....	5.14.3
		Weight : 5071 lbs (2300 kg) .....	5.14.4

## 5.1 - General

This section provides all of the required and additional performance data for airplane operations.

The section 9, Supplements of the POH, provides 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 - Amdt 28	88 dB(A)	76.4 dB(A)
ICAO, Annex 16, Vol. 1, 6th edition, Amdt 8 Chapter 10, Appendix 6	85 dB(A)	76.4 dB(A)

Approved noise levels for TBM airplane are stated in 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) : instrument error supposed to be null (power configuration for cruise condition flight).

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

Figure 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	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

Figure 5.3.2 - Alternate static source (Bleed auto)



### 5.4 - Cabin pressurization envelope

• NOTE •

The cabin pressurization envelope below characterizes the cabin altitude that could be sustained by the fuselage at different flight levels. The curve shows the minimum cabin altitude as a function of flight level, corresponding to the maximum differential pressure. The maximum differential pressure is limited by the pressurization system protection function.

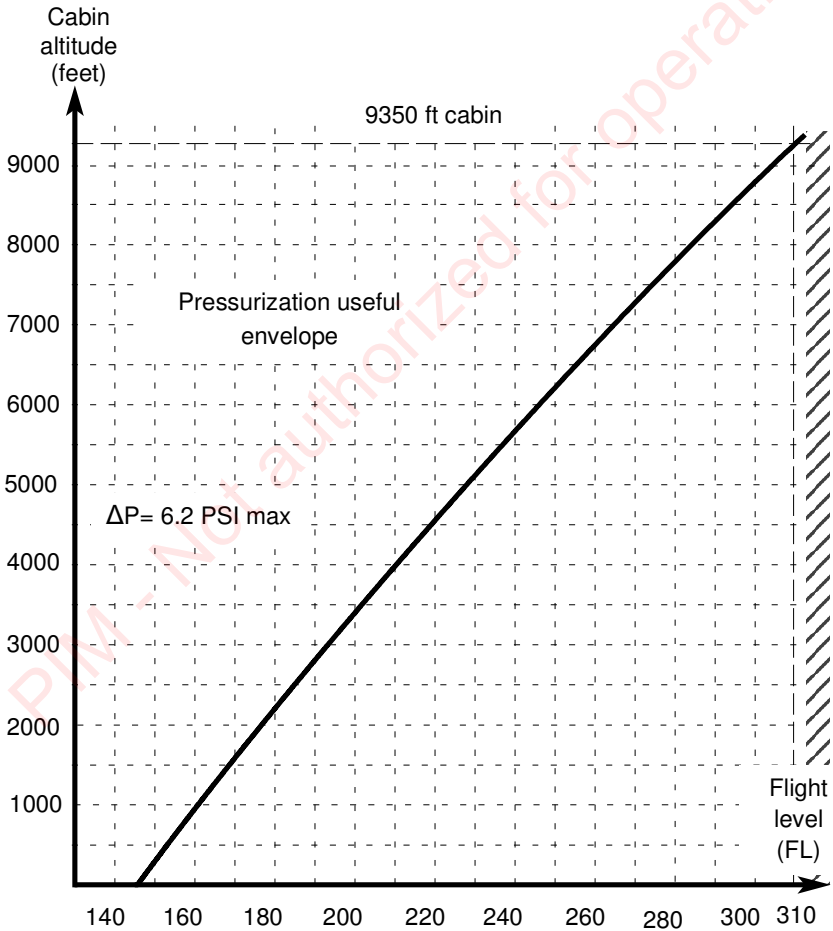


Figure 5.4.1 - Cabin pressurization envelope

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## 5.5 - SAT - OAT conversions

• NOTE •

These indicated temperatures are available for stabilized cruise at normal operating power.

Pressure altitude (feet)	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
2000	-09	-08	01	02	11	12	21	22	31	32
4000	-13	-12	-03	-02	07	08	17	18	27	28
6000	-17	-16	-07	-06	03	04	13	14	23	24
8000	-21	-20	-11	-10	-01	00	09	10	19	20
10000	-25	-24	-15	-14	-05	-04	05	06	15	16
12000	-29	-28	-19	-18	-09	-08	01	02	11	12
14000	-33	-32	-23	-22	-13	-12	-03	-02	07	08
16000	-37	-36	-27	-26	-17	-16	-07	-06	03	04
18000	-41	-40	-31	-30	-21	-20	-11	-10	-01	00
20000	-45	-44	-35	-34	-25	-24	-15	-14	-05	-04
22000	-49	-48	-39	-38	-29	-28	-19	-18	-09	-08
24000	-53	-52	-43	-42	-33	-32	-23	-22	-13	-12
26000	-57	-56	-47	-46	-37	-36	-27	-26	-17	-16
28000	-61	-60	-51	-50	-41	-40	-31	-30	-21	-20
30000	-65	-64	-55	-54	-45	-44	-35	-34	-25	-24
31000	-67	-66	-57	-56	-47	-46	-37	-36	-27	-26

Figure 5.5.1 - SAT - OAT conversions

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**5.6 - Stall speeds**

Airplane weight	Config.		Bank											
	Flight idle		0°			30°			45°			60°		
	LDG GR	Flaps	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS
4850 lbs (2200 kg)	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
5512 lbs (2500 kg)	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
6579 lbs (2984 kg)	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
7394 lbs (3354 kg)	UP	UP	81	83	93	88	89	101	97	99	112	119	117	137
	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

Figure 5.6.1 - Stall speeds

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Pilot's Operating Handbook

**5.7 - Wind components**

Example :    Angle between wind direction and flight path    : 50°  
               Headwind     : 8 kts  
               Crosswind    : 10 kts  
               Wind speed     : 13 kts

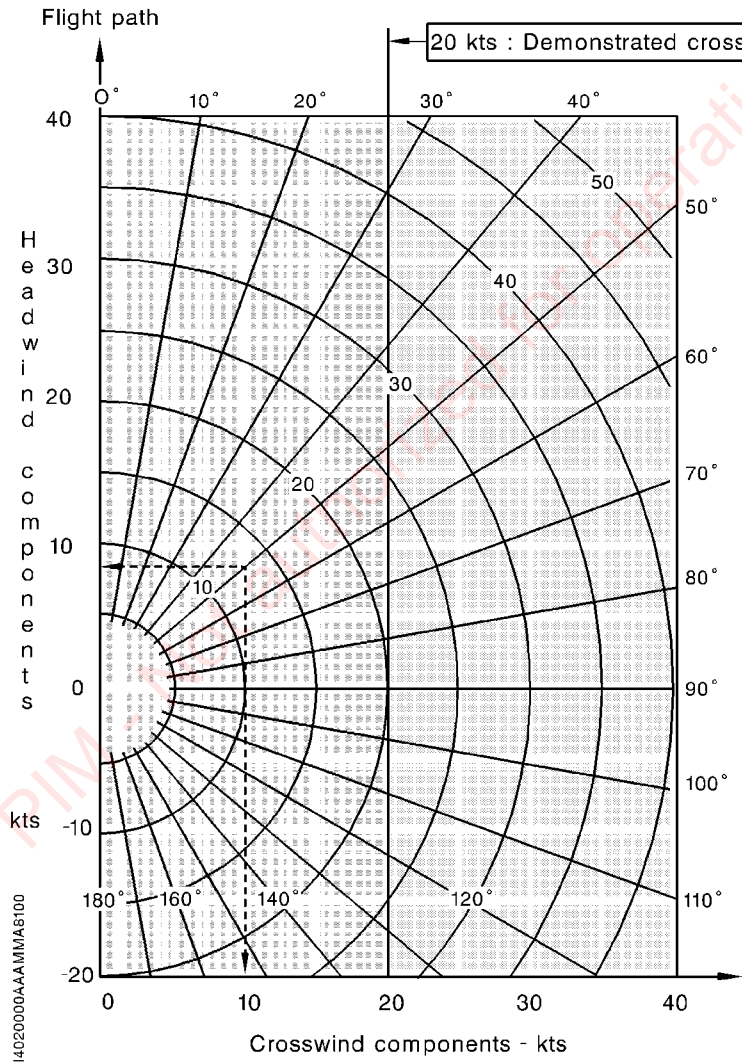


Figure 5.7.1 - Wind components

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## Pilot's Operating Handbook

**5.8 - Engine operation**

The following tables or/and the optimum torque indicator must be used during normal operation of the airplane.

**▲ CAUTION ▲**

It is the responsibility of the operator to make sure that the required version of GARMIN system software is installed prior to using the hereafter engine operation tables.

The GARMIN system software required for this revision of the engine operation tables is the version 0719.14 or later.

This information is displayed on the MFD power-up page upon system start.

**▲ CAUTION ▲**

The TRQ setting must never exceed 100 %.  
When setting TRQ, Ng must never exceed 104 %.




The following conditions are given for all the tables (pages 5.8.4 to 5.8.11) :

**● NOTE ●**

Inertial separator must be OFF and BLEED HI msg OFF.



- Landing gear and flaps UP.
- BLEED switch on AUTO.
-  represent the ISA conditions at the flight level.

The torque must be set at or below the value corresponding to the local conditions of flight level and temperature.

**● NOTE ●**

The engine ITT limit at 840°C during continuous operation may be used in case of operational need.



Example, for conditions :

- FL = 260
- OAT = - 22°C

the following tables give the maximum torque to be set.

**Maximum climb power**

TRQ setting = 83 % for IAS = 124 KIAS (Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed), cf. tables figures 5.8.1 and 5.8.1A

**Maximum cruise power**

TRQ setting = 97 %, cf. tables figures 5.8.3 and 5.8.3A

**Recommended cruise power**

TRQ setting = 92 %, cf. tables figures 5.8.4 and 5.8.4A

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### Maximum climb power (FL < 200) - 124 KIAS

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE ● : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
	100	110	120	130	140	150	160	170	180	190	200	
-24	▲ CAUTION ▲ TRQ max 100 % Ng max 104 %											
-22	Recommended Ng < 103 %											
-20												
-18												
-16												
-14												
-12												
-10												100
-8												100
-6												98
-4												96
-2												100
0												99
2												95
4												98
6												93
8												100
10												98
12												93
14												95
16												99
18												98
20												93
22												100
24												98
26												94
28												90
30												87
32												88
34												90

Figure 5.8.1 - Maximum climb power (FL < 200) - 124 KIAS

- NOTE ●

Refer to page 5.8.1 for general conditions

●

Pilot's Operating Handbook

**Maximum climb power (FL > 200) - 124 KIAS**

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE ● : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)													
	200	210	220	230	240	250	260	270	280	290	300	310		
-66									99	95	90	86		
-64	▲ CAUTION ▲ TRQ max 100 % Ng max 104 % ▲			Recommended Ng < 103 %						98	94	89	85	
-62										97	93	88	84	
-60										100	96	92	87	83
-58										100	95	91	86	82
-56										99	94	90	85	81
-54								98	93	89	85	81		
-52							100	97	92	88	84	80		
-50							100	95	91	87	83	79		
-48							99	94	90	86	82	78		
-46							98	93	89	85	81	77		
-44						100	97	92	88	84	80	77		
-42						100	96	91	87	83	79	75		
-40						99	95	90	86	82	78	74		
-38						98	93	89	85	81	77	73		
-36					100	97	92	88	84	80	76	72		
-34					99	95	91	87	82	78	75	71		
-32					98	94	90	85	81	77	73	70		
-30				100	97	93	88	84	80	76	72	69		
-28			100	96	92	87	83	79	75	71	68			
-26				98	94	90	86	82	78	74	70	66		
-24			100	97	93	89	85	80	76	73	69	65		
-22			100	96	92	88	83	79	75	71	67	64		
-20			99	95	90	86	82	78	74	70	66	62		
-18		100	97	93	89	85	81	77	72	68	64	60		
-16		100	96	92	88	83	79	75	71	66	62	59		
-14		99	94	90	86	82	77	73	69	65	61	57		
-12	100	97	93	89	85	80	75	71	67	63	59	55		
-10	100	96	91	87	82	78	74	69	65	61	57	53		
-8	98	94	89	85	81	76	72	67	63	59	55	51		
-6	96	92	88	83	79	74	70	65	61	57	53			
-4	95	90	85	81	77	72	67	63	59	55				
-2	93	88	83	79	74	70	65	61	57					
0	91	85	81	76	71	67	63	59						
2	88	83	78	74	69	65	61							
4	85	80	76	71	67	63								
6	82	78	74	69	65									
8	80	76	71	67										
10	78	73	69											
12	75	70												

Figure 5.8.1A - Maximum climb power (FL > 200) - 124 KIAS

- NOTE ●

Refer to page 5.8.1 for general conditions

●

**Maximum climb power (FL < 200) - 170 KIAS / M 0.40**

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE ● : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)																	
	100	110	120	130	140	150	160	170	180	190	200							
-24																		
-22																		
-20																		
-18																		
-16																		
-14																		
-12																		
-10																		
-8												100						
-6												100						
-4												98						
-2												100	95					
0												100	98	92				
2												100	95	90				
4												100	97	92	87			
6												99	94	90	85			
8												100	97	92	87	82		
10												99	94	89	84	79		
12												100	96	91	86	81	77	
14												100	98	93	88	83	79	74
16												100	95	90	85	81	76	
18												100	97	92	87	82	78	
20												99	94	89	85	80		
22												100	96	91	86	82		
24												100	98	93	88	84		
26												99	95	90	85			
28												100	96	92	87			
30												98	93	89				
32												95	90					
34												92						

Figure 5.8.2 - Maximum climb power (FL < 200) - 170 KIAS / M 0.40

- NOTE ●

Refer to page 5.8.1 for general conditions

●

Pilot's Operating Handbook

**Maximum climb power (FL > 200) - 170 KIAS / M 0.40**

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE • : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66										98	93	88
-64										97	92	87
-62									100	96	91	86
-60									100	95	90	85
-58									99	94	89	84
-56									98	93	88	83
-54								100	96	92	87	83
-52								100	95	90	86	82
-50								99	94	89	85	81
-48								98	93	89	84	80
-46							100	97	92	88	83	79
-44							100	96	91	86	82	78
-42								99	94	90	85	81
-40								98	93	88	84	80
-38						100	97	92	87	83	79	75
-36						100	95	91	86	82	78	73
-34						99	94	89	85	81	76	72
-32						97	93	88	84	79	75	71
-30					100	96	91	87	82	78	74	70
-28					99	95	90	86	81	77	73	69
-26					98	94	89	84	80	76	72	68
-24					100	97	92	88	83	79	75	71
-22					100	96	91	86	82	77	73	69
-20					99	94	90	85	80	76	72	67
-18			100	97	93	88	83	79	74	70	65	61
-16			100	96	91	86	82	77	72	68	64	60
-14			98	94	89	85	80	75	71	66	62	57
-12		100	96	92	87	83	78	73	69	64	60	55
-10		99	95	90	85	81	76	71	66	62	58	54
-8	100	97	93	88	83	79	73	68	64	60	56	52
-6	100	95	91	86	81	76	71	66	62	58	54	
-4	98	93	88	83	78	74	69	64	60	56		
-2	95	90	85	81	76	71	67	62	58			
0	92	88	83	78	74	69	65	60				
2	90	85	81	76	72	67	62					
4	87	83	78	74	69	65						
6	85	80	76	71	67							
8	82	78	73	69								
10	79	75	71									
12	77	72										

Figure 5.8.2A - Maximum climb power (FL > 200) - 170 KIAS / M 0.40

- NOTE •

Refer to page 5.8.1 for general conditions

-

### Maximum cruise power (FL < 200)

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE ● : Use preferably recommended cruise power.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°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												
2												100
4												98
6											100	95
8										98		92
10									100	95		89
12								100	97	92		87
14								99	94	89		84
16							100	97	91	86		
18							99	94	88			
20						100	96	91				
22						98	93					
24					100	95						
26				100	97							
28				99								
30			100									
32		100										
34	100											

Figure 5.8.3 - Maximum cruise power (FL < 200)

- NOTE ●

Refer to page 5.8.1 for general conditions

●



Pilot's Operating Handbook

**Maximum cruise power (FL > 200)**

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE ● : Use preferably recommended cruise power.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)												
	200	210	220	230	240	250	260	270	280	290	300	310	
-62													100
-60													100
-58													98
-56													97
-54												100	96
-52												99	94
-50												98	93
-48											100	97	92
-46											100	95	90
-44											99	94	89
-42											97	92	87
-40										100	96	91	86
-38										99	94	89	85
-36										98	93	88	83
-34										100	96	91	86
-32										100	95	90	85
-30										98	93	88	84
-28										97	92	87	82
-26										100	95	90	85
-24										99	94	89	84
-22										97	92	87	82
-20										96	90	85	80
-18										99	94	88	83
-16										100	97	92	86
-14										99	95	89	84
-12										98	93	87	82
-10										100	96	90	85
-8										99	93	88	82
-6										100	95	89	84
-4										99	93	88	82
-2										100	96	90	85
0										98	93	87	82
2										99	94	88	83
4										100	95	90	85
6										99	94	88	83
8										100	95	90	85
10										99	94	88	83
12										100	95	90	85

Figure 5.8.3A - Maximum cruise power (FL > 200)

- NOTE ●

Refer to page 5.8.1 for general conditions

-

**Normal (recommended) cruise power (FL < 200)**

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

● NOTE ● : Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
	100	110	120	130	140	150	160	170	180	190	200	
-24												100
-22												99
-20												100
-18												96
-16												99
-14												94
-12												100
-10												96
-8												99
-6												94
-4												100
-2												99
0												100
2												96
4												99
6												93
8												90
10												95
12												92
14												89
16												86
18												83
20												88
22												85
24												87
26												92
28												95
30												97
32												94
34												96

Figure 5.8.4 - Normal (recommended) cruise power (FL < 200)

● NOTE ●  
Refer to page 5.8.1 for general conditions

Pilot's Operating Handbook

**Normal (recommended) cruise power (FL > 200)**

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

• NOTE • : Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66												100
-64												99
-62												98
-60											100	96
-58											100	95
-56											98	93
-54										100	96	92
-52										100	95	90
-50										98	93	89
-48									100	97	92	87
-46									100	95	91	86
-44									99	94	89	84
-42									97	92	87	83
-40								100	96	91	86	82
-38								99	94	90	85	80
-36								98	93	88	83	79
-34							100	96	92	87	82	78
-32							100	95	90	85	81	76
-30							99	94	89	84	79	75
-28							97	92	87	82	78	73
-26							100	96	91	86	81	76
-24							99	94	89	84	79	74
-22						100	97	92	87	82	77	72
-20						100	95	90	85	80	75	70
-18						98	93	88	83	78	73	68
-16				100	96	91	86	81	76	71	66	61
-14				99	94	89	84	79	73	68	63	59
-12			100	97	92	87	81	76	71	66	61	57
-10			100	95	89	84	78	73	68	64	59	55
-8		100	97	92	86	81	76	71	66	62	57	53
-6		100	94	89	84	79	74	69	64	59	55	
-4	100	97	91	86	81	76	71	66	62	57		
-2	99	94	89	83	79	74	69	64	59			
0	96	91	86	81	76	71	66	62				
2	94	88	83	78	73	69	64					
4	91	85	80	75	71	66						
6	88	83	78	73	68							
8	85	80	75	70								
10	82	77	72									
12	79	74										

Figure 5.8.4A - Normal (recommended) cruise power (FL > 200)

• NOTE •

Refer to page 5.8.1 for general conditions

•

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PIM - Not authorized for operation

## 5.9 - Takeoff distances

The following tables give the takeoff distances for several weight configurations.

All common information applicable to tables (pages 5.9.2 to 5.9.4) are listed below.

Associated conditions :

- Landing gear DN and flaps TO
- TRQ = 100 %
- BLEED switch on AUTO
- Hard, dry and level runway

In table headings :

- GR = Ground roll (in ft)
- D<sub>50</sub> = Takeoff distance (clear to 50 ft) (in ft)

• NOTE •

For OAT < ISA + 30°C, refer to procedure Normal takeoff or Short takeoff in Section 4.4.

For OAT > ISA + 30°C, refer to procedure Takeoff with high OAT (> ISA + 30°C) in Section 4.4.

In SL ISA conditions, nominal Np is of 1985 RPM.

•

Corrections :

- In case of wind, apply the following corrections :
  - Reduce total distances by 10 % every 10 kts of headwind
  - Increase total distances by 30 % every 10 kts 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.

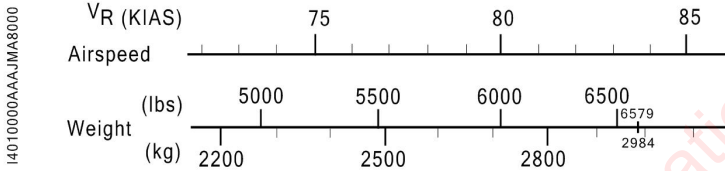
Increase distances by :

- 7 % on hard grass
- 10 % on short grass
- 15 % on wet runway
- 25 % on high grass
- 30 % on slippery runway

**Weight : 5512 lbs (2500 kg)**

Associated condition :

- 15° of attitude after rotation
- Rotation speed choice ( $V_R$ )



Weight : 5512 lbs (2500 kg) At 50 ft = 91 KIAS - 105 MPH IAS									
Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA		
	GR	D50	GR	D50	GR	D50	GR	D50	
0	665	1085	740	1190	780	1255	820	1295	
2000	735	1185	800	1265	850	1340	905	1415	
4000	800	1260	885	1380	935	1460	990	1545	
6000	880	1375	965	1505	1025	1595	1090	1690	
8000	965	1500	1060	1645	1140	1765	1220	1880	
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C		
	GR	D50	GR	D50	GR	D50	GR	D50	
0	865	1365	920	1435	965	1505	1000	1555	
2000	955	1490	1005	1565	1060	1645	1100	1705	
4000	1050	1625	1110	1720	1180	1825	1230	1895	
6000	1165	1800	1240	1910	1320	2020	1380	2100	
8000	1305	2000	1390	2120	1480	2245	1565	2330	

Figure 5.9.1 - Takeoff distances - 5512 lbs (2500 kg)

▲ CAUTION ▲

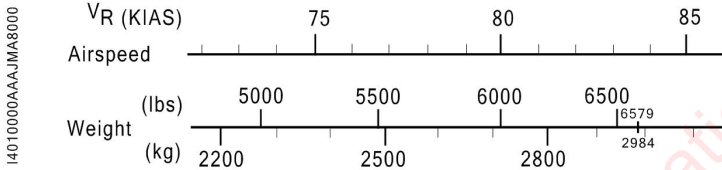
Refer to page 5.9.1 for notes and correction factors.

▲

**Weight : 6579 lbs (2984 kg)**

Associated condition :

- 15° of attitude after rotation
- Rotation speed choice (V<sub>R</sub>)



Weight : 6579 lbs (2984 kg) At 50 ft = 94 KIAS - 108 MPH IAS								
Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1020	1470	1115	1600	1185	1680	1245	1765
2000	1115	1595	1220	1730	1285	1820	1355	1915
4000	1215	1725	1325	1875	1400	1975	1475	2075
6000	1320	1865	1445	2030	1545	2160	1645	2305
8000	1435	2020	1600	2240	1715	2400	1850	2570
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1310	1855	1375	1940	1440	2030	1490	2090
2000	1425	2010	1500	2110	1595	2235	1660	2320
4000	1580	2205	1675	2345	1790	2485	1865	2590
6000	1755	2455	1880	2615	2005	2780	2095	2895
8000	1980	2745	2115	2925	2275	3110	2380	3245

Figure 5.9.2 - Takeoff distances - 6579 lbs (2984 kg)

▲ **CAUTION** ▲

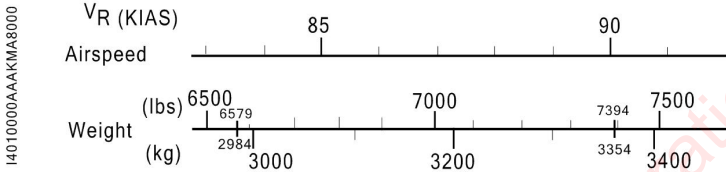
Refer to page 5.9.1 for notes and correction factors.



**Weight : 7394 lbs (3354 kg)**

Associated condition :

- 12°5 of attitude after rotation
- Rotation speed choice (V<sub>R</sub>)



Weight : 7394 lbs (3354 kg) At 50 ft = 99 KIAS - 114 MPH IAS								
Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1440	2020	1560	2175	1645	2275	1725	2380
2000	1555	2170	1690	2335	1770	2445	1860	2560
4000	1685	2325	1820	2505	1910	2630	2045	2785
6000	1810	2500	1970	2710	2130	2930	2290	3135
8000	1960	2695	2220	3045	2410	3265	2590	3490
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1800	2485	1880	2595	1965	2705	2060	2810
2000	1945	2675	2080	2865	2215	3040	2325	3160
4000	2185	3000	2355	3200	2500	3385	2610	3520
6000	2470	3340	2640	3550	2810	3765	2935	3915
8000	2775	3720	2965	3950	3180	4185	3315	4350

Figure 5.9.3 - Takeoff distances - 7394 lbs (3354 kg)

▲ CAUTION ▲

Refer to page 5.9.1 for notes and correction factors.







**5.10 - Climb performance**

**MXCL - Speeds (IAS = 124 KIAS)**

Conditions :

- Maximum climb power TRQ = 100 %
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO and BLEED HI msg OFF

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2885	2870	2855	2845	2830	2810
	2000	2860	2845	2830	2810	2795	2775
	4000	2840	2820	2805	2785	2765	2750
	6000	2810	2790	2770	2750	2735	2710
	8000	2775	2755	2735	2710	2690	2665
6594 lbs (2991 kg)	SL	2440	2425	2410	2400	2380	2365
	2000	2415	2400	2385	2365	2350	2330
	4000	2395	2375	2360	2340	2325	2305
	6000	2365	2345	2330	2310	2290	2270
	8000	2335	2315	2290	2270	2250	2230
7394 lbs (3354 kg)	SL	2080	2065	2050	2040	2020	2005
	2000	2055	2040	2025	2005	1990	1975
	4000	2035	2015	1995	1980	1965	1945
	6000	2005	1985	1970	1950	1930	1910
	8000	1975	1955	1935	1910	1890	1870

Figure 5.10.1 - MXCL - Speeds (IAS = 124 KIAS)

● NOTE ●

In SL ISA conditions, nominal Np is of 1985 RPM.

●

**MXCL - Speeds (IAS = 170 KIAS / M 0.40)**

Conditions :

- Maximum climb power TRQ = 100 %
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40
- BLEED switch on AUTO and BLEED HI msg OFF

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2 420	2 390	2 365	2 335	2 310	2 285
	2000	2 385	2 355	2 325	2 295	2 265	2 235
	4000	2 345	2 315	2 280	2 250	2 220	2 190
	6000	2 305	2 270	2 235	2 205	2 170	2 140
	8000	2 260	2 225	2 190	2 155	2 120	2 085
6594 lbs (2991 kg)	SL	2 075	2 050	2 025	2 000	1 975	1 955
	2000	2 045	2 015	1 990	1 965	1 935	1 910
	4000	2 010	1 985	1 950	1 920	1 895	1 865
	6000	1 975	1 940	1 910	1 880	1 850	1 820
	8000	1 930	1 900	1 870	1 835	1 805	1 770
7394 lbs (3354 kg)	SL	1 800	1 775	1 755	1 730	1 710	1 685
	2000	1 770	1 745	1 720	1 695	1 670	1 645
	4000	1 735	1 710	1 685	1 655	1 630	1 605
	6000	1 705	1 670	1 645	1 615	1 590	1 560
	8000	1 660	1 635	1 605	1 575	1 545	1 515

Figure 5.10.2 - MXCL - Speeds (IAS = 170 KIAS / M 0.40)

• NOTE •

In SL ISA conditions, nominal Np is of 1985 RPM.

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Pilot's Operating Handbook

**MXCL - Time, consumption and climb distance (IAS = 124 KIAS)**

Conditions :

- **ISA - 20°C**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO

● **NOTE** ● : Time, consumption and distance from the 50 ft  
If BLEED HI msg ON, reduce TRQ by 5%. This TRQ reduction will result in :

- Time to climb increased by up to 7 %
- Climb distance increased by up to 7 %
- Fuel consumption increased by up to 5 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	4	3	1.0	1	00:45	5	4	1.2	2	01:00	5	4	1.4	2
4000	01:30	8	6	2.0	3	01:45	9	7	2.4	3	02:00	11	8	2.8	4
6000	02:15	11	9	3.0	4	02:30	13	10	3.5	5	03:00	16	12	4.1	6
8000	03:00	15	12	3.9	6	03:30	18	14	4.6	7	04:00	21	16	5.5	8
10000	03:30	18	14	4.9	8	04:15	22	17	5.7	9	05:00	26	20	6.8	11
12000	04:15	22	17	5.8	9	05:15	26	20	6.8	11	06:00	30	24	8.0	13
14000	05:00	25	20	6.7	11	06:00	30	23	7.9	13	07:15	35	28	9.3	16
16000	05:45	29	23	7.6	13	07:00	34	27	9.0	15	08:15	40	32	10.6	18
18000	06:30	32	25	8.5	15	07:45	38	30	10.0	18	09:15	45	35	11.9	21
20000	07:30	35	28	9.4	17	08:45	42	33	11.1	20	10:30	50	39	13.2	24
22000	08:15	39	30	10.3	19	09:45	46	36	12.2	23	11:30	55	43	14.4	27
24000	09:00	42	33	11.1	21	10:45	50	39	13.2	25	12:45	60	47	15.7	30
26000	09:45	46	36	12.0	24	11:45	54	43	14.3	28	13:45	64	51	17.0	34
28000	10:30	49	38	13.0	26	12:45	58	46	15.4	31	15:00	70	55	18.4	38
30000	11:30	53	41	13.9	29	13:45	63	49	16.6	35	16:30	75	59	19.8	42
31000	12:00	54	43	14.4	31	14:30	65	51	17.2	37	17:15	78	61	20.6	44

Figure 5.10.3 - MXCL - Time, consumption and climb distance (IAS = 124 KIAS) / ISA - 20°C

**MXCL - Time, consumption and climb distance (IAS = 124 KIAS)**

Conditions :

- **ISA**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO

- **NOTE** ● : Time, consumption and distance from the 50 ft  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :
  - Time to climb increased by up to 8 %
  - Climb distance increased by up to 8 %
  - Fuel consumption increased by up to 6 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	4	3	1.0	1	00:45	5	4	1.2	2	01:00	6	4	1.5	2
4000	01:30	8	6	2.1	3	01:45	9	7	2.4	4	02:00	11	9	2.9	4
6000	02:15	12	9	3.1	5	02:30	14	11	3.6	5	03:00	16	13	4.3	6
8000	03:00	15	12	4.1	6	03:30	18	14	4.8	7	04:00	21	17	5.7	9
10000	03:45	19	15	5.0	8	04:15	22	18	5.9	10	05:15	27	21	7.0	11
12000	04:30	23	18	6.0	10	05:15	27	21	7.1	12	06:15	32	25	8.4	14
14000	05:15	26	21	6.9	12	06:15	31	24	8.2	14	07:15	37	29	9.7	17
16000	06:00	30	23	7.9	14	07:00	35	28	9.3	16	08:15	42	33	11.0	19
18000	06:45	33	26	8.8	16	08:00	39	31	10.4	19	09:30	47	37	12.4	22
20000	07:30	37	29	9.7	18	09:00	44	34	11.5	21	10:45	52	41	13.7	26
22000	08:15	40	32	10.6	20	10:00	48	38	12.7	24	11:45	57	45	15.1	29
24000	09:15	44	34	11.6	23	11:00	52	41	13.8	27	13:00	62	49	16.5	32
26000	10:00	47	37	12.5	25	12:00	57	44	14.9	30	14:15	68	53	17.9	37
28000	11:00	51	40	13.5	28	13:15	61	48	16.2	34	16:00	73	58	19.4	41
30000	12:15	55	43	14.6	32	14:30	66	52	17.5	39	17:45	80	63	21.1	47
31000	12:45	57	45	15.1	34	15:30	69	54	18.2	41	18:45	83	65	21.9	51

Figure 5.10.4 - MXCL - Time, consumption and climb distance (IAS = 124 KIAS) / ISA

Pilot's Operating Handbook

**MXCL - Time, consumption and climb distance (IAS = 124 KIAS)**

Conditions :

- **ISA + 20°C**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO

● **NOTE** ● : Time, consumption and distance from the 50 ft  
If BLEED HI msg ON, reduce TRQ by 5%. This TRQ reduction will result in :

- Time to climb increased by up to 10 %
- Climb distance increased by up to 10 %
- Fuel consumption increased by up to 7 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2 000	00:45	4	3	1.1	2	00:45	5	4	1.3	2	01:00	6	4	1.5	2
4 000	01:30	8	6	2.1	3	01:45	10	8	2.5	4	02:00	11	9	3.0	4
6 000	02:15	12	9	3.2	5	02:30	14	11	3.8	6	03:00	17	13	4.5	7
8 000	03:00	16	12	4.2	7	03:30	19	15	5.0	8	04:15	22	17	5.9	9
10 000	03:45	20	15	5.2	8	04:30	23	18	6.2	10	05:15	28	22	7.3	12
12 000	04:30	23	18	6.2	10	05:15	28	22	7.3	12	06:15	33	26	8.7	15
14 000	05:15	27	21	7.2	12	06:15	32	25	8.5	15	07:30	38	30	10.1	18
16 000	06:00	31	24	8.1	14	07:15	37	29	9.7	17	08:30	44	34	11.5	21
18 000	06:45	34	27	9.1	17	08:15	41	32	10.8	20	09:45	49	38	12.9	24
20 000	07:45	38	30	10.1	19	09:15	46	36	12.0	23	11:00	54	43	14.4	27
22 000	08:30	42	33	11.1	22	10:15	50	39	13.2	26	12:15	60	47	15.9	31
24 000	09:45	46	36	12.1	25	11:30	55	43	14.5	30	14:00	66	52	17.5	36
26 000	10:45	50	39	13.2	28	13:00	60	47	15.9	34	15:45	73	57	19.2	42
28 000	12:00	54	43	14.4	33	14:30	66	51	17.3	40	17:45	80	63	21.0	49
30 000	13:30	59	46	15.6	38	16:30	72	56	18.9	46	20:15	88	69	23.2	58
31 000	14:15	62	48	16.3	41	17:30	75	59	19.8	50	21:45	92	72	24.4	63

Figure 5.10.5 - MXCL - Time, consumption and climb distance (IAS = 124 KIAS) / ISA + 20°C

### MXCL - Time, consumption and climb distance (IAS = 170 KIAS / M 0.40)

Conditions :

- ISA - 20°C
- Maximum climb power
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40 - BLEED switch on AUTO

● NOTE ● : Time, consumption and distance from the 50 ft  
If BLEED HI msg ON, reduce TRQ by 5%. This TRQ reduction will result in :

- Time to climb increased by up to 10 %
- Climb distance increased by up to 10 %
- Fuel consumption increased by up to 7 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	4	3	1.2	2	01:00	5	4	1.4	3	01:00	6	5	1.6	3
4000	01:45	9	7	2.3	5	02:00	10	8	2.7	5	02:15	12	9	3.1	6
6000	02:30	13	10	3.5	7	03:00	15	12	4.0	8	03:30	18	14	4.7	10
8000	03:30	17	14	4.6	10	04:00	20	16	5.4	11	04:30	23	18	6.2	13
10000	04:15	22	17	5.7	12	05:00	25	20	6.7	15	05:45	29	23	7.7	17
12000	05:15	26	20	6.8	15	06:00	30	24	7.9	18	07:00	35	27	9.2	21
14000	06:00	30	24	7.9	18	07:00	35	27	9.3	22	08:15	41	32	10.8	25
16000	07:00	34	27	9.1	22	08:15	40	31	10.6	25	09:30	47	37	12.3	29
18000	08:00	39	30	10.2	25	09:15	45	35	11.9	29	11:00	52	41	13.8	34
20000	09:00	43	34	11.3	29	10:30	50	39	13.2	33	12:15	58	46	15.4	39
22000	10:00	47	37	12.4	32	11:45	55	43	14.6	38	13:45	64	50	17.0	44
24000	11:00	51	40	13.6	36	13:00	60	47	15.9	43	15:00	70	55	18.6	50
26000	12:00	55	43	14.6	40	14:00	65	51	17.0	47	16:30	76	59	20.0	55
28000	12:45	59	46	15.5	43	15:00	69	54	18.2	51	17:30	81	63	21.3	59
30000	13:45	62	49	16.5	46	16:00	73	57	19.3	55	19:00	86	67	22.7	64
31000	14:15	64	50	16.9	48	16:45	75	59	19.9	57	19:45	89	70	23.4	67

Figure 5.10.6 - MXCL - Time, consumption and climb distance  
(IAS = 170 KIAS / M 0.40) / ISA - 20°C

Pilot's Operating Handbook

**MXCL - Time, consumption and climb distance  
(IAS = 170 KIAS / M 0.40)**

Conditions :

- **ISA**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40 - BLEED switch on AUTO

● **NOTE** ● : Time, consumption and distance from the 50 ft  
If BLEED HI msg ON, reduce TRQ by 5%. This TRQ reduction will result in :

- Time to climb increased by up to 11 %
- Climb distance increased by up to 11 %
- Fuel consumption increased by up to 8 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	5	4	1.2	2	01:00	5	4	1.4	3	01:15	6	5	1.7	3
4000	01:45	9	7	2.4	5	02:00	11	8	2.8	6	02:15	12	10	3.3	7
6000	02:30	14	11	3.6	8	03:00	16	13	4.2	9	03:30	19	15	4.9	10
8000	03:30	18	14	4.8	10	04:00	21	17	5.6	12	04:45	25	19	6.5	14
10000	04:30	23	18	6.0	13	05:15	26	21	7.0	16	06:00	31	24	8.1	18
12000	05:15	27	21	7.2	16	06:15	32	25	8.4	19	07:15	37	29	9.7	22
14000	06:15	32	25	8.4	20	07:15	37	29	9.8	23	08:30	43	34	11.4	27
16000	07:15	36	28	9.5	23	08:30	42	33	11.2	27	10:00	49	39	13.0	32
18000	08:15	41	32	10.7	27	09:45	48	37	12.6	32	11:15	56	44	14.7	37
20000	09:15	45	36	11.9	31	11:00	53	42	14.0	36	12:45	62	49	16.4	42
22000	10:30	50	39	13.2	35	12:15	58	46	15.4	41	14:15	68	54	18.1	48
24000	11:30	54	43	14.4	39	13:30	64	50	16.9	46	15:45	75	59	19.8	54
26000	12:30	59	46	15.5	43	14:45	69	54	18.2	51	17:15	81	63	21.3	60
28000	13:30	63	49	16.5	48	16:00	74	58	19.5	56	18:45	87	68	22.9	66
30000	14:45	67	52	17.6	52	17:15	79	62	20.8	62	20:30	93	73	24.6	73
31000	15:15	69	54	18.2	55	18:15	81	64	21.5	65	21:30	96	76	25.5	77

Figure 5.10.7 - MXCL - Time, consumption and climb distance  
(IAS = 170 KIAS / M 0.40) / ISA

## MXCL - Time, consumption and climb distance (IAS = 170 KIAS / M 0.40)

Conditions :

- ISA + 20°C
- Maximum climb power
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40 - BLEED switch on AUTO

● NOTE ● : Time, consumption and distance from the 50 ft  
If BLEED HI msg ON, reduce TRQ by 5%. This TRQ reduction will result in :

- Time to climb increased by up to 15 %
- Climb distance increased by up to 16 %
- Fuel consumption increased by up to 12 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	5	4	1.3	3	01:00	6	4	1.5	3	01:15	7	5	1.7	3
4000	01:45	10	8	2.6	5	02:00	11	9	3.0	6	02:30	13	10	3.5	7
6000	02:45	14	11	3.8	8	03:00	17	13	4.5	9	03:30	20	15	5.2	11
8000	03:30	19	15	5.1	11	04:15	22	18	5.9	13	05:00	26	20	6.9	15
10000	04:30	24	19	6.3	14	05:15	28	22	7.4	17	06:15	33	26	8.6	19
12000	05:30	29	22	7.5	18	06:30	33	26	8.8	21	07:30	39	31	10.3	24
14000	06:30	33	26	8.8	21	07:30	39	31	10.3	25	09:00	46	36	12.0	29
16000	07:30	38	30	10.1	25	08:45	45	35	11.8	29	10:15	52	41	13.8	34
18000	08:30	43	34	11.3	29	10:00	50	40	13.3	34	11:45	59	46	15.6	40
20000	09:45	48	38	12.7	33	11:30	56	44	14.8	39	13:15	66	52	17.4	46
22000	11:00	53	42	14.1	38	13:00	63	49	16.5	45	15:15	74	58	19.5	53
24000	12:30	59	46	15.6	45	14:45	70	55	18.4	53	17:15	82	64	21.7	62
26000	13:45	64	50	17.0	51	16:30	76	60	20.1	60	19:30	90	71	23.8	72
28000	15:30	70	55	18.4	57	18:15	83	65	21.9	68	22:00	99	77	26.1	82
30000	17:15	75	59	19.8	64	20:30	90	70	23.7	77	25:00	108	85	28.5	94
31000	18:00	78	61	20.6	68	21:45	93	73	24.7	82	26:30	113	89	29.8	101

Figure 5.10.8 - MXCL - Time, consumption and climb distance  
(IAS = 170 KIAS / M 0.40) / ISA + 20°C



Pilot's Operating Handbook

**Climb performance after go-around**

Conditions :

- Landing gear DN and flaps LDG
- **IAS = 90 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
6594 lbs (2991 kg)	SL	1635	1610	1590	1565	1545	1525	1505
	2000	1615	1580	1555	1535	1510	1490	1470
	4000	1585	1545	1525	1500	1480	1455	1435
	6000	1555	1515	1490	1465	1440	1420	1395
	8000	1520	1480	1455	1430	1400	1375	1345

Conditions :

- Landing gear DN and flaps LDG
- **IAS = 95 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
7394 lbs (3354 kg)	SL	1350	1320	1295	1275	1255	1235	1215
	2000	1325	1290	1265	1245	1225	1205	1180
	4000	1295	1255	1235	1210	1190	1165	1140
	6000	1265	1225	1200	1175	1150	1120	1095
	8000	1230	1190	1160	1135	1105	1075	1050

Figure 5.10.9 - Climb performance after go-around

### Climb performance - Flaps TO

Conditions :

- Landing gear UP and flaps TO
- **IAS = 110 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
6594 lbs (2991 kg)	SL	2295	2275	2260	2250	2240	2225	2215
	2000	2280	2260	2245	2230	2220	2210	2190
	4000	2265	2245	2230	2215	2200	2180	2165
	6000	2250	2225	2210	2190	2175	2155	2135
	8000	2235	2205	2185	2165	2145	2130	2110

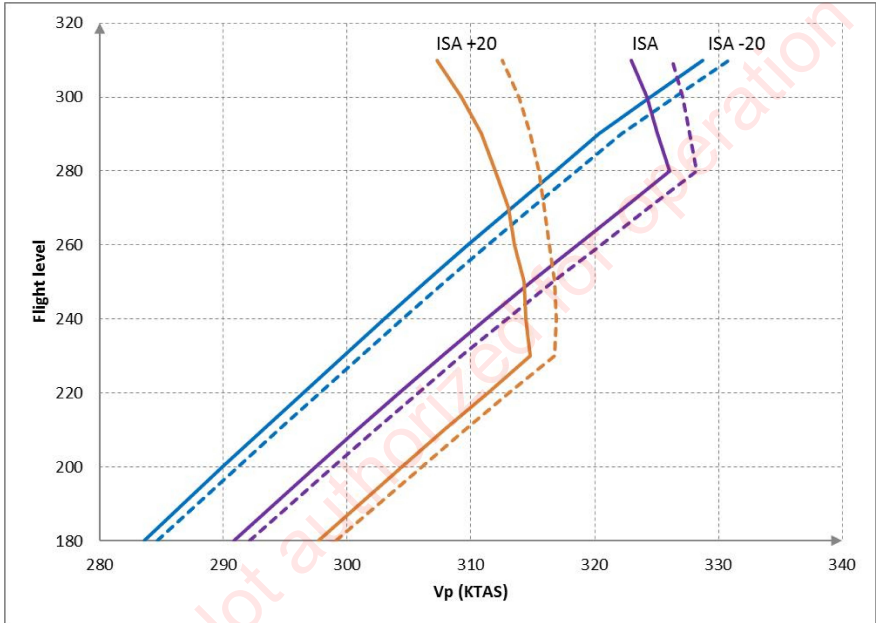
Conditions:

- Landing gear UP and flaps TO
- **IAS = 115 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
7394 lbs (3354 kg)	SL	1985	1965	1955	1940	1930	1915	1900
	2000	1970	1950	1940	1925	1910	1890	1875
	4000	1955	1935	1920	1900	1885	1865	1850
	6000	1940	1910	1895	1875	1860	1840	1825
	8000	1915	1890	1870	1850	1835	1815	1795

Figure 5.10.10 - Climb performance - Flaps TO

Pilot's Operating Handbook

**5.11 - Cruise performance****Maximum cruise**

————— 7100 lbs  
- - - - - 6300 lbs

Figure 5.11.1 - Cruise performance (Maximum cruise)

## Maximum cruise

Conditions :

- **ISA - 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	325	255	85.9	240	236	239	236	239	235
5000	-14	100	299	234	78.9	235	248	235	248	234	247
10000	-24	100	278	218	73.3	230	262	230	261	229	260
15000	-34	100	265	208	70.1	226	276	225	275	224	275
18000	-40	100	256	201	67.7	223	285	222	285	221	284
20000	-44	100	251	197	66.2	221	292	220	291	219	290
21000	-46	100	248	195	65.6	220	295	219	294	218	293
22000	-48	100	246	193	65.0	219	299	218	298	217	296
23000	-50	100	244	192	64.5	218	302	217	301	216	300
24000	-52	100	243	190	64.1	217	306	216	304	215	303
25000	-54	100	241	189	63.7	216	309	215	308	214	306
26000	-56	100	240	188	63.3	215	313	214	311	213	310
27000	-57	100	239	188	63.2	214	316	213	315	212	313
28000	-59	100	238	187	63.0	213	320	212	318	211	317
29000	-61	100	238	187	62.9	212	324	211	322	209	320
30000	-63	100	238	187	62.8	211	328	210	326	209	324
31000	-65	100	238	187	63.0	210	332	209	331	208	329

Figure 5.11.2 - Cruise performance  
Maximum cruise / ISA - 20°C

Pilot's Operating Handbook

**Maximum cruise**

Conditions :

- **ISA - 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** • : Use preferably recommended cruise power.  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	329	258	86.9	238	239	238	239	237	238
5000	-4	100	302	237	79.7	234	252	233	251	233	250
10000	-14	100	281	220	74.2	229	265	228	265	228	264
15000	-24	100	268	210	70.8	224	280	223	279	222	278
18000	-30	100	259	203	68.4	221	289	220	288	219	287
20000	-34	100	253	199	66.9	219	296	218	295	217	294
21000	-36	100	251	197	66.2	218	299	217	298	216	297
22000	-38	100	249	195	65.7	217	303	216	302	215	300
23000	-40	100	247	194	65.1	216	306	215	305	214	304
24000	-42	100	245	192	64.7	215	310	214	309	213	307
25000	-44	100	243	191	64.3	214	314	213	312	212	311
26000	-46	100	242	190	63.9	213	317	212	316	211	314
27000	-47	100	242	190	63.8	212	321	211	320	210	318
28000	-49	100	241	189	63.6	211	325	210	323	209	322
29000	-51	100	240	189	63.5	210	329	209	328	208	326
30000	-53	100	239	188	63.2	209	333	208	332	207	329
31000	-55	97	230	181	60.8	205	333	204	331	202	328

Figure 5.11.3 - Cruise performance  
Maximum cruise / ISA - 10°C

### Maximum cruise

Conditions :

- **ISA - 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	331	259	87.3	238	240	237	240	237	240
5000	1	100	304	238	80.2	233	253	232	253	232	252
10000	-9	100	282	221	74.5	228	267	227	266	227	265
15000	-19	100	269	211	71.2	223	282	222	281	222	280
18000	-25	100	260	204	68.7	220	291	219	290	218	289
20000	-29	100	254	200	67.2	218	298	217	297	216	296
21000	-31	100	252	198	66.5	217	301	216	300	215	299
22000	-33	100	250	196	66.0	216	305	215	304	214	302
23000	-35	100	248	195	65.5	215	308	214	307	213	306
24000	-37	100	246	193	65.0	214	312	213	311	212	309
25000	-39	100	244	192	64.6	213	316	212	315	211	313
26000	-41	100	243	191	64.2	212	320	211	318	210	316
27000	-42	100	243	191	64.1	211	323	210	322	209	320
28000	-44	100	242	190	64.0	210	328	209	326	208	324
29000	-46	100	242	190	63.8	210	332	209	330	207	328
30000	-48	97	233	183	61.5	206	332	205	330	203	327
31000	-50	94	224	176	59.3	202	332	200	329	199	326

Figure 5.11.4 - Cruise performance  
Maximum cruise / ISA - 5°C

Pilot's Operating Handbook

**Maximum cruise**

Conditions :

- **ISA**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Use preferably recommended cruise power.  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	333	261	87.9	237	242	237	242	236	241
5000	6	100	305	240	80.7	232	255	232	254	231	253
10000	-4	100	284	223	74.9	227	268	227	268	226	267
15000	-14	100	271	213	71.5	222	283	222	283	221	282
18000	-20	100	261	205	69.0	219	293	219	292	218	291
20000	-24	100	256	201	67.6	217	300	216	299	215	297
21000	-26	100	253	199	66.9	216	303	215	302	214	301
22000	-28	100	251	197	66.3	215	307	214	306	213	304
23000	-30	100	249	195	65.8	214	310	213	309	212	308
24000	-32	100	247	194	65.3	213	314	212	313	211	311
25000	-34	100	246	193	64.9	212	318	211	317	210	315
26000	-36	100	244	192	64.5	211	322	210	320	209	319
27000	-37	100	244	191	64.4	210	326	209	324	208	322
28000	-39	100	242	190	64.1	210	330	208	328	207	326
29000	-41	97	234	184	61.8	206	330	204	328	203	325
30000	-43	94	226	177	59.7	202	329	200	327	199	324
31000	-45	90	218	171	57.5	198	329	196	326	194	323

Figure 5.11.5 - Cruise performance  
Maximum cruise / ISA

**Maximum cruise**

Conditions :

- **ISA + 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● **NOTE** ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	334	263	88.4	236	243	236	243	235	242
5000	11	100	307	241	81.1	231	256	231	256	230	255
10000	1	100	285	224	75.3	226	270	226	269	225	269
15000	-9	100	272	214	72.0	221	285	221	284	220	283
18000	-15	100	263	206	69.4	218	295	218	294	217	293
20000	-19	100	257	202	67.9	216	302	216	301	215	299
21000	-21	100	254	200	67.2	215	305	215	304	213	303
22000	-23	100	252	198	66.6	214	309	214	308	212	306
23000	-25	100	250	196	66.1	213	312	213	311	211	309
24000	-27	100	248	195	65.7	212	316	212	315	210	313
25000	-29	100	247	194	65.2	211	320	210	319	209	317
26000	-31	100	245	192	64.8	210	324	209	322	208	320
27000	-32	100	244	192	64.6	210	328	209	326	207	324
28000	-34	97	236	185	62.3	206	328	204	326	203	323
29000	-36	93	227	178	60.0	202	327	200	325	199	322
30000	-38	90	219	172	57.9	198	327	196	324	194	321
31000	-40	87	211	166	55.8	194	326	192	323	190	320

Figure 5.11.6 - Cruise performance  
Maximum cruise / ISA + 5°C



Pilot's Operating Handbook

**Maximum cruise**

Conditions :

- **ISA + 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** • : Use preferably recommended cruise power.  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	336	264	88.9	236	245	235	244	235	244
5000	16	100	309	242	81.6	231	258	230	257	230	256
10000	6	100	287	225	75.7	226	272	225	271	224	270
15000	-4	100	274	215	72.3	221	287	220	286	219	285
18000	-10	100	264	207	69.7	218	297	217	296	216	294
20000	-14	100	258	203	68.3	216	303	215	302	214	301
21000	-16	100	256	201	67.6	215	307	214	306	213	304
22000	-18	100	254	199	67.0	214	311	213	309	211	308
23000	-20	100	252	197	66.5	212	314	212	313	210	311
24000	-22	100	250	196	66.0	212	318	211	317	209	315
25000	-24	100	248	195	65.5	211	322	210	320	208	319
26000	-26	100	246	193	65.1	210	326	209	325	207	323
27000	-27	97	238	187	62.8	206	325	204	324	203	321
28000	-29	93	229	180	60.5	202	325	200	323	198	320
29000	-31	90	221	173	58.3	198	325	196	322	194	319
30000	-33	86	213	167	56.2	194	324	192	321	190	317
31000	-35	83	205	161	54.1	190	323	188	320	186	316

Figure 5.11.7 - Cruise performance  
Maximum cruise / ISA + 10°C

## Maximum cruise

Conditions :

- **ISA + 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	340	267	89.8	234	247	234	247	233	246
5000	26	100	312	245	82.5	229	261	229	260	228	259
10000	16	100	290	227	76.5	224	275	224	274	223	273
15000	6	100	276	217	73.0	219	290	218	289	217	288
18000	0	100	266	209	70.4	216	300	215	299	214	298
20000	-4	100	261	205	69.0	214	307	213	306	212	304
21000	-6	100	258	203	68.3	213	311	212	309	211	308
22000	-8	100	256	201	67.6	212	314	211	313	210	311
23000	-10	100	254	200	67.1	211	318	210	317	209	315
24000	-12	98	246	193	65.0	208	319	206	317	205	314
25000	-14	95	238	187	62.8	204	319	203	317	201	314
26000	-16	92	230	180	60.7	200	318	199	316	197	314
27000	-17	88	222	174	58.6	197	318	195	316	193	313
28000	-19	85	214	168	56.6	193	318	192	316	189	312
29000	-21	82	207	162	54.6	190	318	188	315	185	311
30000	-23	79	199	156	52.7	186	317	184	314	181	309
31000	-25	76	192	151	50.7	182	316	180	313	177	307

Figure 5.11.8 - Cruise performance  
Maximum cruise / ISA + 20°C

Pilot's Operating Handbook

**Normal cruise (Recommended)**

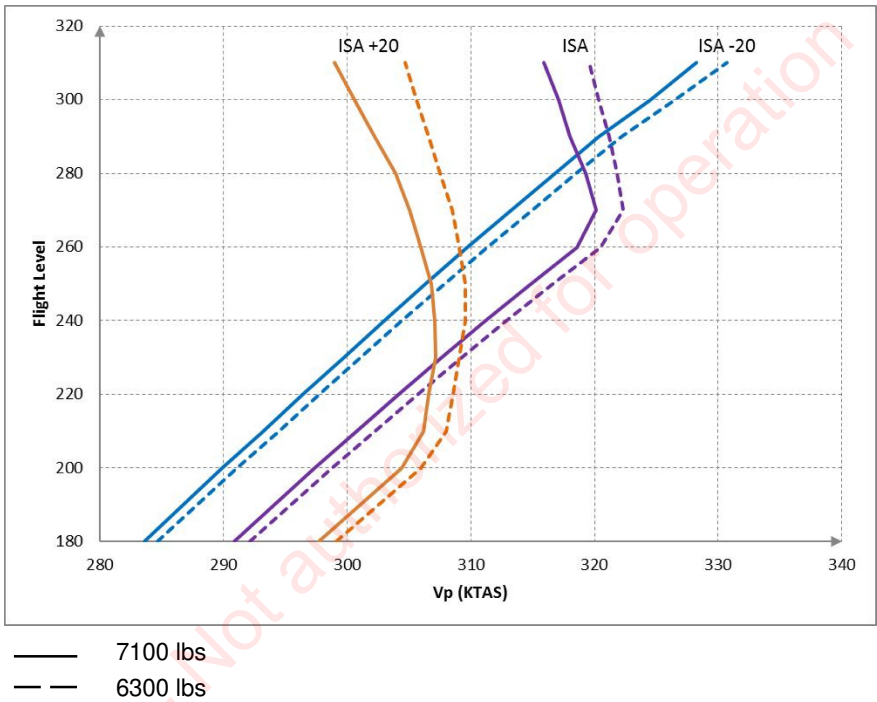


Figure 5.11.9 - Cruise performance (Recommended cruise)

### Normal cruise (Recommended)

Conditions :

- **ISA - 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** • : Power recommended by PRATT & WHITNEY CANADA  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	325	255	85.9	240	236	239	236	239	235
5000	-14	100	299	234	78.9	235	248	235	248	234	247
10000	-24	100	278	218	73.3	230	262	230	261	229	260
15000	-34	100	265	208	70.1	226	276	225	275	224	275
18000	-40	100	256	201	67.7	223	285	222	285	221	284
20000	-44	100	251	197	66.2	221	292	220	291	219	290
21000	-46	100	248	195	65.6	220	295	219	294	218	293
22000	-48	100	246	193	65.0	219	299	218	298	217	296
23000	-50	100	244	192	64.5	218	302	217	301	216	300
24000	-52	100	243	190	64.1	217	306	216	304	215	303
25000	-54	100	241	189	63.7	216	309	215	308	214	306
26000	-56	100	240	188	63.3	215	313	214	311	213	310
27000	-57	100	239	188	63.2	214	316	213	315	212	313
28000	-59	100	238	187	63.0	213	320	212	318	211	317
29000	-61	100	238	187	62.9	212	324	211	322	209	320
30000	-63	100	238	187	62.8	211	328	210	326	209	324
31000	-65	100	238	187	62.9	210	332	209	331	208	328

Figure 5.11.10 - Cruise performance  
Normal cruise / ISA - 20°C

Pilot's Operating Handbook

**Normal cruise (Recommended)**

Conditions :

- **ISA - 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Power recommended by PRATT & WHITNEY CANADA  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	329	258	86.9	238	239	238	239	237	238
5000	-4	100	302	237	79.7	234	252	233	251	233	250
10000	-14	100	281	220	74.2	229	265	228	265	228	264
15000	-24	100	268	210	70.8	224	280	223	279	222	278
18000	-30	100	259	203	68.4	221	289	220	288	219	287
20000	-34	100	253	199	66.9	219	296	218	295	217	294
21000	-36	100	251	197	66.2	218	299	217	298	216	297
22000	-38	100	249	195	65.7	217	303	216	302	215	300
23000	-40	100	247	194	65.1	216	306	215	305	214	304
24000	-42	100	245	192	64.7	215	310	214	309	213	307
25000	-44	100	243	191	64.3	214	314	213	312	212	311
26000	-46	100	242	190	63.9	213	317	212	316	211	314
27000	-47	100	242	190	63.8	212	321	211	320	210	318
28000	-49	100	241	189	63.6	211	325	210	323	209	322
29000	-51	100	238	187	62.9	210	328	209	327	207	324
30000	-53	96	230	180	60.7	206	328	204	326	203	323
31000	-55	93	222	174	58.6	202	328	200	325	198	322

Figure 5.11.11 - Cruise performance  
Normal cruise / ISA - 10°C

### Normal cruise (Recommended)

Conditions :

- **ISA - 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Power recommended by PRATT & WHITNEY CANADA  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	331	259	87.3	238	240	237	240	237	240
5000	1	100	304	238	80.2	233	253	232	253	232	252
10000	-9	100	282	221	74.5	228	267	227	266	227	265
15000	-19	100	269	211	71.2	223	282	222	281	222	280
18000	-25	100	260	204	68.7	220	291	219	290	218	289
20000	-29	100	254	200	67.2	218	298	217	297	216	296
21000	-31	100	252	198	66.5	217	301	216	300	215	299
22000	-33	100	250	196	66.0	216	305	215	304	214	302
23000	-35	100	248	195	65.5	215	308	214	307	213	306
24000	-37	100	246	193	65.0	214	312	213	311	212	309
25000	-39	100	244	192	64.6	213	316	212	315	211	313
26000	-41	100	243	191	64.2	212	320	211	318	210	316
27000	-42	100	243	191	64.1	211	323	210	322	209	320
28000	-44	100	239	188	63.2	210	326	208	324	207	322
29000	-46	96	231	181	61.0	206	326	204	324	202	321
30000	-48	93	223	175	58.9	202	325	200	323	198	320
31000	-50	89	215	169	56.8	198	325	196	322	194	319

Figure 5.11.12 - Cruise performance  
Normal cruise / ISA - 5°C

Pilot's Operating Handbook

**Normal cruise (Recommended)**

Conditions :

- **ISA**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Power recommended by PRATT & WHITNEY CANADA  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	333	261	87.9	237	242	237	242	236	241
5000	6	100	305	240	80.7	232	255	232	254	231	253
10000	-4	100	284	223	74.9	227	268	227	268	226	267
15000	-14	100	271	213	71.5	222	283	222	283	221	282
18000	-20	100	261	205	69.0	219	293	219	292	218	291
20000	-24	100	256	201	67.6	217	300	216	299	215	297
21000	-26	100	253	199	66.9	216	303	215	302	214	301
22000	-28	100	251	197	66.3	215	307	214	306	213	304
23000	-30	100	249	195	65.8	214	310	213	309	212	308
24000	-32	100	247	194	65.3	213	314	212	313	211	311
25000	-34	100	246	193	64.9	212	318	211	317	210	315
26000	-36	100	244	192	64.5	211	322	210	320	209	319
27000	-37	99	241	189	63.6	209	324	208	322	207	320
28000	-39	96	232	182	61.4	205	324	204	322	202	319
29000	-41	92	224	176	59.2	201	323	200	321	198	318
30000	-43	89	216	170	57.0	198	323	196	320	194	317
31000	-45	86	208	164	55.0	194	322	192	320	190	316

Figure 5.11.13 - Cruise performance  
Normal cruise / ISA

### Normal cruise (Recommended)

Conditions :

- **ISA + 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Power recommended by PRATT & WHITNEY CANADA  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	334	263	88.4	236	243	236	243	235	242
5000	11	100	307	241	81.1	231	256	231	256	230	255
10000	1	100	285	224	75.3	226	270	226	269	225	269
15000	-9	100	272	214	72.0	221	285	221	284	220	283
18000	-15	100	263	206	69.4	218	295	218	294	217	293
20000	-19	100	257	202	67.9	216	302	216	301	215	299
21000	-21	100	254	200	67.2	215	305	215	304	213	303
22000	-23	100	252	198	66.6	214	309	214	308	212	306
23000	-25	100	250	196	66.1	213	312	213	311	211	309
24000	-27	100	248	195	65.7	212	316	212	315	210	313
25000	-29	100	247	194	65.2	211	320	210	319	209	317
26000	-31	99	242	190	64.0	209	322	208	320	207	318
27000	-32	96	234	184	61.8	205	322	204	320	202	317
28000	-34	92	226	177	59.6	202	321	200	319	198	316
29000	-36	89	217	171	57.4	198	321	196	319	194	315
30000	-38	85	209	164	55.3	194	320	192	318	190	314
31000	-40	82	202	158	53.3	190	320	188	317	186	313

Figure 5.11.14 - Cruise performance  
Normal cruise / ISA + 5°C



Pilot's Operating Handbook

## Normal cruise (Recommended)

Conditions :

- **ISA + 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	336	264	88.9	236	245	235	244	235	244
5000	16	100	309	242	81.6	231	258	230	257	230	256
10000	6	100	287	225	75.7	226	272	225	271	224	270
15000	-4	100	274	215	72.3	221	287	220	286	219	285
18000	-10	100	264	207	69.7	218	297	217	296	216	294
20000	-14	100	258	203	68.3	216	303	215	302	214	301
21000	-16	100	256	201	67.6	215	307	214	306	213	304
22000	-18	100	254	199	67.0	214	311	213	309	211	308
23000	-20	100	252	197	66.5	212	314	212	313	210	311
24000	-22	100	250	196	66.0	212	318	211	317	209	315
25000	-24	99	244	192	64.6	209	320	208	318	207	316
26000	-26	96	236	185	62.3	205	320	204	318	203	316
27000	-27	92	227	178	60.1	202	319	200	317	198	315
28000	-29	89	219	172	57.9	198	319	196	317	194	313
29000	-31	85	211	166	55.8	194	318	192	316	190	312
30000	-33	82	203	160	53.7	190	318	188	315	186	311
31000	-35	79	196	154	51.7	186	317	184	313	182	309

Figure 5.11.15 - Cruise performance  
Normal cruise / ISA + 10°C

### Normal cruise (Recommended)

Conditions :

- **ISA + 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Power recommended by PRATT & WHITNEY CANADA  
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	340	267	89.8	234	247	234	247	233	246
5000	26	100	312	245	82.5	229	261	229	260	228	259
10000	16	100	290	227	76.5	224	275	224	274	223	273
15000	6	100	276	217	73.0	219	290	218	289	217	288
18000	0	100	266	209	70.4	216	300	215	299	214	298
20000	-4	100	261	205	69.0	214	307	213	306	212	304
21000	-6	100	256	201	67.6	212	309	211	308	210	306
22000	-8	97	248	195	65.6	209	310	208	309	206	307
23000	-10	95	241	189	63.7	206	311	205	309	203	307
24000	-12	92	234	184	61.8	203	311	201	310	200	307
25000	-14	89	226	178	59.8	199	312	198	310	196	307
26000	-16	86	219	172	57.7	196	311	194	309	192	306
27000	-17	83	211	166	55.7	192	311	190	308	188	305
28000	-19	80	203	160	53.7	188	310	187	308	184	304
29000	-21	77	196	154	51.8	185	310	183	307	180	302
30000	-23	74	189	148	50.0	181	309	179	306	176	301
31000	-25	72	183	143	48.2	178	309	175	305	172	299

Figure 5.11.16 - Cruise performance  
Normal cruise / ISA + 20°C

Pilot's Operating Handbook

**Long range cruise (5500 lbs - 2495 kg)**

Conditions :

- AT not engaged
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : If AT is engaged, TRQ setting is 50 % everywhere.

Legend :

OAT : °C      IAS : KIAS  
 FF : USG/h  
 FF : kg/h      TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C		ISA - 10°C		ISA		ISA + 10°C		ISA + 20°C	
15000	38	<b>-34</b>	<b>153</b>	<b>-24</b>	<b>152</b>	<b>-14</b>	<b>150</b>	<b>-4</b>	<b>148</b>	<b>6</b>	<b>147</b>
		40.7		41.2		41.4		41.6		42.2	
		121	<b>189</b>	122	<b>192</b>	123	<b>193</b>	124	<b>194</b>	125	<b>197</b>
18000	39	<b>-40</b>	<b>150</b>	<b>-30</b>	<b>149</b>	<b>-20</b>	<b>148</b>	<b>-10</b>	<b>147</b>	<b>0</b>	<b>146</b>
		38.2		38.7		39.2		39.7		40.2	
		113	<b>194</b>	115	<b>197</b>	116	<b>200</b>	118	<b>203</b>	119	<b>205</b>
19000	39	<b>-42</b>	<b>149</b>	<b>-32</b>	<b>148</b>	<b>-22</b>	<b>147</b>	<b>-12</b>	<b>145</b>	<b>-2</b>	<b>143</b>
		37.4		37.9		38.4		38.7		38.9	
		111	<b>196</b>	113	<b>199</b>	114	<b>202</b>	115	<b>203</b>	116	<b>204</b>
20000	39	<b>-44</b>	<b>150</b>	<b>-34</b>	<b>148</b>	<b>-24</b>	<b>147</b>	<b>-14</b>	<b>146</b>	<b>-4</b>	<b>144</b>
		37.0		37.3		37.9		38.4		38.7	
		110	<b>201</b>	111	<b>202</b>	112	<b>205</b>	114	<b>208</b>	115	<b>209</b>
21000	39	<b>-46</b>	<b>148</b>	<b>-36</b>	<b>147</b>	<b>-26</b>	<b>146</b>	<b>-16</b>	<b>145</b>	<b>-6</b>	<b>144</b>
		36.0		36.6		37.1		37.6		38.2	
		107	<b>201</b>	109	<b>204</b>	110	<b>207</b>	112	<b>210</b>	113	<b>213</b>
22000	39	<b>-48</b>	<b>147</b>	<b>-38</b>	<b>146</b>	<b>-28</b>	<b>145</b>	<b>-18</b>	<b>143</b>	<b>-8</b>	<b>142</b>
		35.3		35.8		36.4		36.6		37.2	
		105	<b>203</b>	106	<b>206</b>	108	<b>209</b>	109	<b>211</b>	111	<b>214</b>
23000	39	<b>-50</b>	<b>146</b>	<b>-40</b>	<b>145</b>	<b>-30</b>	<b>144</b>	<b>-20</b>	<b>142</b>	<b>-10</b>	<b>141</b>
		34.5		35.1		35.6		35.9		36.4	
		103	<b>205</b>	104	<b>209</b>	106	<b>212</b>	107	<b>213</b>	108	<b>216</b>
24000	40	<b>-52</b>	<b>146</b>	<b>-42</b>	<b>145</b>	<b>-32</b>	<b>144</b>	<b>-22</b>	<b>142</b>	<b>-12</b>	<b>141</b>
		34.1		34.6		35.2		35.4		36.0	
		101	<b>209</b>	103	<b>212</b>	104	<b>215</b>	105	<b>217</b>	107	<b>219</b>

Figure 5.11.17 (1/2) - Cruise performance  
 Long range cruise (5500 lbs - 2495 kg) (Altitude < 24000 ft)

### Long range cruise (5500 lbs - 2495 kg)

Conditions :

- AT not engaged
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : If AT is engaged, TRQ setting is 50 % everywhere.

Legend :

**OAT** : °C      **IAS** : KIAS  
**FF** : USG/h  
**FF** : kg/h      **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C		ISA - 10°C		ISA		ISA + 10°C		ISA + 20°C	
		IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
24 000	40	<b>-52</b>	<b>146</b>	<b>-42</b>	<b>145</b>	<b>-32</b>	<b>144</b>	<b>-22</b>	<b>142</b>	<b>-12</b>	<b>141</b>
		34.1		34.6		35.2		35.4		36.0	
		101	<b>209</b>	103	<b>212</b>	104	<b>215</b>	105	<b>217</b>	107	<b>219</b>
25 000	41	<b>-54</b>	<b>148</b>	<b>-44</b>	<b>146</b>	<b>-34</b>	<b>145</b>	<b>-24</b>	<b>144</b>	<b>-14</b>	<b>142</b>
		34.1		34.4		34.9		35.5		35.8	
		101	<b>215</b>	102	<b>217</b>	104	<b>220</b>	105	<b>223</b>	106	<b>225</b>
26 000	43	<b>-56</b>	<b>151</b>	<b>-46</b>	<b>150</b>	<b>-36</b>	<b>148</b>	<b>-26</b>	<b>146</b>	<b>-16</b>	<b>145</b>
		34.6		35.1		35.4		35.6		36.2	
		103	<b>223</b>	104	<b>226</b>	105	<b>228</b>	106	<b>230</b>	108	<b>233</b>
27 000	45	<b>-57</b>	<b>152</b>	<b>-47</b>	<b>151</b>	<b>-37</b>	<b>150</b>	<b>-27</b>	<b>148</b>	<b>-17</b>	<b>147</b>
		34.6		35.1		35.7		36.0		36.5	
		103	<b>228</b>	104	<b>232</b>	106	<b>235</b>	107	<b>237</b>	108	<b>241</b>
28 000	46	<b>-59</b>	<b>153</b>	<b>-49</b>	<b>152</b>	<b>-39</b>	<b>151</b>	<b>-29</b>	<b>149</b>	<b>-19</b>	<b>147</b>
		34.5		35.1		35.7		36.0		36.3	
		103	<b>233</b>	104	<b>237</b>	106	<b>241</b>	107	<b>243</b>	108	<b>245</b>
29 000	46	<b>-61</b>	<b>153</b>	<b>-51</b>	<b>151</b>	<b>-41</b>	<b>150</b>	<b>-31</b>	<b>148</b>	<b>-21</b>	<b>146</b>
		34.3		34.6		35.2		35.5		35.7	
		102	<b>237</b>	103	<b>240</b>	104	<b>244</b>	105	<b>246</b>	106	<b>248</b>
30 000	46	<b>-63</b>	<b>153</b>	<b>-53</b>	<b>151</b>	<b>-43</b>	<b>149</b>	<b>-33</b>	<b>148</b>	<b>-23</b>	<b>146</b>
		34.2		34.4		34.7		35.3		35.6	
		101	<b>241</b>	102	<b>244</b>	103	<b>246</b>	105	<b>250</b>	106	<b>252</b>
31 000	46	<b>-65</b>	<b>152</b>	<b>-55</b>	<b>150</b>	<b>-45</b>	<b>148</b>	<b>-35</b>	<b>147</b>	<b>-25</b>	<b>145</b>
		33.7		34.0		34.3		34.8		35.1	
		100	<b>244</b>	101	<b>247</b>	102	<b>249</b>	103	<b>253</b>	104	<b>255</b>

Figure 5.11.17 (2/2) - Cruise performance  
 Long range cruise (5500 lbs - 2495 kg) (Altitude > 24000 ft)

Pilot's Operating Handbook

**Long range cruise (6300 lbs - 2858 kg)**

Conditions :

- AT not engaged
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : If AT is engaged, TRQ setting is 50 % everywhere.

Legend :

**OAT** : °C      **IAS** : KIAS  
**FF** : USG/h  
**FF** : kg/h      **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
15 000	42	<b>-34 156</b>	<b>-24 155</b>	<b>-14 154</b>	<b>-4 153</b>	<b>6 152</b>
		42.3	42.9	43.5	44.0	44.6
		126 <b>193</b>	128 <b>195</b>	129 <b>198</b>	131 <b>201</b>	133 <b>203</b>
18 000	42	<b>-40 154</b>	<b>-30 152</b>	<b>-20 151</b>	<b>-10 150</b>	<b>0 149</b>
		40.0	40.4	41.0	41.6	42.1
		119 <b>199</b>	120 <b>201</b>	122 <b>204</b>	124 <b>207</b>	125 <b>209</b>
19 000	43	<b>-42 156</b>	<b>-32 154</b>	<b>-22 152</b>	<b>-12 151</b>	<b>-2 150</b>
		40.0	40.3	40.7	41.3	41.9
		119 <b>205</b>	120 <b>207</b>	121 <b>209</b>	123 <b>211</b>	124 <b>214</b>
20 000	43	<b>-44 154</b>	<b>-34 153</b>	<b>-24 151</b>	<b>-14 150</b>	<b>-4 149</b>
		38.9	39.5	39.9	40.5	41.1
		116 <b>206</b>	117 <b>209</b>	118 <b>211</b>	120 <b>214</b>	122 <b>216</b>
21 000	44	<b>-46 153</b>	<b>-36 152</b>	<b>-26 151</b>	<b>-16 150</b>	<b>-6 149</b>
		38.2	38.7	39.4	39.9	40.6
		113 <b>208</b>	115 <b>211</b>	117 <b>214</b>	119 <b>217</b>	121 <b>220</b>
22 000	44	<b>-48 152</b>	<b>-38 151</b>	<b>-28 150</b>	<b>-18 149</b>	<b>-8 148</b>
		37.4	38.0	38.6	39.2	39.8
		111 <b>210</b>	113 <b>213</b>	115 <b>216</b>	117 <b>219</b>	118 <b>222</b>
23 000	44	<b>-50 152</b>	<b>-40 151</b>	<b>-30 149</b>	<b>-20 148</b>	<b>-10 147</b>
		36.9	37.5	37.9	38.5	39.1
		110 <b>213</b>	111 <b>217</b>	113 <b>219</b>	114 <b>222</b>	116 <b>225</b>
24 000	44	<b>-52 150</b>	<b>-42 149</b>	<b>-32 148</b>	<b>-22 147</b>	<b>-12 146</b>
		36.0	36.6	37.2	37.8	38.4
		107 <b>214</b>	109 <b>218</b>	111 <b>221</b>	112 <b>224</b>	114 <b>227</b>

Figure 5.11.18 (1/2) - Cruise performance  
 Long range cruise (6300 lbs - 2858 kg) (Altitude < 24000 ft)

### Long range cruise (6300 lbs - 2858 kg)

Conditions :

- AT not engaged
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : If AT is engaged, TRQ setting is 50 % everywhere.

Legend :

**OAT** : °C      **IAS** : KIAS  
**FF** : USG/h  
**FF** : kg/h      **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
24 000	44	-52 <b>150</b>	-42 <b>149</b>	-32 <b>148</b>	-22 <b>147</b>	-12 <b>146</b>
		36.0	36.6	37.2	37.8	38.4
		107 <b>214</b>	109 <b>218</b>	111 <b>221</b>	112 <b>224</b>	114 <b>227</b>
25 000	44	-54 <b>149</b>	-44 <b>148</b>	-34 <b>147</b>	-24 <b>145</b>	-14 <b>143</b>
		35.4	36.0	36.6	36.9	37.2
		105 <b>216</b>	107 <b>220</b>	109 <b>223</b>	110 <b>225</b>	111 <b>226</b>
26 000	45	-56 <b>152</b>	-46 <b>150</b>	-36 <b>148</b>	-26 <b>147</b>	-16 <b>146</b>
		35.9	36.2	36.6	37.2	37.8
		107 <b>224</b>	108 <b>226</b>	109 <b>228</b>	111 <b>232</b>	112 <b>235</b>
27 000	47	-57 <b>154</b>	-47 <b>152</b>	-37 <b>150</b>	-27 <b>148</b>	-17 <b>147</b>
		36.2	36.5	36.9	37.2	37.8
		107 <b>231</b>	108 <b>233</b>	109 <b>235</b>	111 <b>237</b>	112 <b>241</b>
28 000	49	-59 <b>156</b>	-49 <b>154</b>	-39 <b>152</b>	-29 <b>151</b>	-19 <b>149</b>
		36.5	36.8	37.2	37.8	38.2
		108 <b>238</b>	109 <b>240</b>	111 <b>243</b>	112 <b>246</b>	113 <b>248</b>
29 000	49	-61 <b>155</b>	-51 <b>153</b>	-41 <b>151</b>	-31 <b>149</b>	-21 <b>147</b>
		36.1	36.4	36.8	37.1	37.4
		107 <b>240</b>	108 <b>243</b>	109 <b>245</b>	110 <b>247</b>	111 <b>249</b>
30 000	50	-63 <b>155</b>	-53 <b>153</b>	-43 <b>151</b>	-33 <b>149</b>	-23 <b>147</b>
		35.9	36.2	36.6	37.0	37.3
		107 <b>244</b>	108 <b>247</b>	109 <b>250</b>	110 <b>252</b>	111 <b>254</b>
31 000	50	-65 <b>154</b>	-55 <b>152</b>	-45 <b>150</b>	-35 <b>148</b>	-25 <b>146</b>
		35.5	35.8	36.2	36.6	37.0
		105 <b>247</b>	106 <b>250</b>	108 <b>252</b>	109 <b>255</b>	110 <b>257</b>

Figure 5.11.18 (2/2) - Cruise performance  
 Long range cruise (6300 lbs - 2858 kg) (Altitude > 24000 ft)

Pilot's Operating Handbook

**Long range cruise (7100 lbs - 3220 kg)**

Conditions :

- AT not engaged
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : If AT is engaged, TRQ setting is 50 % everywhere.

Legend :

**OAT** : °C      **IAS** : KIAS  
**FF** : USG/h  
**FF** : kg/h      **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
15 000	48	<b>-34 164</b>	<b>-24 163</b>	<b>-14 162</b>	<b>-4 161</b>	<b>6 160</b>
		45.4	46.0	46.7	47.4	48.0
		135 <b>202</b>	137 <b>205</b>	139 <b>208</b>	141 <b>211</b>	143 <b>213</b>
18 000	49	<b>-40 161</b>	<b>-30 160</b>	<b>-20 159</b>	<b>-10 158</b>	<b>0 157</b>
		42.7	43.5	43.9	44.8	45.5
		127 <b>208</b>	129 <b>211</b>	130 <b>214</b>	133 <b>217</b>	135 <b>220</b>
19 000	49	<b>-42 160</b>	<b>-32 159</b>	<b>-22 158</b>	<b>-12 157</b>	<b>-2 156</b>
		42.0	42.6	43.3	44.0	44.6
		125 <b>210</b>	127 <b>213</b>	129 <b>217</b>	131 <b>219</b>	133 <b>222</b>
20 000	49	<b>-44 160</b>	<b>-34 159</b>	<b>-24 157</b>	<b>-14 156</b>	<b>-4 155</b>
		41.4	42.1	42.5	43.2	43.9
		123 <b>214</b>	125 <b>217</b>	126 <b>219</b>	128 <b>222</b>	130 <b>225</b>
21 000	49	<b>-46 158</b>	<b>-36 157</b>	<b>-26 156</b>	<b>-16 155</b>	<b>-6 154</b>
		40.4	41.1	41.8	42.4	43.1
		120 <b>214</b>	122 <b>218</b>	124 <b>221</b>	126 <b>224</b>	128 <b>227</b>
22 000	49	<b>-48 157</b>	<b>-38 156</b>	<b>-28 155</b>	<b>-18 153</b>	<b>-8 152</b>
		39.8	40.4	41.0	41.4	42.1
		118 <b>217</b>	120 <b>220</b>	122 <b>223</b>	123 <b>225</b>	125 <b>228</b>
23 000	49	<b>-50 155</b>	<b>-40 154</b>	<b>-30 153</b>	<b>-20 150</b>	<b>-10 148</b>
		38.9	39.5	40.1	40.3	40.7
		116 <b>217</b>	117 <b>221</b>	119 <b>224</b>	120 <b>225</b>	121 <b>226</b>
24 000	49	<b>-52 154</b>	<b>-42 153</b>	<b>-32 152</b>	<b>-22 150</b>	<b>-12 149</b>
		38.3	38.9	39.6	40.0	40.6
		114 <b>220</b>	116 <b>223</b>	118 <b>227</b>	119 <b>228</b>	121 <b>231</b>

Figure 5.11.19 (1/2) - Cruise performance  
 Long range cruise (7100 lbs - 3220 kg) (Altitude < 24000 ft)

### Long range cruise (7100 lbs - 3220 kg)

Conditions :

- AT not engaged
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : If AT is engaged, TRQ setting is 50 % everywhere.

Legend :

**OAT** : °C      **IAS** : KIAS  
**FF** : USG/h  
**FF** : kg/h      **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C		ISA - 10°C		ISA		ISA + 10°C		ISA + 20°C	
		IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
24 000	49	-52	154	-42	153	-32	152	-22	150	-12	149
		38.3		38.9		39.6		40.0		40.6	
		114	220	116	223	118	227	119	228	121	231
25 000	49	-54	153	-44	152	-34	151	-24	149	-14	147
		37.7		38.3		39.0		39.4		39.8	
		112	222	114	226	116	229	117	231	118	232
26 000	51	-56	153	-46	151	-36	150	-26	149	-16	148
		37.4		37.9		38.5		39.2		39.8	
		111	226	113	228	114	231	117	235	118	238
27 000	52	-57	155	-47	153	-37	151	-27	149	-17	148
		37.7		38.1		38.5		39.0		39.6	
		112	232	113	235	114	237	116	239	118	242
28 000	53	-59	157	-49	154	-39	152	-29	150	-19	149
		38.1		38.2		38.7		39.1		39.8	
		113	239	114	240	115	243	116	245	118	248
29 000	53	-61	156	-51	154	-41	152	-31	150	-21	148
		37.7		38.1		38.6		39.0		39.5	
		112	242	113	244	115	247	116	249	117	251
30 000	53	-63	155	-53	153	-43	151	-33	149	-23	147
		37.3		37.8		38.2		38.7		39.1	
		111	244	112	247	113	250	115	252	116	254
31 000	49	-65	155	-55	153	-45	150	-35	148	-25	146
		37.3		37.7		37.9		38.3		38.8	
		111	249	112	251	113	252	114	255	115	257

Figure 5.11.19 (2/2) - Cruise performance  
 Long range cruise (7100 lbs - 3220 kg) (Altitude > 24000 ft)



## 5.12 - Time, consumption and descent distance

Conditions :

- Power as required to maintain constant Vz
- Landing gear and flaps UP
- CAS = 230 KCAS - BLEED switch on AUTO

Pressure altitude (feet)	Vz = 1500 ft/min					Vz = 2000 ft/min					Vz = 2500 ft/min				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	us gal			l	kg	us gal			l	kg	us gal	
31000	20:40	70	55	18.5	101	15:30	47	37	12.4	75	12:25	34	27	9.0	60
30000	20:00	68	53	17.9	97	15:00	45	36	12.0	72	12:00	33	26	8.8	58
28000	18:40	64	50	16.8	89	14:00	43	34	11.3	66	11:10	31	25	8.3	53
26000	17:20	59	47	15.7	81	13:00	40	31	10.6	61	10:25	29	23	7.8	48
24000	16:00	55	43	14.5	73	12:00	37	29	9.8	55	09:35	28	22	7.3	44
22000	14:40	51	40	13.4	66	11:00	34	27	9.1	50	08:50	26	20	6.8	40
20000	13:20	47	37	12.3	59	10:00	32	25	8.4	44	08:00	24	19	6.3	35
18000	12:00	42	33	11.1	53	09:00	29	23	7.6	39	07:10	22	17	5.8	31
16000	10:40	38	30	10.0	46	08:00	26	20	6.8	34	06:25	20	15	5.2	27
14000	09:20	33	26	8.8	40	07:00	23	18	6.1	30	05:35	18	14	4.6	24
12000	08:00	29	23	7.6	33	06:00	20	16	5.3	25	04:50	15	12	4.1	20
10000	06:40	24	19	6.4	27	05:00	17	13	4.5	21	04:00	13	10	3.4	16
8000	05:20	20	15	5.2	22	04:00	14	11	3.7	16	03:10	11	8	2.8	13
6000	04:00	15	12	3.9	16	03:00	11	8	2.8	12	02:25	8	6	2.2	10
4000	02:40	10	8	2.7	10	02:00	7	6	1.9	8	01:35	6	4	1.5	6
2000	01:20	5	4	1.4	5	01:00	4	3	1.0	4	00:50	3	2	0.8	3
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0

Figure 5.12.1 - Time, consumption and descent distance

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PIM - Not authorized for operation

### 5.13 - Holding time

Conditions :

- Landing gear and flaps UP
- IAS = 120 KIAS - BLEED switch on AUTO
- TRQ  $\approx$  26 %

Pressure altitude (feet)	Fuel used during holding time											
	Weight 5500 lbs (2495 kg)						Weight 6300 lbs (2858 kg)					
	10 min			30 min			10 min			30 min		
	l	kg	USG	l	kg	USG	l	kg	USG	l	kg	USG
SL	30	23	7.8	89	70	23.5	30	24	8.0	91	71	24.1
5000	26	21	6.9	79	62	20.8	27	21	7.1	81	64	21.4
10000	24	18	6.2	71	55	18.7	24	19	6.5	73	58	19.4
15000	22	17	5.8	66	51	17.3	23	18	6.0	69	54	18.1
20000	20	16	5.3	60	47	15.9	21	17	5.6	63	50	16.7

Figure 5.13.1 - Holding time

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PIM - Not authorized for operation

## 5.14 - Landing distances

The following tables give the landing distances for several weight configurations.

All common information applicable to tables (pages 5.14.2 to 5.14.4) are listed below.

Associated conditions :

- Landing gear DN and flaps LDG
- Maximum braking without reverse
- Hard, dry and level runway

In table headings :

- GR = Ground roll (in ft)
- D<sub>50</sub> = Landing distance (clear to 50 ft) (in ft)

Corrections :

- In case of wind, apply the following corrections :
  - Reduce total distances by 10 % every 10 kts of headwind
  - Increase total distances by 30 % every 10 kts 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 : 7024 lbs (3186 kg)**

Associated conditions :

- Approach speed IAS = 85 KIAS
- Touch-down speed IAS = 78 KIAS

Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1575	2135	1675	2265	1740	2330	1840	2430
2000	1675	2265	1805	2395	1870	2495	1970	2590
4000	1805	2395	1940	2560	2035	2660	2135	2790
6000	1940	2560	2100	2725	2200	2855	2300	2955
8000	2100	2725	2265	2920	2360	3020	2495	3180
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1905	2530	2000	2625	2070	2690	2135	2790
2000	2070	2690	2135	2790	2230	2890	2300	2955
4000	2230	2890	2330	2985	2430	3085	2495	3185
6000	2395	3050	2530	3215	2625	3315	2690	3380
8000	2590	3280	2725	3410	2855	3570	2920	3640

Figure 5.14.1 - Landing distances - 7024 lbs (3186 kg)

▲ **CAUTION** ▲

Refer to page 5.14.1 for correction factors.



**Weight : 6250 lbs (2835 kg)**

Associated conditions :

- Approach speed IAS = 80 KIAS
- Touch-down speed IAS = 65 KIAS

Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1050	1900	1115	2000	1180	2070	1215	2135
2000	1115	2000	1215	2100	1245	2200	1310	2265
4000	1180	2100	1280	2230	1345	2330	1410	2395
6000	1280	2230	1380	2360	1445	2460	1510	2525
8000	1380	2360	1475	2490	1540	2590	1610	2690
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1280	2200	1310	2300	1380	2360	1445	2430
2000	1345	2330	1410	2430	1475	2495	1540	2560
4000	1445	2460	1510	2560	1575	2655	1640	2755
6000	1575	2645	1640	2720	1705	2820	1770	2920
8000	1705	2790	1770	2885	1835	2985	1900	3085

Figure 5.14.2 - Landing distances - 6250 lbs (2835 kg)

▲ **CAUTION** ▲

Refer to page 5.14.1 for correction factors.



**Weight : 5071 lbs (2300 kg)**

Associated conditions :

- Approach speed IAS = 80 KIAS
- Touch-down speed IAS = 60 KIAS

Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	885	1900	950	2000	1000	2070	1030	2135
2000	950	2000	1030	2100	1065	2200	1115	2265
4000	1000	2100	1080	2230	1150	2330	1200	2395
6000	1080	2230	1180	2360	1230	2460	1280	2525
8000	1180	2360	1245	2490	1310	2590	1360	2690
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1080	2200	1115	2300	1180	2360	1230	2430
2000	1150	2330	1200	2430	1245	2495	1310	2560
4000	1230	2460	1280	2560	1345	2655	1395	2755
6000	1345	2645	1395	2720	1445	2820	1510	2920
8000	1445	2790	1510	2885	1560	2985	1610	3085

Figure 5.14.3 - Landing distances - 5071 lbs (2300 kg)

▲ **CAUTION** ▲

Refer to page 5.14.1 for correction factors.





**Section 6****Weight and balance**

## Table of contents

6.1	-	General .....	6.1.1
6.2	-	Airplane weighing procedures .....	6.2.1
6.3	-	Baggage loading .....	6.3.1
6.4	-	Determining weight and balance .....	6.4.1
		General .....	6.4.1
		Utilization of weight and balance graph .....	6.4.2
		Airplane loading form (m, kg) .....	6.4.4
		Example of airplane weight and balance report .....	6.4.6
		Weight and balance form and diagram (m, kg) .....	6.4.8
		Weight and balance form and diagram (in, lbs) .....	6.4.10
		Weight and balance samples (m, kg) .....	6.4.13
		Weight and balance samples (in, lbs) .....	6.4.17
		Determining empty airplane characteristics .....	6.4.20
6.5	-	List of equipment .....	6.5.1

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PIM - Not authorized for operation

## 6.1 - General

This section is intended to provide the pilot with the procedure to determine the weight and balance of the airplane.

### ▲ WARNING ▲

**It is the pilot's responsibility to ensure that the airplane is properly loaded and the weight and balance limits are adhered to.**



This airplane allows multiple cabin seat configurations between 2 seats and 6 seats, as required by the operator - refer to chapter 7.3.

A list of equipment available for this airplane is referenced at the end of this POH - refer to chapter 6.5.

The list of specific optional equipment installed on your airplane as delivered from the factory can be found in the records carried in the airplane.

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PIM - Not authorized for operation

## 6.2 - Airplane weighing procedures

Refer to maintenance manual for the procedures to use.

- 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.

- 

PIM - Not authorized for operation

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PIM - Not authorized for operation

### 6.3 - Baggage loading

There are two baggage compartments :

- one in fuselage non pressurized forward section, between firewall and cockpit with maximum baggage capacity of 110 lbs (50 kg),
- one located in the rear of the pressurized cabin with following characteristics :

>> *With 6-seat configuration*

- in the baggage compartment, behind the rear seats, with 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 accommodations*

There are two loading areas :

- one in place of the 2 removed rear seats, with maximum loading capacity of 176 lbs (80 kg),
- one, in the baggage compartment, behind the rear seats area, with maximum loading capacity of 220 lbs (100 kg).

Two types of baggage securing nets can be used :

- the small cargo net is attached through nine anchoring points on seat rails, between frame C11 and frame C13bis - refer to section 2 for limitations, Figure 7.2.1B.
- 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 - refer to section 2 for limitations, Figure 7.2.1A.

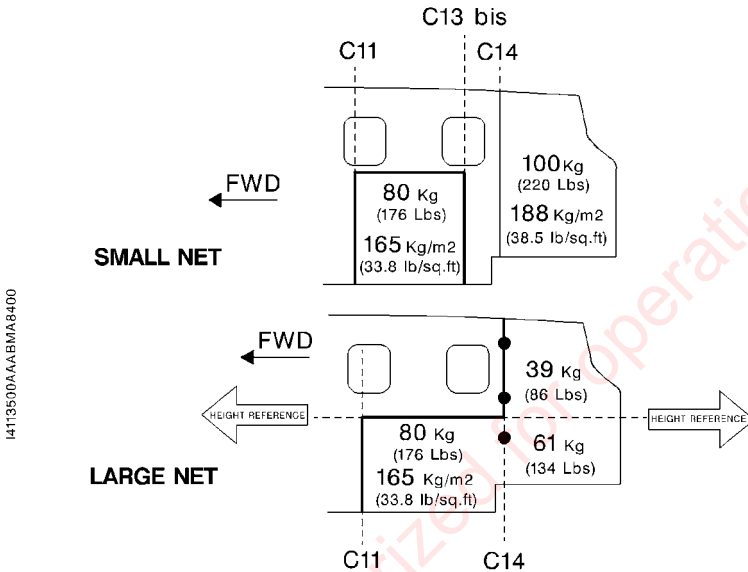


Figure 6.3.1 - Baggage limits

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.

Evenly distribute the load within the cargo zone and ensure that overall weight is centered.

When using the large net, distribute the weight in each zone, delineated by the step in the floor, according to the zone limits.



&gt;&gt; All

**▲ WARNING ▲**

**It is the pilot's responsibility to check that all parcels and baggages are properly secured in the cabin.**

**Transport of dangerous product is normally prohibited, however if transport of such product is necessary, it must be performed in compliance with regulations concerning transport of dangerous product and any other applicable regulation.**



Baggage compartments loading must be done in accordance with the weight and balance limits of the airplane - refer to section 2 for limitations.

Generally, if rear seats are not used or are removed, first load AFT compartment, then, if required, FWD compartment. If rear seats are used, first load FWD compartment, then, if required, 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 procedure to determine the weight and balance of the airplane.

**▲ 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 last airplane weight and balance report :

- the empty weight, expressed in kg or lbs,
- the moment, expressed in m.kg or in.lbs,
- the CG, expressed in MAC %

If the airplane empty weight has varied since last weight and balance report (for example, due to installation of optional equipment), refer to paragraph Determining empty airplane characteristics to determine new empty weight and the corresponding moment.

## Utilization of weight and balance graph

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 lb and in, and use the dedicated form - see figures 6.4.3 or 6.4.4, appropriate to the chosen units.

- 1) Record the basic empty weight (1a), moment (1b) and CG (MAC %) (1c) from the last weight and balance report - see sample of weight and balance report, figures 6.4.1 and 6.4.2.
- 2) Record the expected loading (2a) and compute each associated moment (2b).
- 3) Compute zero fuel weight (3a) and moment (3b) as sum of all the above weights (1a)+(2a) and moments (1b) + (2b).
- 4) Check value (3a) to be below maximum zero fuel weight.
- 5) Compute zero fuel weight arm (5) and CG (MAC %) (5c) using given formulas.
- 6) Record the loaded fuel (6a) and compute associated moment (6b).
- 7) Compute ramp weight (7a) and moment (7b) as sum of zero fuel weight (3a) + loaded fuel (6a) and moments (3b) + (6b).
- 8) Check value (7a) to be below maximum ramp weight.
- 9) Compute ramp weight arm (9) and CG (MAC %) (9c) using given formulas.
- 10) Record the expected taxi fuel (negative value) (10a) and compute associated moment (10b).
- 11) Compute takeoff weight (11a) and moment (11b) as sum of ramp weight (7a) + taxi fuel (10a) and moments (7b) + (10b).
- 12) Check value (11a) to be below maximum takeoff weight.
- 13) Compute takeoff weight arm (13) and CG (MAC %) (13c) using given formulas.
- 14) Record the expected trip fuel (negative value) (14a) and compute associated moment (14b).
- 15) Compute landing weight (15a) and moment (15b) as sum of takeoff weight (11a) + trip fuel (14a) and moments (11b) + (14b).
- 16) Check value (15a) to be below maximum landing weight.
- 17) Compute landing weight arm (17) and CG (MAC %) (17c) using given formulas.
- 18) Plot zero fuel weight, takeoff weight and landing weight on 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 on your navigation log.

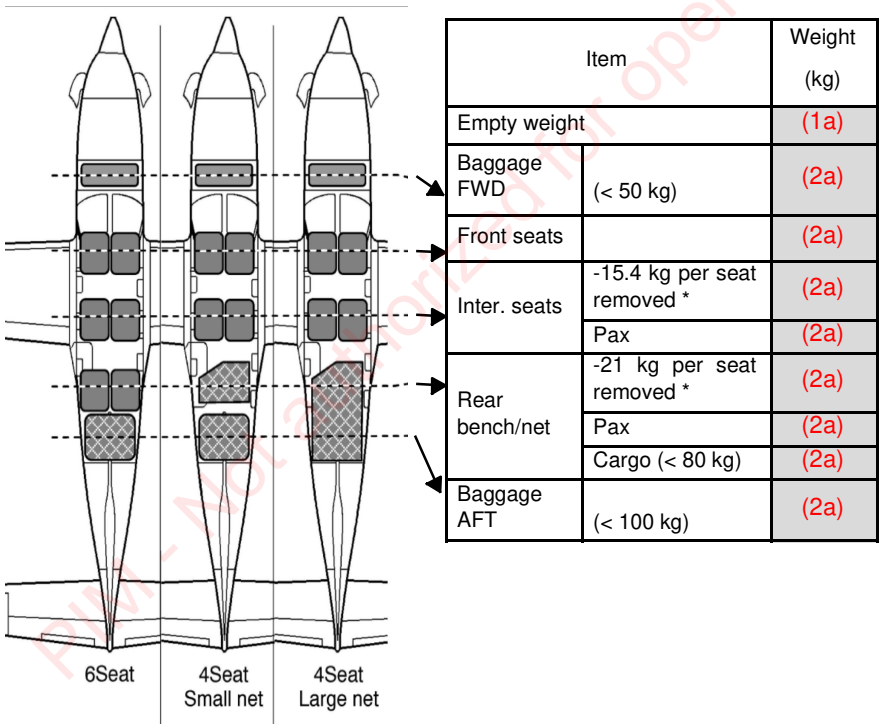
PIM - Not authorized for operation

### Airplane loading form (m, kg)

Moment = Weight x Arm  $CG (MAC \%) = \frac{(Arm (m) - 4.392)}{1.51} \times 100$

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (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	(< 2736 kg)	(3a)	(5)	(3b)	(5c)
Fuel	(kg)	(6a)	4.820	(6b)	
Ramp weight	(< 3370 kg)	(7a)	(9)	(7b)	(9c)
Taxi fuel	(kg)	(10a)	4.820	(10b)	
Takeoff weight	(< 3354 kg)	(11a)	(13)	(11b)	(13c)
Trip fuel	(kg)	(14a)	4.820	(14b)	
Landing weight	(< 3186 kg)	(15a)	(17)	(17)	(17c)

\* Seats weights include seat heating system



\* Seats weights include seat heating system

**Example of airplane weight and balance report**

• NOTE •

Airplane original report shall be kept with airplane POH



REGISTRE INDIVIDUEL DE CONTROLE INDIVIDUAL INSPECTION RECORD		TBM 700																				
FICHE DE PESEE CONFIGURATION 6 PLACES		S/N : F : 8																				
Mise de niveau :	Rails de sieges	SEULEMENT POUR INFORMATION, SE REFERER A LA LIMITATION DU MANUEL DE VOL SECTION 2																				
		<p><b>LIMITATION</b></p> <p>Masse max au décollage : 3384 Kg   H</p> <p>Masse max à l'atterrissage : 3186 Kg   H</p> <p>Centrage ( trains sortis et volets rentrés )</p> <table> <tr> <td>2000 Kg</td> <td>14 à 35,5 %</td> <td>  H</td> </tr> <tr> <td>2835 Kg</td> <td>18 à 35,5 %</td> <td>  H</td> </tr> <tr> <td>2984 Kg</td> <td>20 à 35,5 %</td> <td>  H</td> </tr> </table>	2000 Kg	14 à 35,5 %	H	2835 Kg	18 à 35,5 %	H	2984 Kg	20 à 35,5 %	H											
2000 Kg	14 à 35,5 %	H																				
2835 Kg	18 à 35,5 %	H																				
2984 Kg	20 à 35,5 %	H																				
<b>PESEE EFFECTUEE SUR POINTS DE LEVAGE</b>		DISTANCE DU C.G. A LA REFERENCE																				
<p>Avion non peint Sans huile moteur</p> <table border="1"> <thead> <tr> <th>Point</th> <th>Masse lue (Kg)</th> <th>Tare (Kg)</th> <th>Masse nette (Kg)</th> </tr> </thead> <tbody> <tr> <td>Point gauche</td> <td>793,5</td> <td></td> <td>P2</td> </tr> <tr> <td>Point droit</td> <td>825</td> <td></td> <td>P3</td> </tr> <tr> <td>Point avant</td> <td>499,5</td> <td></td> <td>P1</td> </tr> <tr> <td colspan="2">Masse P0 (Kg) =</td> <td>2118,0</td> <td></td> </tr> </tbody> </table>		Point	Masse lue (Kg)	Tare (Kg)	Masse nette (Kg)	Point gauche	793,5		P2	Point droit	825		P3	Point avant	499,5		P1	Masse P0 (Kg) =		2118,0		$d0 = \frac{(P1 \times d1) + (P2 + P3) \times d2}{P0}$ $d0 = \frac{(499,5 \times 2,985) + (793,5 + 825) \times 5,297}{2118,0} = 4,752$
Point	Masse lue (Kg)	Tare (Kg)	Masse nette (Kg)																			
Point gauche	793,5		P2																			
Point droit	825		P3																			
Point avant	499,5		P1																			
Masse P0 (Kg) =		2118,0																				
<b>CORRECTION</b>		<b>CENTRAGE A VIDE (EN % DE LA CMA)</b>																				
<table border="1"> <thead> <tr> <th>Masse (Kg)</th> <th>Bras Levier (m)</th> <th>Moment (m * Kg)</th> </tr> </thead> <tbody> <tr> <td>Masse P0</td> <td>2118,0</td> <td>4,752</td> <td>10064,74</td> </tr> <tr> <td>Peinture (2)</td> <td>30</td> <td>4,873</td> <td>146,19</td> </tr> <tr> <td>Huile moteur (3)</td> <td>11,2</td> <td>2,09</td> <td>23,41</td> </tr> <tr> <td>Carburant inconso. (1a)</td> <td>27,2</td> <td>4,7</td> <td>127,84</td> </tr> </tbody> </table>		Masse (Kg)	Bras Levier (m)	Moment (m * Kg)	Masse P0	2118,0	4,752	10064,74	Peinture (2)	30	4,873	146,19	Huile moteur (3)	11,2	2,09	23,41	Carburant inconso. (1a)	27,2	4,7	127,84	$CG = \frac{D0 - 4,392}{1,51} \times 100$ $CG = \frac{4,751 - 4,392}{1,51} \times 100 = 23,8$	
Masse (Kg)	Bras Levier (m)	Moment (m * Kg)																				
Masse P0	2118,0	4,752	10064,74																			
Peinture (2)	30	4,873	146,19																			
Huile moteur (3)	11,2	2,09	23,41																			
Carburant inconso. (1a)	27,2	4,7	127,84																			
<b>RESULTATS</b> W: 2145,2 D0: 4,751 M: 10192,58 (1b)																						
<b>CALCUL DE L'INDEX DE BASE</b> Cf section 6 du manuel de vol																						
<p>Masse à vide ( W ) 2145,2 Kg (1a)</p> <p>Centrage à Vide ( CG ) 23,8 % (1c)</p> <p>Moment ( M ) : 10192,58</p>																						
1 - Rayer la mention inutile. 2 - Valeur non prise en compte si l'avion était peint lors de la pesée. 3 - Valeur non prise en compte si l'avion a été pesé avec huile.																						
DATE :	VISA DE CONTRÔLE :																					

Figure 6.4.1 - Example of weight and balance report and basic airplane characteristics, in kg and m



• NOTE •  
Airplane original report shall be kept with airplane POH

REGISTRE INDIVIDUEL DE CONTROLE INDIVIDUAL INSPECTION RECORD		TBM 700																												
WEIGHT AND BALANCE REPORT		S/N :																												
6-SEAT CONFIGURATION		F : 6																												
<p>Leveling : Seat rails</p> <p>Front wheel      Left and right Wheel points</p> <p><u>WEIGHING CARRIED OUT ON JACK POINTS</u></p> <p>Not painted airplane Without engine oil</p> <table border="1"> <tr> <td></td> <td>Gross Weight (lb)</td> <td>Tare (lb)</td> <td>Net Weight (lb)</td> </tr> <tr> <td>Left point</td> <td>1749,4</td> <td>P2</td> <td></td> </tr> <tr> <td>Right point</td> <td>1818,8</td> <td>P3</td> <td></td> </tr> <tr> <td>Front point</td> <td>1101,2</td> <td>P1</td> <td></td> </tr> <tr> <td colspan="2">Weight P0 (lbs) =</td> <td>4669,4</td> <td></td> </tr> </table> <p><math>D0 = \frac{(P1 \times d1) + (P2 + P3) \times d2}{P0}</math></p> <p><math>D0 = \frac{(1101,2 \times 117,5) + (1749,4 + 1818,8) \times 208,5}{4669,4} = 187,0</math></p>			Gross Weight (lb)	Tare (lb)	Net Weight (lb)	Left point	1749,4	P2		Right point	1818,8	P3		Front point	1101,2	P1		Weight P0 (lbs) =		4669,4		<p><u>LIMITATIONS</u>      ONLY FOR INFORMATION, REFER TO LIMITATIONS SECTION 2 OF POH</p> <p>Maximun take off weight : 7394,3 lbs      H</p> <p>Maximun landing weight : 7024 lbs      H</p> <p><u>Balance ( landing gears down and flaps up )</u></p> <table border="1"> <tr> <td>4400 lbs</td> <td>14 - 35,5 %</td> <td rowspan="3">H</td> </tr> <tr> <td>6260 lbs</td> <td>18 - 35,5 %</td> </tr> <tr> <td>6579 lbs</td> <td>20 - 35,5 %</td> </tr> </table> <p><u>Balance</u>      DISTANCE FROM C.G. TO REFERENCE</p>		4400 lbs	14 - 35,5 %	H	6260 lbs	18 - 35,5 %	6579 lbs	20 - 35,5 %
	Gross Weight (lb)	Tare (lb)	Net Weight (lb)																											
Left point	1749,4	P2																												
Right point	1818,8	P3																												
Front point	1101,2	P1																												
Weight P0 (lbs) =		4669,4																												
4400 lbs	14 - 35,5 %	H																												
6260 lbs	18 - 35,5 %																													
6579 lbs	20 - 35,5 %																													
<p><u>CORRECTIONS</u></p> <table border="1"> <tr> <td></td> <td>Weight (lb)</td> <td>Arm (in)</td> <td>Moment (in * lb)</td> </tr> <tr> <td>Weight P0</td> <td>4669,4</td> <td>187,0</td> <td>873360,7</td> </tr> <tr> <td>Paint (2)</td> <td>66,2</td> <td>191,8</td> <td>12697,2</td> </tr> <tr> <td>Engine oil (3)</td> <td>28,7</td> <td>82,3</td> <td>2032,8</td> </tr> <tr> <td>Unusable fuel</td> <td>(1a) 60</td> <td>185</td> <td>11100,0</td> </tr> </table> <p><math>CG = \frac{D0 - 173}{59,5} \times 100</math></p> <p><math>CG = \frac{187 - 173}{59,5} \times 100 = 23,8</math></p>			Weight (lb)	Arm (in)	Moment (in * lb)	Weight P0	4669,4	187,0	873360,7	Paint (2)	66,2	191,8	12697,2	Engine oil (3)	28,7	82,3	2032,8	Unusable fuel	(1a) 60	185	11100,0	<p><b>RESULTS</b>      W: 4729,4      D0: 187      M: 884460,7      (1b)</p>								
	Weight (lb)	Arm (in)	Moment (in * lb)																											
Weight P0	4669,4	187,0	873360,7																											
Paint (2)	66,2	191,8	12697,2																											
Engine oil (3)	28,7	82,3	2032,8																											
Unusable fuel	(1a) 60	185	11100,0																											
<p><u>BASIC INDEX CALCULATION</u> See section 6 of Pilot's Operating Handbook</p> <table border="1"> <tr> <td>Empty weight ( W )</td> <td>4729,4 lb      (1a)</td> </tr> <tr> <td>Balance ( CG )</td> <td>23,8 %      (1c)</td> </tr> <tr> <td>Moment ( M ) :</td> <td>884460,7</td> </tr> </table>				Empty weight ( W )	4729,4 lb      (1a)	Balance ( CG )	23,8 %      (1c)	Moment ( M ) :	884460,7																					
Empty weight ( W )	4729,4 lb      (1a)																													
Balance ( CG )	23,8 %      (1c)																													
Moment ( M ) :	884460,7																													
<p>1 - Scratch useless mention. 2 - Values not taken into account if the airplane was painted when weighed. 3 - Values not taken account if the oil tank was full when the airplane was weighed.</p> <p>DATE :      INSPECTION VISA :</p>																														

Figure 6.4.2 - Example of weight and balance report and basic airplane characteristics, in lb and in

### Weight and balance form and diagram (m, kg)

Moment = Weight x Arm

$$CG (MAC \%) = \frac{(Arm (m) - 4.392)}{1.51} \times 100$$

Item	Weight (kg)	Arm (m)	Moment (m.kg)	CG (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 (< 2736 kg)				
Fuel (kg)		4.820		
Ramp weight (< 3370 kg)				
Taxi fuel (kg)		4.820		
Takeoff weight (< 3354 kg)				
Trip fuel (kg)		4.820		
Landing weight (< 3186 kg)				

\* Seats weights include seat heating system

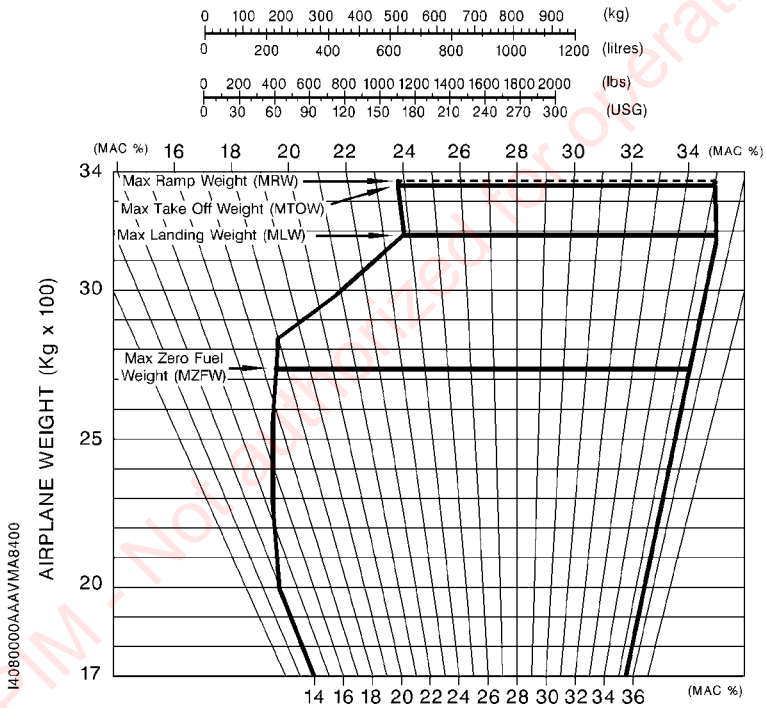


Figure 6.4.3 - Weight and balance diagram

**Weight and balance form and diagram (in, lbs)**

Moment = Weight x Arm

$$CG (MAC \%) = \frac{(Arm (in) - 172.93)}{59.45} \times 100$$

Item	Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (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 (< 6032 lbs)				
Fuel (lbs)		189.8		
Ramp weight (< 7430 lbs)				
Taxi fuel (lbs)		189.8		
Takeoff weight (< 7394 lbs)				
Trip fuel (lbs)		189.8		
Landing weight (< 7024 lbs)				

\* Seats weights include seat heating system

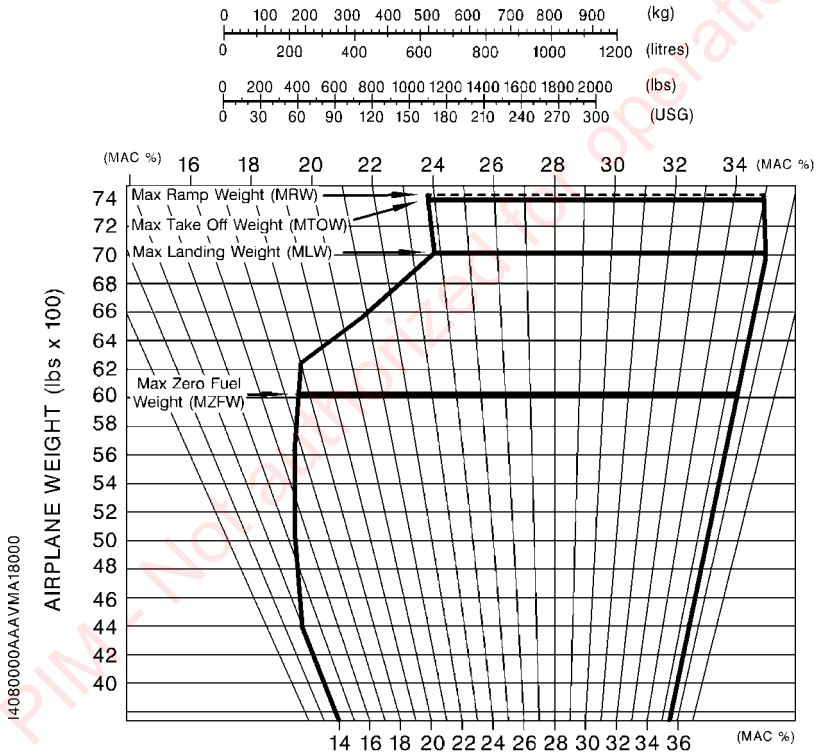


Figure 6.4.4 - Weight and balance diagram

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**Weight and balance samples (m, kg)**

**▲ CAUTION ▲**

Loading samples - see figure 6.4.5 or 6.4.6 - are only given as an example ; for calculation concerning your airplane, refer to the diagram corresponding to its validity.



	Fig. 6.4.5
1 - Airplane basic characteristics :  <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">                     W = Empty weight                      Moment                      Balance arm                      CG (MAC %)                 </div> <div style="width: 35%; text-align: right;">                     2 126 kg                      10 073 m.kg                      4.738 m                      22.9 %                 </div> </div>	
2 - Foreseen loading :  <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">                     1 Pilot and 1 front passenger                      2 Rear passengers                      AFT Cargo in baggage compartment                      Fuel                 </div> <div style="width: 35%; text-align: right;">                     200 kg                      160 kg                      50 kg                      820 kg                 </div> </div>	
3 - Foreseen fuel :  <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">                     Taxi fuel                      Trip fuel                 </div> <div style="width: 35%; text-align: right;">                     - 16 kg                      - 600 kg                 </div> </div>	

Moment = Weight x Arm

$$CG (MAC \%) = \frac{(Arm (m) - 4.392)}{1.51} \times 100$$

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty weight (kg)		2 126	4.738	10 073	22.9
Baggage FWD (< 50 kg)		0	3.250	0	
Front seats (kg)		200	4.534	907	
Inter. seats	- 15.4 kg per seat removed *	0	5.710	0	
	Pax	0		0	
Rear bench/net	- 21 kg per seat removed *	0	6.785	0	
	Pax	160		1 086	
	Cargo (< 80 kg)	0		0	
Baggage AFT (< 100 kg)		50	7.695	385	
Zero fuel weight (< 2736 kg)		2 536	4.910	12 451	34.3
Fuel (kg)		820	4.820	3 952	
Ramp weight (< 3370 kg)		3 356	4.888	16 403	32.8
Taxi fuel (kg)		- 16	4.820	- 77	
Takeoff weight (< 3354 kg)		3 340	4.888	16 326	32.8
Trip fuel (kg)		- 600	4.820	- 2 892	
Landing weight (< 3186 kg)		2 740	4.903	13 434	33.8

\* Seats weights include seat heating system



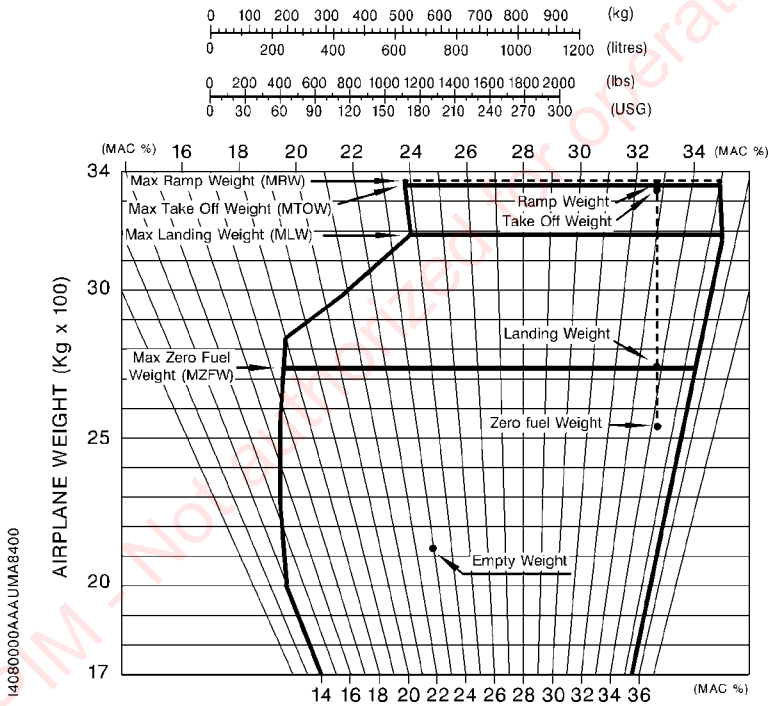


Figure 6.4.5 - Loading sample (in kg and m)

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## Weight and balance samples (in, lbs)

### ▲ CAUTION ▲

Loading samples - see figure 6.4.5 or 6.4.6 - are only given as an example ; for calculation concerning your airplane, refer to the diagram corresponding to its validity.



	Fig. 6.4.6
1 - Airplane basic characteristics :	
W = Empty weight	4 638 lbs
Moment	864 173 in.lbs
Balance arm	186.3 in
CG (MAC %)	22.6 %
2 - Foreseen 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	1 850 lbs
3 - Foreseen fuel :	
Taxi fuel	- 36 lbs
Trip fuel	- 1 400 lbs

Moment = Weight x Arm

$$CG (MAC \%) = \frac{Arm (in) - 172.93}{59.45} \times 100$$

Item		Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty weight (lbs)		4 638	186.3	864 173	22.6
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 (< 6032 lbs)		5 562	193.1	1 074 019	33.9
Fuel (lbs)		1 850	189.8	351 130	
Ramp weight (< 7430 lbs)		7 412	192.3	1 425 149	32.6
Taxi fuel (lbs)		- 36	189.8	- 6 833	
Takeoff weight (< 7394 lbs)		7 376	192.3	1 418 316	32.6
Trip fuel (lbs)		- 1 400	189.8	- 265 720	
Landing weight (< 7024 lbs)		5 976	192.9	1 152 596	33.6

\* Seats weights include seat heating system

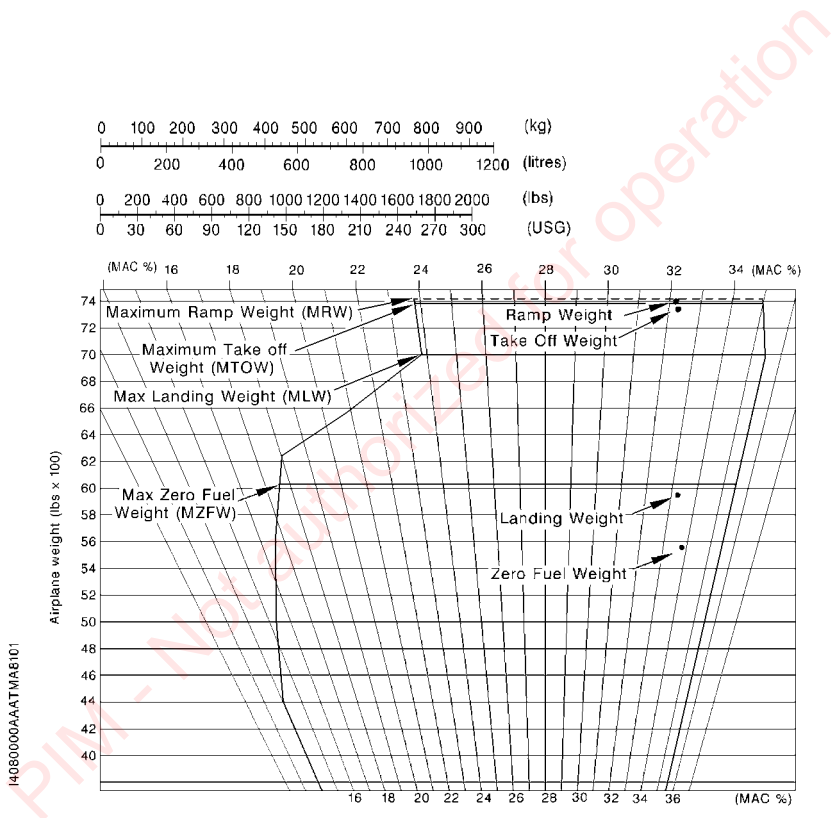


Figure 6.4.6 - Loading samples (in lbs and in)

### Determining empty airplane characteristics

Empty airplane characteristics (weight and balance) may vary with regard to those indicated on weighing form according to installed optional equipment and installed seats.

List of equipment (refer to chapter 6.5) 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 new empty weight and corresponding balance if necessary.

Date	Equipment or modification description	(+) (-)	Weight modification			Basic empty weight		
			Weight lb	Arm in.	Moment lb.in/1000	Weight W	Arm "d <sub>o</sub> "	Moment
	According to delivery							

Figure 6.4.7 - Sample weight and balance record

$$\text{CG m.a.c.\%} = \frac{(\text{do} - 172.93)}{59.45} \times 100$$

Use the above formula to express arm "d<sub>o</sub>" in % of mean aerodynamic chord.

• NOTE •

Arm expressed in inches with regard to reference.

•

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)
		<b>10 - Parking, mooring, storage and return to service</b>		
		<b>Board kit</b>		
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)
		<b>25 - Equipment and furnishings (partial)</b>		
A	0171-25	<b>"Generation 2008" cabinets</b>		
		- Version A : L.H. low cabinet	9.48 (4.300)	203.74 (5.175)
		- Version B : R.H. low cabinet	9.48 (4.300)	203.74 (5.175)
		- Version C : Removable (low) insulated picnic bag	9.48 (4.300)	203.74 (5.175)
		- Version D : L.H. top storage cabinet	7.72 (3.500)	203.74 (5.175)
		- Version E : R.H. top storage cabinet	7.72 (3.500)	203.74 (5.175)
		- Version F : R.H. top storage cabinet + audio	7.94 (3.600)	203.74 (5.175)
		- Version G : L.H. top baggage cabinet	3.09 (1.400)	203.74 (5.175)
		- Version H : R.H. top baggage cabinet	3.09 (1.400)	203.74 (5.175)

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)
S	0207-00	Carpet	35.27 (16.000)	211.42 (5.370)
		- Cabin furnishings	302.45 (137.19)	211.42 (5.370)
A	0207-00	2 <sup>nd</sup> carpet (cargo use)	35.27 (16.000)	211.42 (5.370)
		<b>Leather seats</b>		
S	0588-25	- L.H. intermediate seat with heaters system (back to or in flight direction)	34.06 (15.45)	224.65 (5.706)
S	0588-25	- R.H. Intermediate seat with heaters system (back to or in flight direction)	34.06 (15.45)	224.65 (5.706)
		- Double chair		
S	0588-25	. L.H. Seat with heaters system	46.25 (20.98)	278.58 (7.076)
S	0588-25	. R.H. Seat with heaters system	46.25 (20.98)	278.58 (7.076)
		<b>Nets</b>		
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 :	3.638 (1.650)	289.53 (7.354)
S		. Partition net	1.698 (0.770)	289.53 (7.354)



## 6.5 - List of equipment

The list of equipment is available in manufacturer Report reference NAV No.34/90-RJ-App 8, located at the end of this POH.

A separate list of equipment of items installed at the factory in your specific airplane is provided in your airplane file.

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## Section 7

### Description

#### Table of contents

7.1	-	General .....	7.1.1
7.2	-	Airframe .....	7.2.1
		Wings .....	7.2.5
		Ailerons, spoilers and pitch trim tab .....	7.2.5
		Wing flaps .....	7.2.5
		Empennages .....	7.2.5
7.3	-	Accommodations .....	7.3.1
		Instrument panel .....	7.3.1
		HomeSafe interface panel (Post-MOD70-0650-34B) .....	7.3.18
		Doors, windows and emergency exit .....	7.3.18
		Seats, belts and harnesses .....	7.3.26
		Baggage compartments .....	7.3.32
		Use of cargo nets .....	7.3.35
7.4	-	Flight controls .....	7.4.1
		Roll .....	7.4.1
		Roll trim .....	7.4.1
		Elevator .....	7.4.6
		Pitch trim .....	7.4.6
		Rudder .....	7.4.11
		Rudder trim .....	7.4.11
7.5	-	Landing gear .....	7.5.1
		Hydraulic pressure .....	7.5.1
		Landing gear lever .....	7.5.1
		Landing gear position indicator .....	7.5.2
		Safety .....	7.5.4
		Ground maneuvers .....	7.5.6
		Brake system .....	7.5.9
		Parking brake .....	7.5.9

7.6	-	Powerplant .....	7.6.1
		Turboprop engine operation .....	7.6.1
		Engine control levers .....	7.6.4
		Engine instruments .....	7.6.9
		Single engine indicator .....	7.6.10
		Engine lubrication .....	7.6.12
		Engine starting .....	7.6.12
		Engine air inlet .....	7.6.15
		Exhaust system .....	7.6.16
		Engine accessories .....	7.6.16
		Propeller .....	7.6.17
7.7	-	Use of autothrottle .....	7.7.1
		General .....	7.7.1
		AT engine and airspeed protections .....	7.7.1
		AT engagement and disengagement .....	7.7.3
		Engine start or engine air start .....	7.7.4
		Taxi .....	7.7.4
		Takeoff .....	7.7.4
		Climb .....	7.7.4
		Cruise .....	7.7.5
		Descent .....	7.7.8
		Approach .....	7.7.8
		Go-around .....	7.7.9
		Landing .....	7.7.9
		FD vertical modes and corresponding AT modes summary .....	7.7.10
7.8	-	Fuel system .....	7.8.1
		Fuel tanks .....	7.8.1
		Fuel unit .....	7.8.1
		HomeSafe fuel shut-off valve (Post-MOD70-0650-34A) .....	7.8.1
		Tank manual selector .....	7.8.1
		Automatic tank selector .....	7.8.6
		Electric boost pump (AUX BP) .....	7.8.7
		Main mechanical boost pump .....	7.8.10
		Engine fuel system .....	7.8.10
		Fuel gaging installation .....	7.8.10
		Fuel system draining and clogging indicator .....	7.8.11

Pilot's Operating Handbook

7.9	-	Electrical system .....	7.9.1
		Starter generator .....	7.9.1
		Stand-by generator .....	7.9.2
		Battery .....	7.9.2
		Ground power receptacle .....	7.9.2
		Distribution .....	7.9.3
		Emergency use .....	7.9.4
		BatteryMINDer charger .....	7.9.4
		Indicating .....	7.9.14
		Protection - safety .....	7.9.14
		Exterior lighting .....	7.9.16
		Interior lighting .....	7.9.19
		115V plug .....	7.9.22
7.10	-	Air conditioning and pressurization .....	7.10.1
		Engine bleed air system .....	7.10.2
		Cabin pressurization control system .....	7.10.3
		Dual zones Environmental Control System (ECS) .....	7.10.6
7.11	-	Emergency oxygen system .....	7.11.1
		Flight above 15000 ft with possible emergency descent ....	7.11.4
		When required to remain above 15000 ft due to minimum enroute altitude .....	7.11.5
		Flight between 15000 ft and 10000 ft .....	7.11.6
		O <sub>2</sub> smart mike mask .....	7.11.7
7.12	-	Air data system and instruments .....	7.12.1
		Static pressure systems .....	7.12.1
		Dynamic pressure system .....	7.12.2
7.13	-	Vacuum system and instruments .....	7.13.1
		Standby attitude module (MD302) .....	7.13.1
7.14	-	Ice protection equipment .....	7.14.1
		Ice Detection System .....	7.14.1
		Wing and empennage deicing .....	7.14.3
		Propeller deicing .....	7.14.4
		Windshield deicing .....	7.14.5
		Heating of pitots and stall warning sensor (PITOT L/R & STALL HTR) .....	7.14.6
		Turbine air inlet protection .....	7.14.6

7.15	-	Miscellaneous equipment .....	7.15.1
		Stall warning system .....	7.15.1
		Static dischargers .....	7.15.2
		Cabin fire extinguisher .....	7.15.2
		Autopilot .....	7.15.2
		GPS .....	7.15.2
		Weather radar .....	7.15.3
		Emergency locator transmitter .....	7.15.6
		Lightweight data recorder (LDR 1000) .....	7.15.7
		ADS-B OUT function .....	7.15.8
		Flight deck information system (FS 510) .....	7.15.8
		Data collection and transmission system (FASTBOX) .....	7.15.9
		GARMIN Integrated Flight Deck (GIFD) approaches .....	7.15.9
		HomeSafe emergency function (Post-MOD70-0650-34A) ..	7.15.15
		Optional equipment .....	7.15.18

## 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. References to this guide are 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 figures 7.2.1, 7.2.1A and 7.2.1B

This airplane is a six-place, low wing airplane.

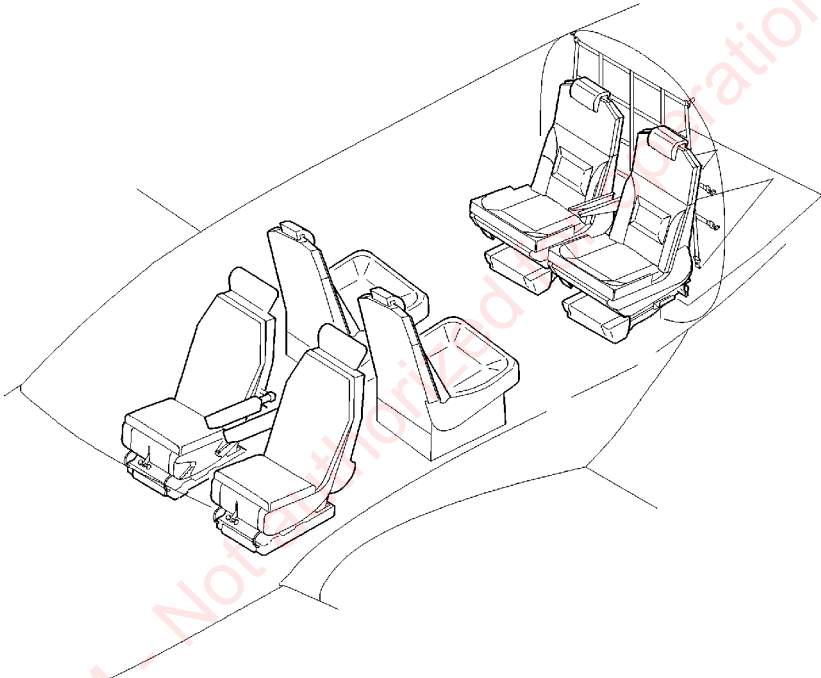
The airplane can be changed into 2, 3, 4 or 5-seat accommodation.

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 fuselage, with a one-piece access door and folding stairs comprising a hand rail allowing pilot and passengers boarding. The occupants have access to cockpit and to 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.



14251201AAAAMA8000

Figure 7.2.1 - Cabin arrangement  
6-seat accommodation

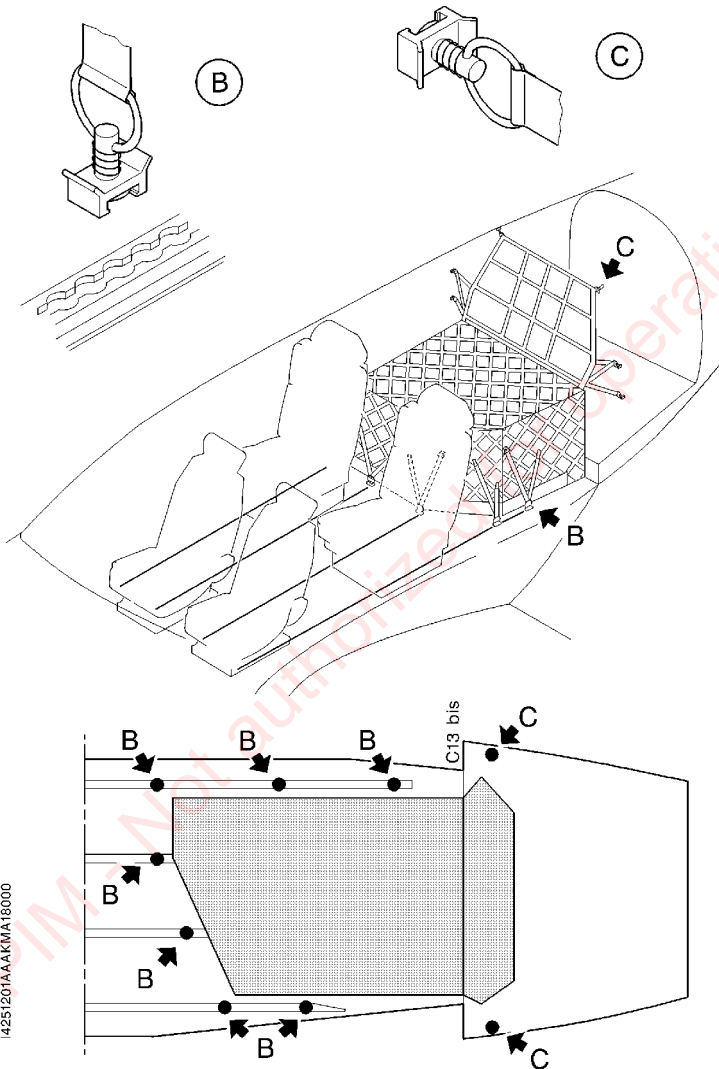


Figure 7.2.1A - Cabin arrangement  
4-seat accommodation with large securing net

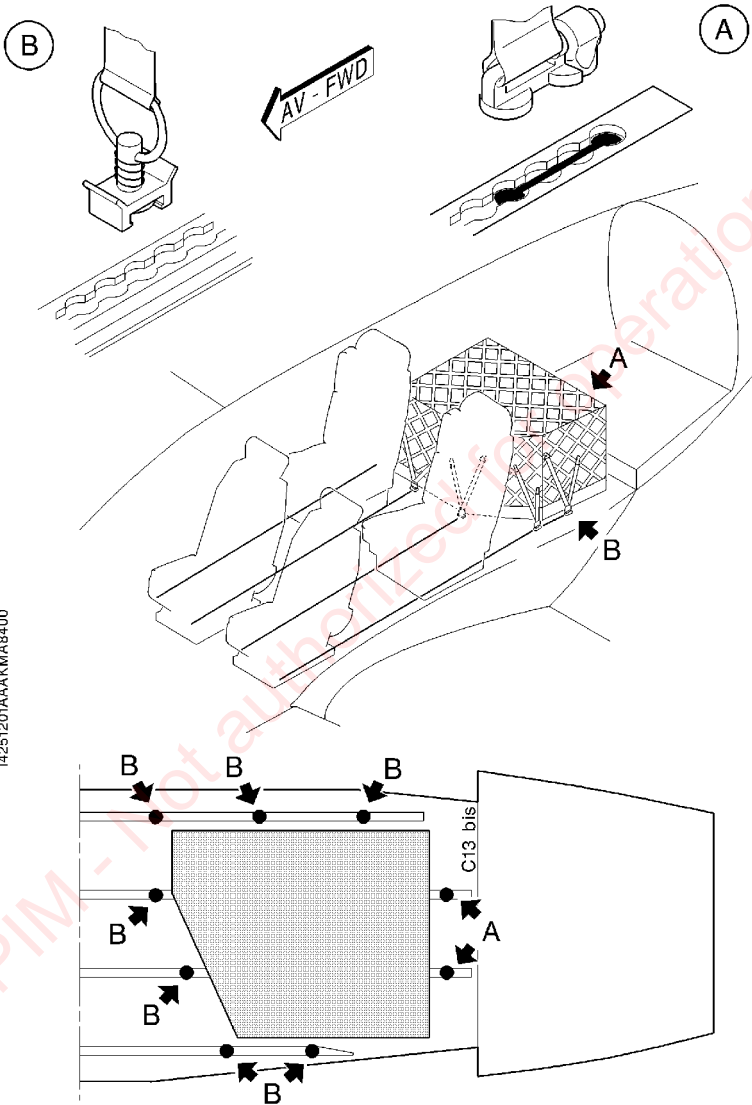


Figure 7.2.1B - Cabin arrangement  
4-seat accommodation with small securing net

## 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 7.2.2

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.

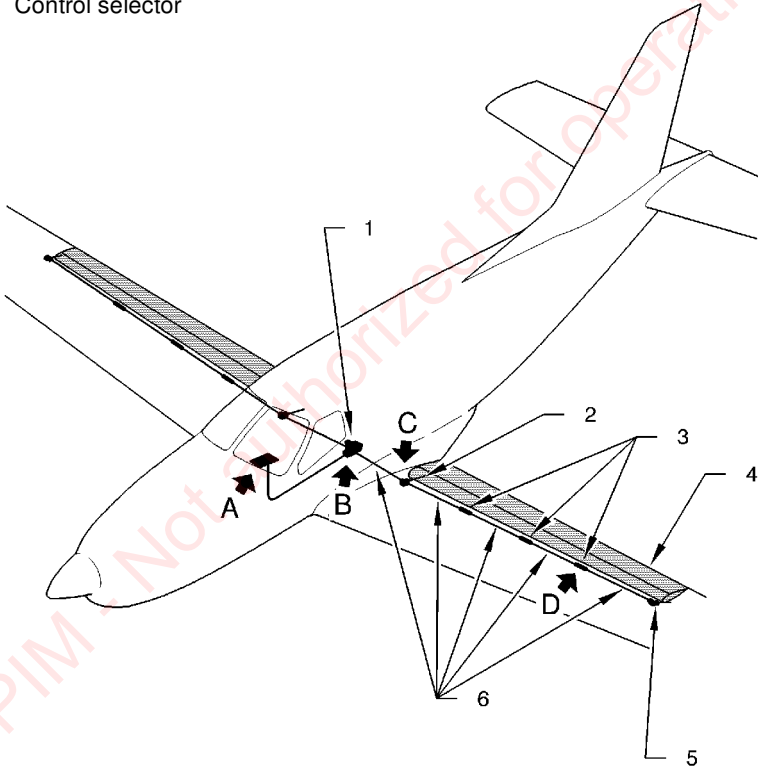
A preselection control located on the right side of pedestal console allows the pilot to select one of the three positions (UP - TO - LDG). For each control position, a deflection angle is defined (0°, 10°, 34°).

A monitoring device interrupts flaps movement as soon as a deflection dissymmetry is detected.

## Empennages

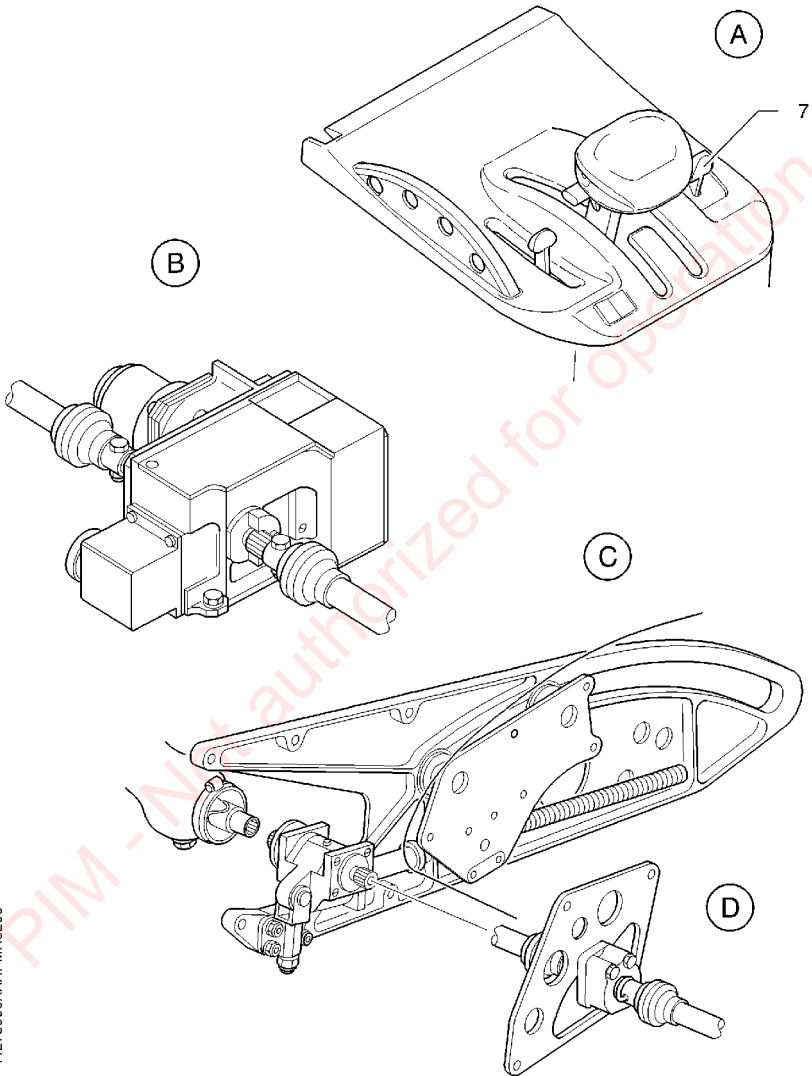
Empennages are composite structures. The horizontal empennage consists of a horizontal stabilizer (PHF), control surfaces and elevator trim tabs ; the vertical empennage consists of a vertical stabilizer, the rudder and the rudder trim tab. The empennage leading edge is equipped with a deicing system.

- 1) Geared motor
- 2) Internal actuator
- 3) Intermediate bearings
- 4) Wing flap
- 5) External actuator
- 6) Rods
- 7) Control selector



14275000AAAAM8003

Figure 7.2.2 (1/2) - Wing flaps



14275000AAA PMA8200

Figure 7.2.2 (2/2) - Wing flaps

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## 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 electrical generation control panels, engine starting, electrical systems, AP/TRIMS switch, ELT remote control switch and the FUEL control panel.

Rearwards of upper panel, the central part of cockpit overhead panel provides loud-speakers and cockpit floodlights.

**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.

- Left area instrument panel includes - see figure 7.3.3 :
  - . on top : MD302, MASTER CAUTION and MASTER WARNING,
  - . on the left : DISPLAY BACKUP push-button, A/C CONTROL and SEATS HTRS MASTER panels
  - . at bottom : deicing controls and indicators, MICRO/MASK switch, hourmeter, landing gear control panel, parking brake control, left station control wheel and alternate station reception-micro jack.
- Central area instrument panel includes - see figure 7.3.4 :
  - . on top : AFCS control unit, BARO knob (pilot) and the LVL push-button
  - . at bottom : touchscreen controllers and PRESSURIZATION panel.
- Right area instrument panel includes - see figure 7.3.5 :
  - . on top : locations for optional equipment,
  - . on the right: DISPLAY BACKUP push-button, BARO knob (R.H. station)
  - . at bottom : alternate static source selector and the right station control wheel.
- Emergency air control is located under the right area instrument panel.

An adjustable air outlet is located on both sides of instrument panel lower part.

Reception-micro jacks are located inside the recess under the arm-rest on both lateral sides of the cockpit, on R.H. side of intermediate R.H. passenger's seat and on the arm-rest of rear R.H. passenger's seat.

**Pedestal console** - see figure 7.3.6

The pedestal console, under the touchscreen controllers, comprises flaps controls, pitch trim tab control wheel, aileron trim switch, engine controls and fuel tank selector.

**Circuit breakers panel** - see figures 7.3.7 and 7.9.4

Circuit breakers for all electrical equipment supplied by bus bars are located on a separate panel installed on the right side of cockpit.

**General alarms warning lights and CAS messages**

**WARNING**, **CAUTION** and **ADVISORY** messages appear on the MFD 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 7.3.8, 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 loud-speakers installed in cockpit overhead panel and through the pilot's and R.H. station headsets.

The aural warnings consist of :

- the GARMIN flight deck system (GIA and GMA),
- the loud-speaker.

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 :

- gear up and idle → landing gear / landing gear
- gear up and extended flaps → landing gear / landing gear
- stall → stall / stall
- gear up, idle and stall → stall / landing gear
- gear up, extended flaps and stall → stall / landing gear
- IAS > 269 ± 3 KIAS → overspeed / overspeed
- AP disconnected → AP chime
- AT disconnected → autothrottle

Refer to the GARMIN Pilot's Guide for description of the other aural warning alerts.

**Cockpit overhead panel** - see figure 7.3.2

This panel includes following elements :

- the loud-speaker of GMA,
- the TEST push-button,
- the emergency lighting rheostat.

It is attached to the cabin upper part between frames C6 and C7.

The emergency lighting rheostat is electrically supplied by BATT BUS bar and protected by PANEL EMER circuit breaker.

The TEST push-button allows to test :

- the autopilot control panel backlighting,
- the MASTER WARNING and MASTER CAUTION indicators,
- the deicing panel led,
- the stick shaker system,
- the fire detection system, if installed,
- the stall aural warning alert,
- the DISPLAY BACKUP push-buttons backlighting,
- the LVL push-button.

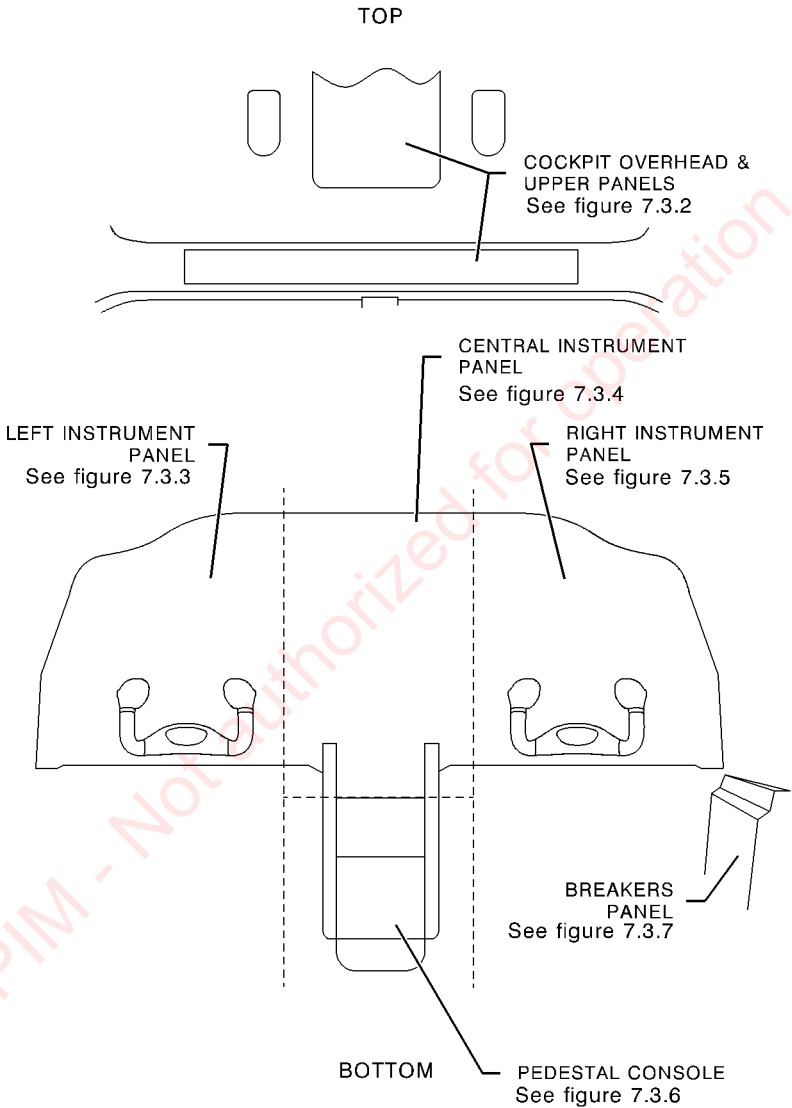


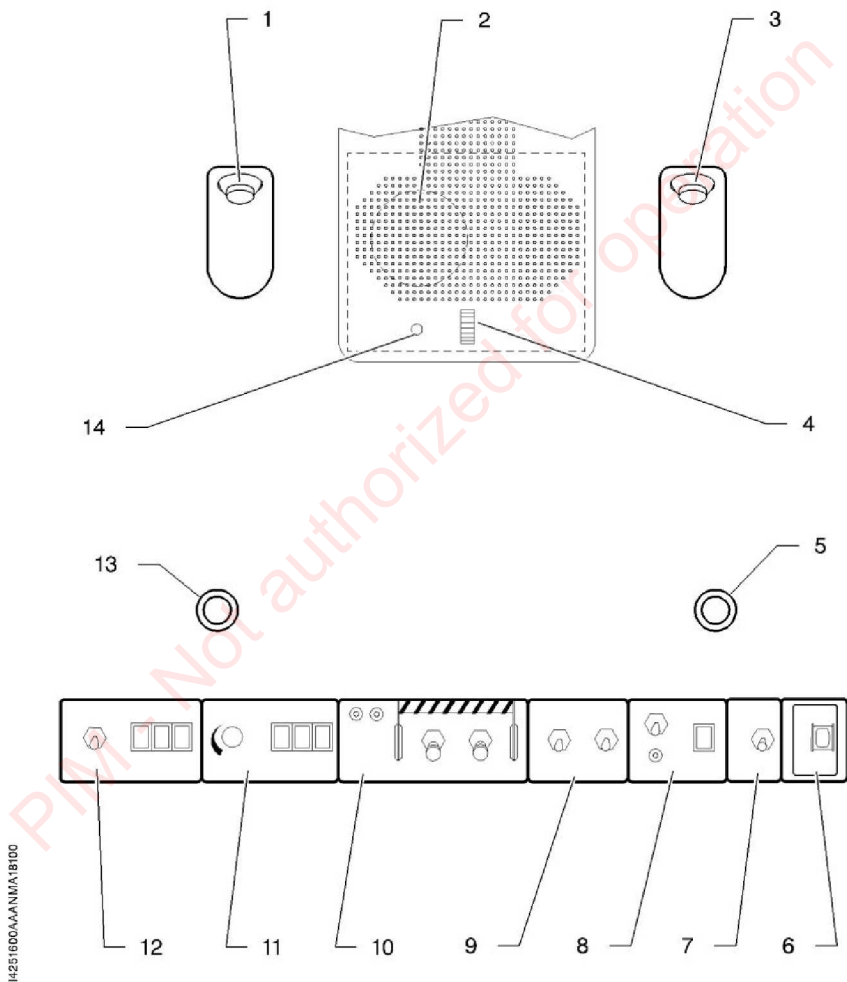
Figure 7.3.1 - Instrument panel assembly  
(Typical arrangement)

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PIM - Not authorized for operation

- 1) L.H. instrument panel emergency lighting
- 2) Loud-speaker of GMA
- 3) R.H. instrument panel emergency lighting
- 4) Instrument panel emergency lighting switches (rheostats)
- 5) R.H. cockpit floodlight
- 6) ELT remote control switch
- 7) AP/TRIMS switch
- 8) FUEL control panel - see figure 7.7.3
- 9) ENGINE START switches - see figure 7.6.8
- 10) ELECTRIC POWER switches - see figure 7.8.5
- 11) INT LIGHTS internal lighting switches - see figure 7.8.7
- 12) EXT LIGHTS external lighting switches - see figure 7.8.6
- 13) L.H. cockpit floodlight
- 14) TEST push-button

Figure 7.3.2 (1/2) - Upper panel and cockpit overhead panel



142516DDAAANMIA1B100

Figure 7.3.2 (2/2) - Upper panel and cockpit overhead panel

- 1) DISPLAY BACKUP, A/C CONTROL and SEATS HTRS MASTER panels  
- see figure 7.9.2
- 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 station reception-micro jack
- 9) L.H. 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 push-button
- 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 7.13.1
- 19) Paper clip
- 20) Hourmeter
- 21) MICRO / MASK switch - see figure 7.10.1
- 22) Chronometer management
- 23) Stormscope clear
- 24) Transponder Ident sequence
- 25) COM 2 (Stand-by / active)

Figure 7.3.3 (1/2) - Left instrument panel





Figure 7.3.3 (2/2) - Left instrument panel  
(Typical arrangement)


- 
- 1) BARO knob
  - 2) Micro LDR
  - 3) AFCS control unit
  - 4) LVL push-button
  - >> *With HomeSafe emergency function (Post-MOD70-0650-34B)*
  - 5) HomeSafe activation button
  - >> *All*
  - 6) Registration
  - 7) MFD
  - 8) Touchscreen controllers
  - 9) PRESSURIZATION panel - see figure 7.10.2

Figure 7.3.4 (1/2) - Central instrument panel



Figure 7.3.4 (2/2) - Central instrument panel  
(Typical arrangement)

- 1) PFD 2
- 2) DISPLAY BACKUP push-button
- 3) BARO knob
- 4) Pitch & Yaw trim setting management
- 5) CWS
- 6) Push To Talk button (PTT)
- 7) AP / TRIM DISC push-button
- 8) Adjustable air outlet
- 9) Circuit breakers panel postlight
- 10) R. H. 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 (Stand-by / active)

Figure 7.3.5 (1/2) - Right instrument panel

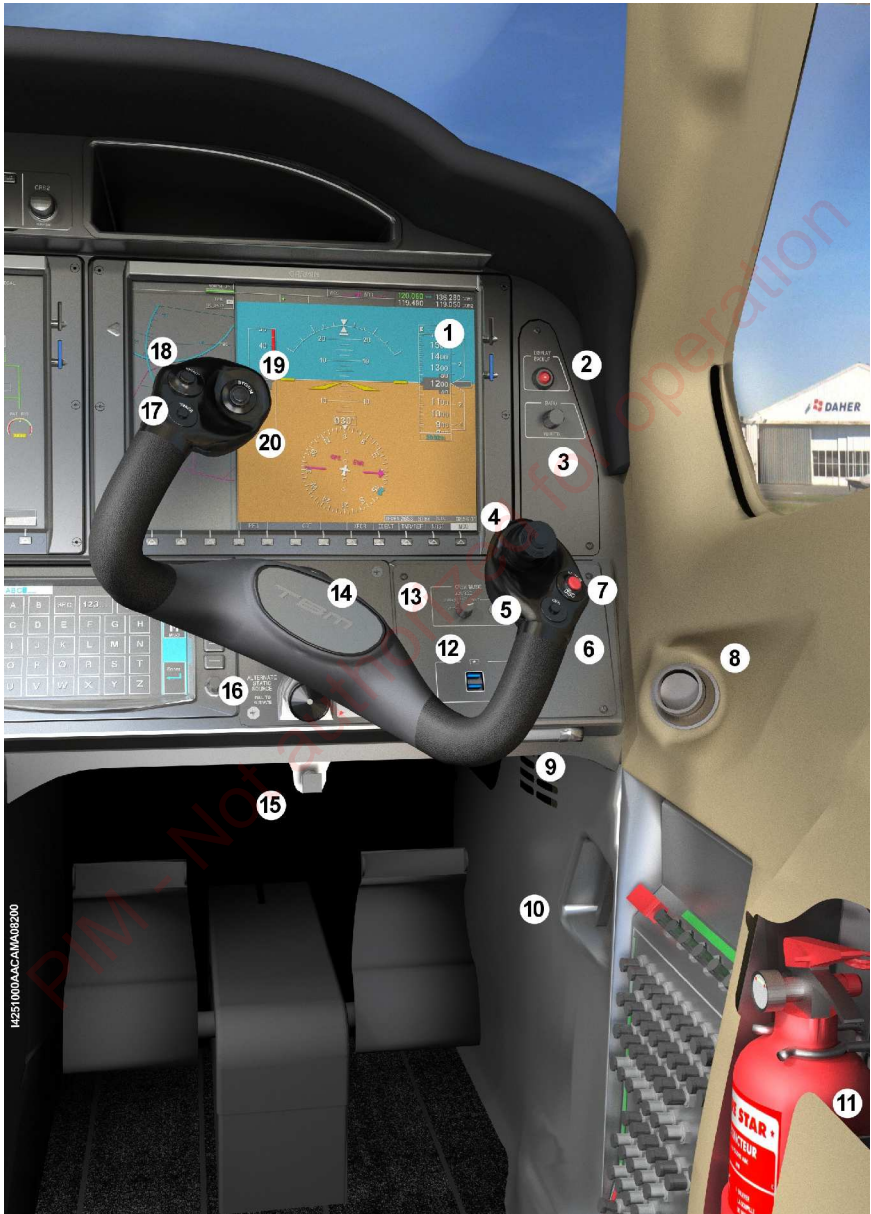


Figure 7.3.5 (2/2) - Right instrument panel  
(Typical arrangement)

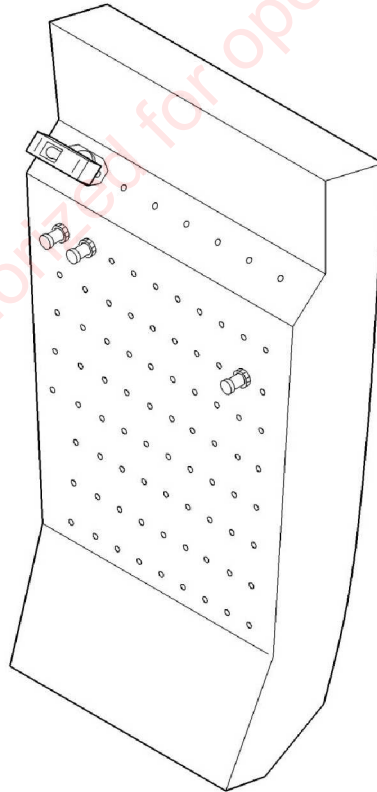
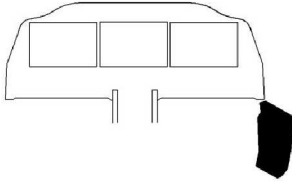
- 1) THROTTLE
- 2) FLAPS lever
- 3) THROTTLE and MAN OVRD friction adjustment
- 4) Manual FUEL TANK SELECTOR - see figure 7.7.2
- 5) Roll trim tab control
- 6) MAN OVRD emergency fuel regulation lever
- 7) Pitch trim tab control
- 8) Lock for access door to landing gear emergency pump - see figure 7.5.2

Figure 7.3.6 (1/2) - Pedestal console





Figure 7.3.6 (2/2) - Pedestal console  
(Typical arrangement)



14255004AAAAPM68200

Figure 7.3.7 - Circuit breakers panel





14316000AAAFMA8100

Figure 7.3.8 - General alarms warning lights

## HomeSafe interface panel (Post-MOD70-0650-34B)

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 7.3.9

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** lights on 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 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 stairs downwards which leads the hand rail to extend.

**▲ CAUTION ▲**

Retract stairs before closing access door and make sure door deflection area is clear.

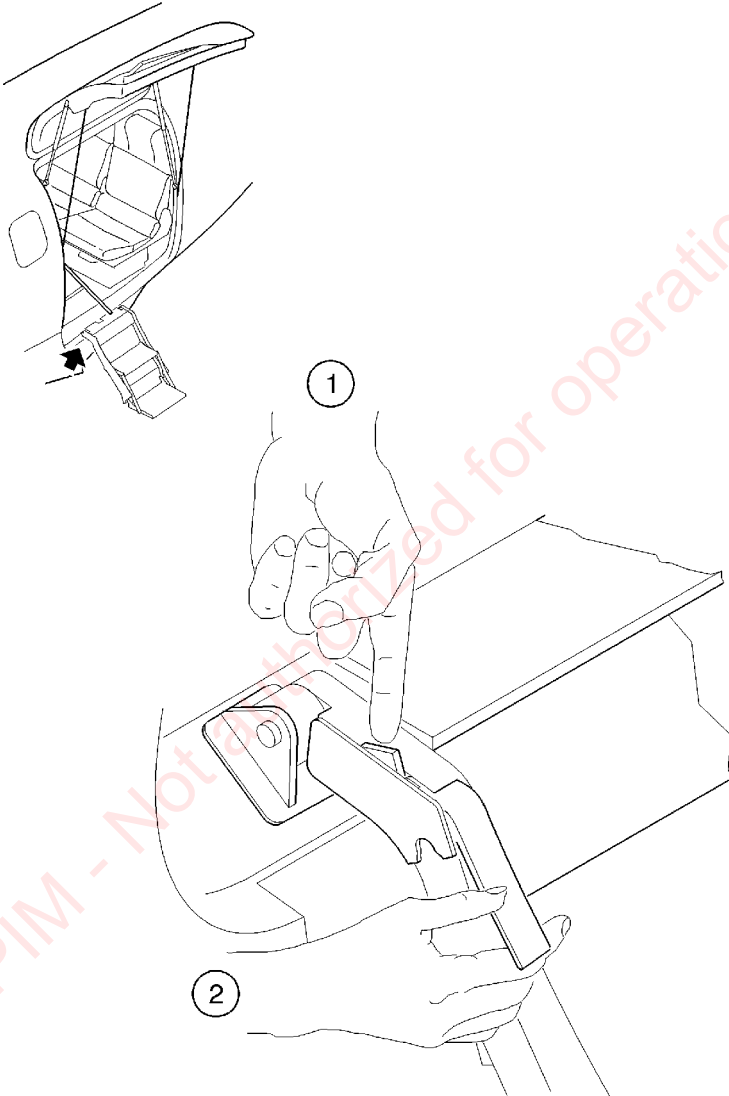


To retract stairs from outside the airplane, raise stairs by pushing them upwards from the lower part and fold them inside cabin. While stairs are retracted, the hand rail folds up.

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.



14523000AAA FMA8001

Figure 7.3.9 - Cabin access door

**Cockpit access door** - see figure 7.3.9A

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** lights on 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**

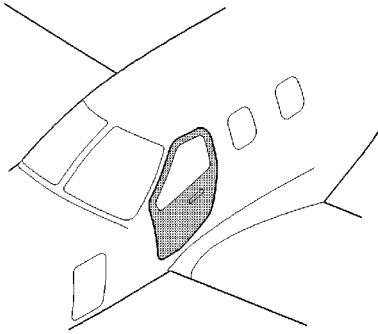
The FWD compartment door is located on the airplane left side between the firewall and the front pressure bulkhead. It is hinged at the top. It is maintained in the up position by a compensation rod. Two interlocking-type latches ensure its closing and it is equipped with a lock (same key as for the access door and the pilot door, if installed). When the door is closed, latches are flush with the fuselage profile.

**CARGO DOOR** lights on as long as FWD compartment door is not locked.

### **Windows**

Windows do not open. The windshield consists of two parts electrically deiced.

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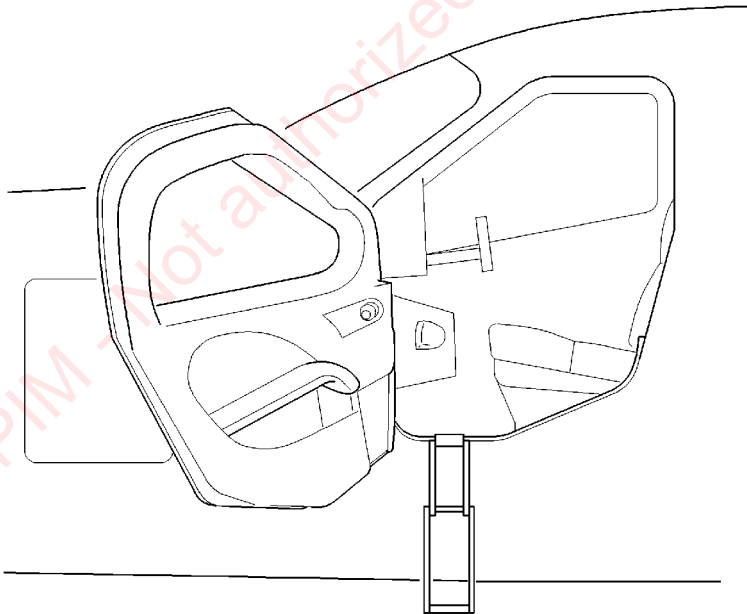


Figure 7.3.9A - Cockpit access door (pilot door)

**Emergency exit** - see figure 7.3.10

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.

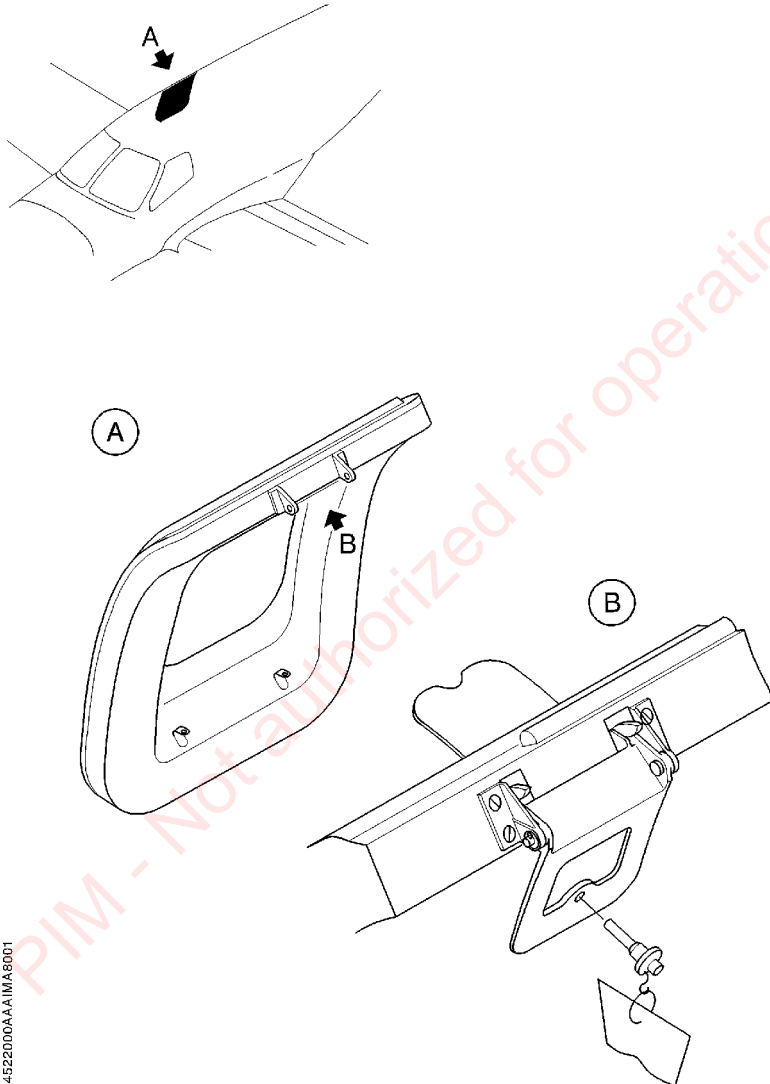
**▲ WARNING ▲**

**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.





14522000AAAIMA8001

Figure 7.3.10 - Emergency exit

## **Seats, belts and harnesses**

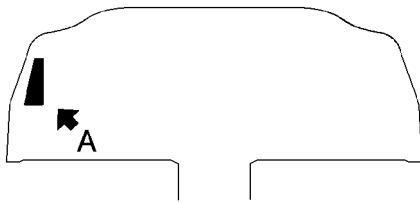
### **Heated seats** - see figure 7.3.11

Cockpit and cabin seats are equipped with a heating system providing comfort to pilot and passengers.

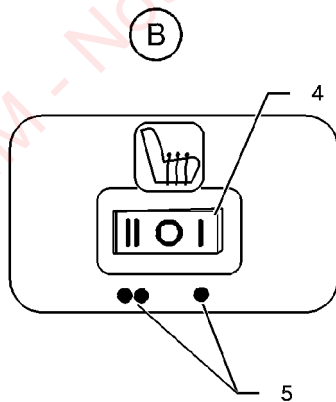
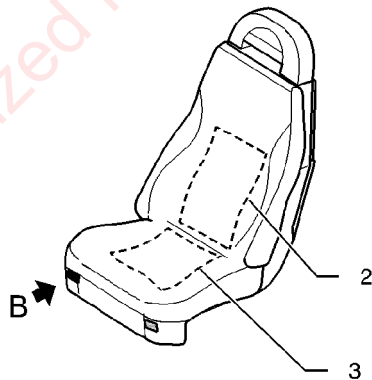
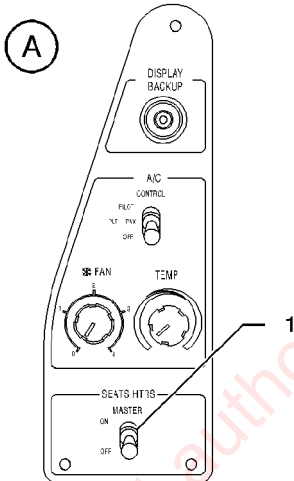
The system consists of :

- One heating element in the cushion and one heating element in the backrest of each seat,
- The SEATS HTRS MASTER switch located on the instrument panel,
- HI/OFF/LOW three positions 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 provides a holding mean for the connector to prevent its damage during seat operation or seat storage.



- 1) SEATS HTRS MASTER switch
- 2) Backrest surface heating
- 3) Seat surface heating
- 4) HI/OFF/LOW three position switch
- 5) Tactile marks



142512044AAAMA18000

Figure 7.3.11 - Heated seat

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.

The SEATS HTRS MASTER switch allows the pilot to enable or not the electrical supply of all seats heaters.

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 3 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 7.3.12

L.H. and R.H. front seats are mounted on rails attached to the structure. Longitudinal position, height and back-rest tilting of each seat can be adjusted and the arm-rest 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** - see figures 7.3.12 and 7.3.12A

>> *With 6-seat accommodation*

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 back-rests tilt forward by pulling up the handle located forward on L.H. 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 R.H. side.

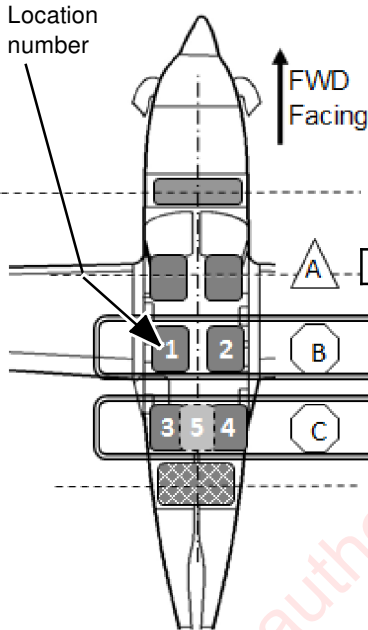
>> *With 4-seat accommodation*

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.

Many accommodations are possible. They are described hereafter

ONLY zone **B** and zone **C** can be modified for seat configurations



For all configurations, verify that your luggages are stowed and attached in the appropriate areas

**Pilot zone:** No modification allowed

**MID Seat Zone =** Possibility of seat configuration

**REAR Seat Zone =** Possibility of seat configuration if no net installations

If installed, cabinets can be removed or added by Service Center

**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.

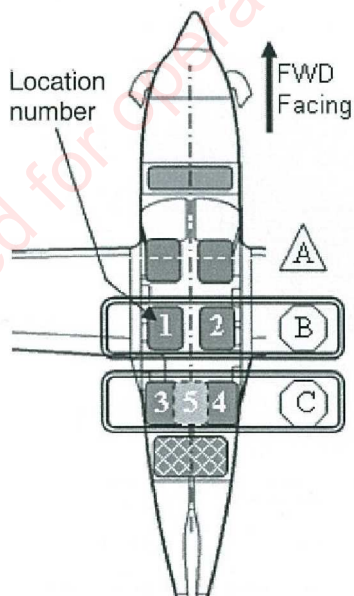
The Zone **C** accepts zero or 1 or 2 seats.

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

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) With seats heaters system (MOD70-0588-25)

In this position, the seats heaters system cannot be connected to the rear seat.

Each cross indicates that you have a seat at the correspondent location number.

**Belts and harnesses** - see figure 7.3.13

**▲ 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 a serious 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.

Each passenger seat is equipped with a three-point restraint system consisting of an adjustable lap belt and an inertia reel-type shoulder harness.

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.

## **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 L.H. rear seat and / or L.H. or R.H. 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 section 6 Weight and balance.

**▲ WARNING ▲**

**Any parcel or baggage must be stowed by straps.**

**It is the pilot's responsibility to check that all the parcels and baggage are properly secured in the cabin.**

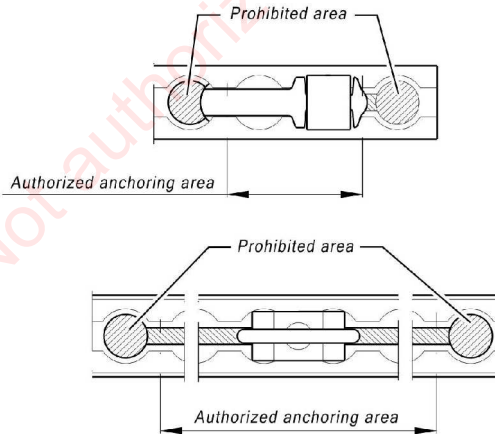
**In case of transport of dangerous materials, respect the law concerning transport of dangerous materials and any other applicable regulation.**



>> *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 7.2.1B.



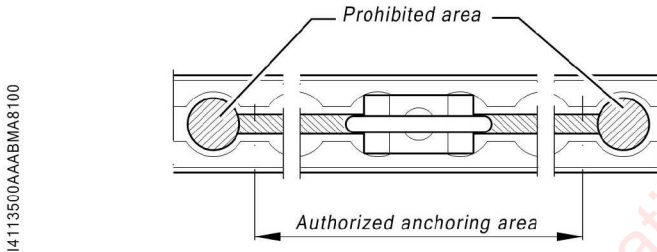
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- the large cargo net is attached through seven anchoring points on seat rails, between frame C11 and frame C13bis and six anchoring points on fuselage sides, at frame C14 - see figure 7.2.1A.

● NOTE ●

Original partition net must be disconnected from side walls and placed on the floor.





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 R.H. side upholstery panel, in the rear baggage compartment.

Maximum loads allowable in the baggage compartments depend on airplane equipment, refer to section 6 Weight and balance.

▲ **WARNING** ▲

**Any parcel or baggage in cabin must be stowed by cargo net and straps.**

**It is the pilot's responsibility to check that all the parcels and baggage are properly secured.**

**In case of transport of dangerous materials, respect the law concerning transport of dangerous 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).

>> *With 6-seat accommodation*

- 1) Front passenger seat
- 2) L. H. pilot seat
- 3) R. H. intermediate passenger seat, back to flight direction
- 4) L. H. intermediate passenger seat, back to flight direction
- 5) R. H. rear passenger seat
- 6) L. H. rear passenger seat
- 7) Front seat(s) longitudinal shift control
- 8) Front seat(s) height control
- 9) Front seat(s) back-rest tilt control
- 10) Drawer for pilot's piddle pak, if installed  
(front side : new bags, rear side : used bags)
- 11) Intermediate seat(s) back-rest tilt control
- 12) Rear bench seat(s) back-rest tilt control
- 13) Rear bench L.H. seat tilt control
- 14) Rear bench seat(s) adjustment control handle

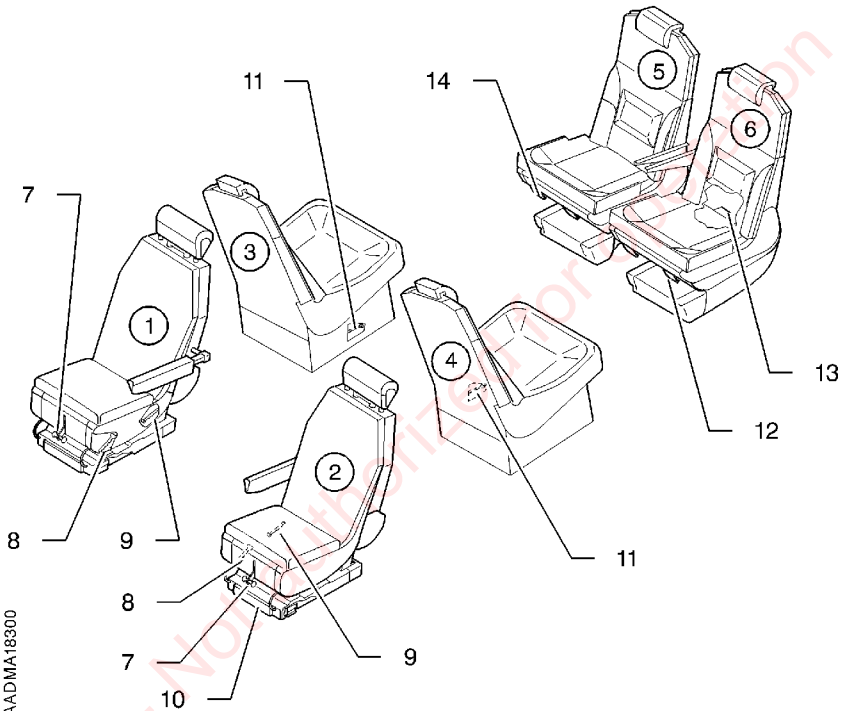
● NOTE ●

To have access to the baggage compartment, pull forwards the back-rest of rear bench L.H. seat, then pull forwards control (Item 13) to tilt L.H. seat assembly forwards.

If necessary, pull forwards the back-rest of rear bench R.H. seat.

●

Figure 7.3.12 (1/2) - Seats



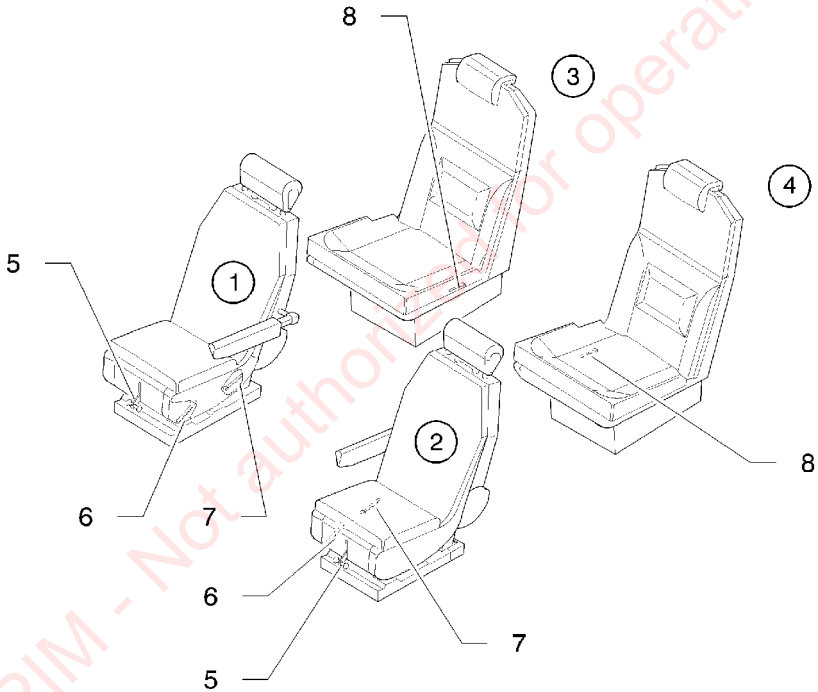
14251100AAAADMA18300

Figure 7.3.12 (2/2) - Seats

>> *With 4-seat accommodation*

- 1) Front passenger seat
- 2) L. H. pilot seat
- 3) R. H. intermediate passenger seat, facing flight direction
- 4) L. H. intermediate passenger seat, facing flight direction
- 5) Front seat(s) longitudinal shift control
- 6) Front seat(s) height control
- 7) Front seat(s) back-rest tilt control
- 8) Intermediate seat(s) back-rest tilt control

Figure 7.3.12A (1/2) - Seats



I4251100AADMA18200

Figure 7.3.12A (2/2) - Seats

>> All

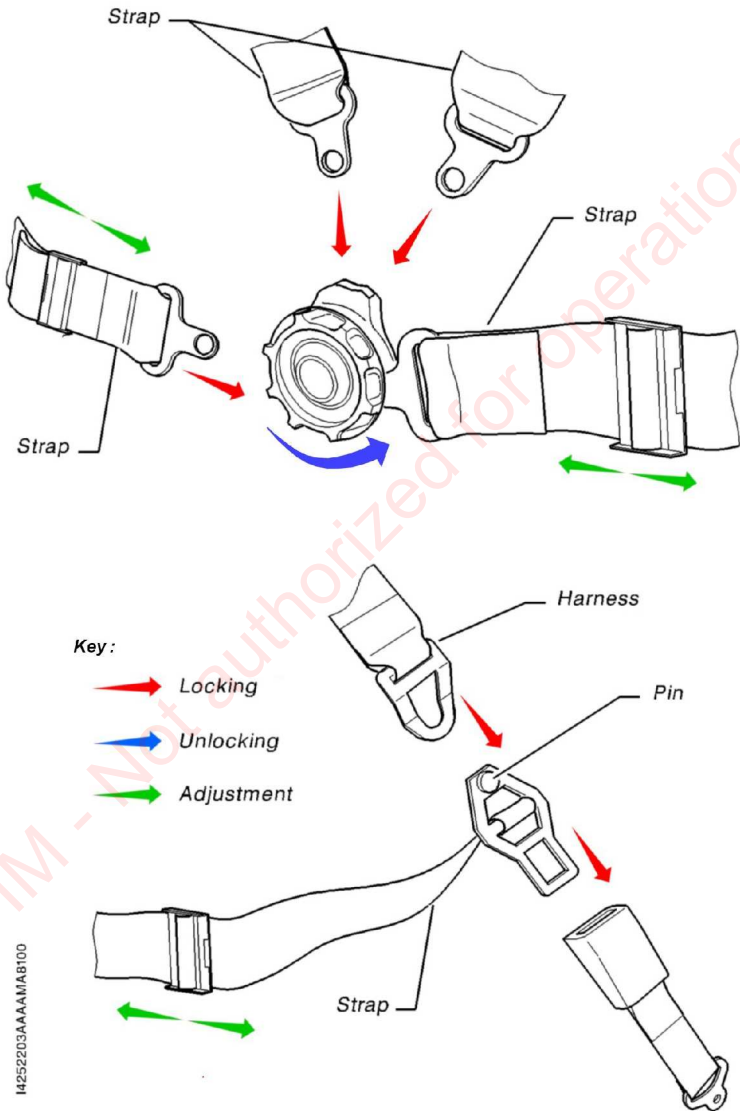


Figure 7.3.13 - Front and rear seat belts, with movable straps, and harnesses



## 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

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 7.4.2

The roll trim is controlled by a trim tab attached at trailing edge of the L.H. 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.

- 1) Pedestal assembly
- 2) Control wheels
- 3) Fuselage roll lever
- 4) Spoiler
- 5) Aileron
- 6) Aileron control in wing
- 7) Spoiler control

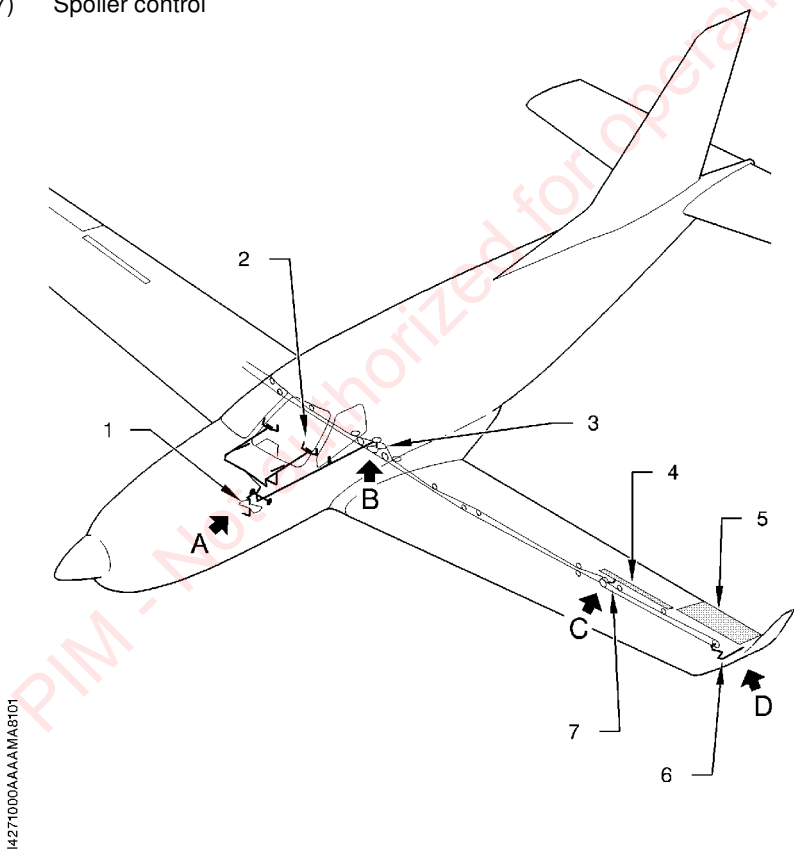
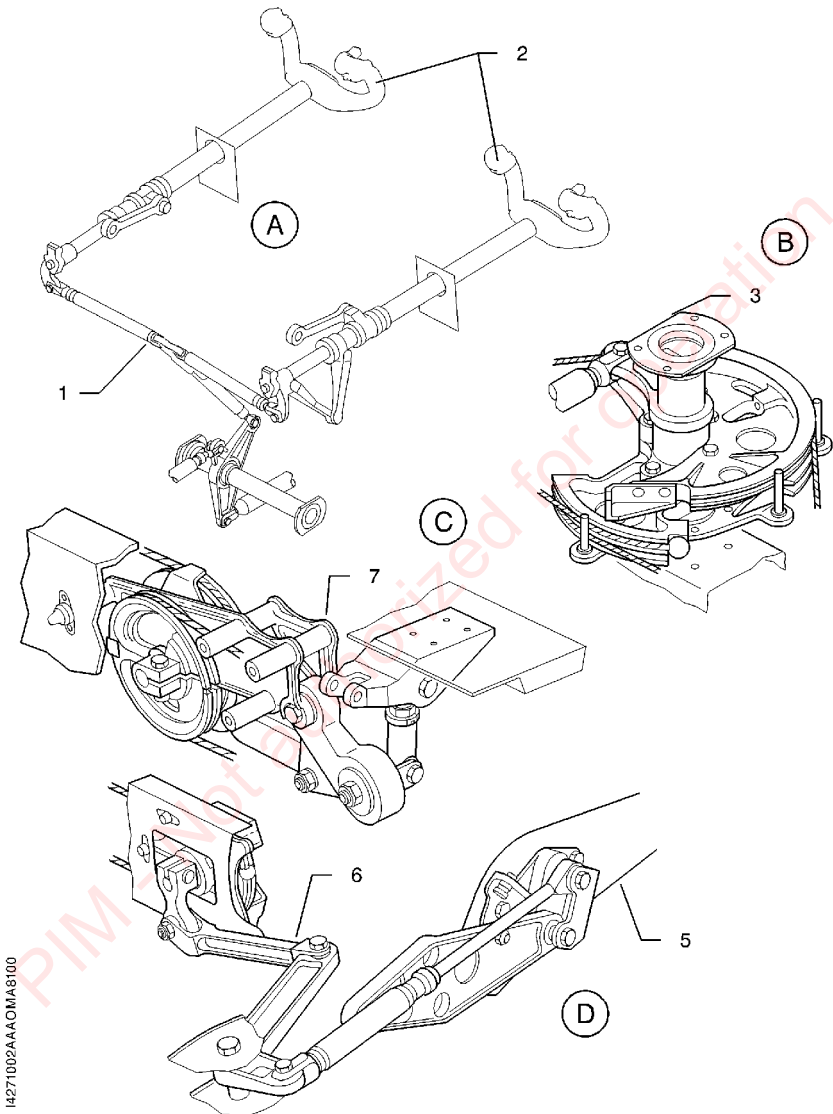


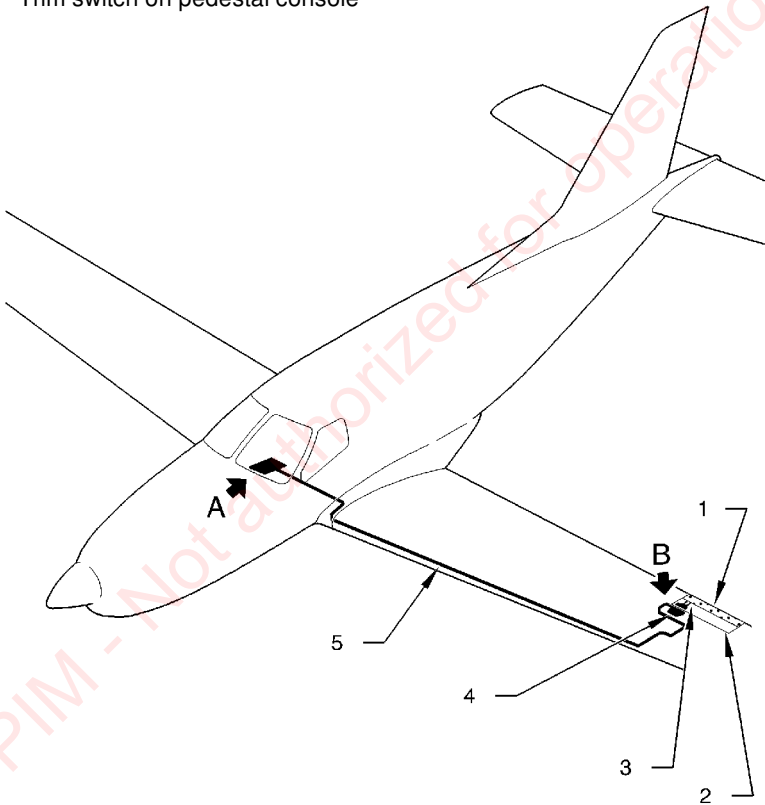
Figure 7.4.1 (1/2) - Roll



14271002AAACOMAB100

Figure 7.4.1 (2/2) - Roll

- 1) Roll trim tab
- 2) Aileron
- 3) Adjustable rods
- 4) Actuator
- 5) Trim tab control wiring
- 6) Trim switch on pedestal console



14271000AAAYMAB003

Figure 7.4.2 (1/2) - Lateral trim

14271004AAADWA8200

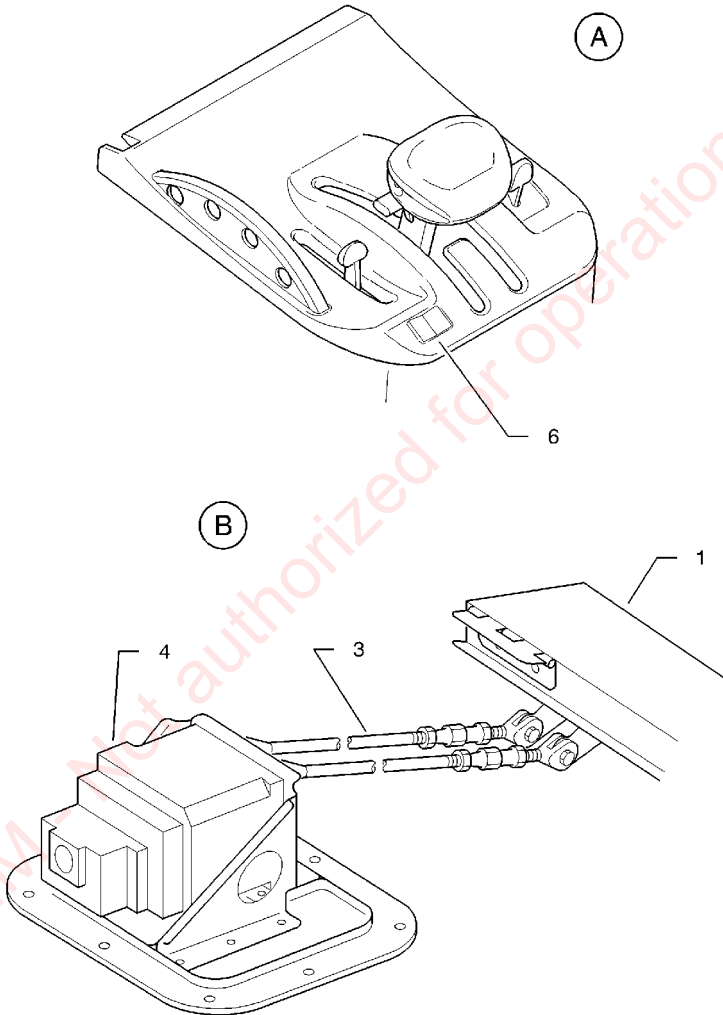


Figure 7.4.2 (2/2) - Lateral trim

**Elevator** - see figure 7.4.3

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 7.4.4

The pitch trim is accomplished through the two anti-tabs located on left and right elevators.

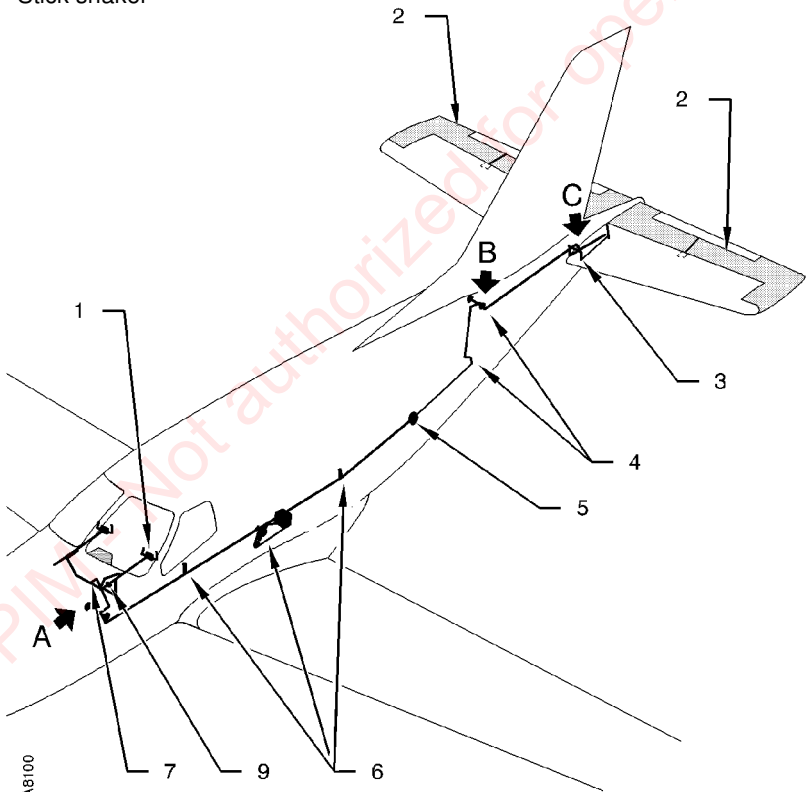
The trim tab can be controlled electrically or manually. It is activated through cables and a chain on two screw actuators attached to the horizontal empennage.

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.

- 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) Actuator
- 9) Stick shaker



14273000AAAAMAB100

Figure 7.4.3 (1/2) - Elevator

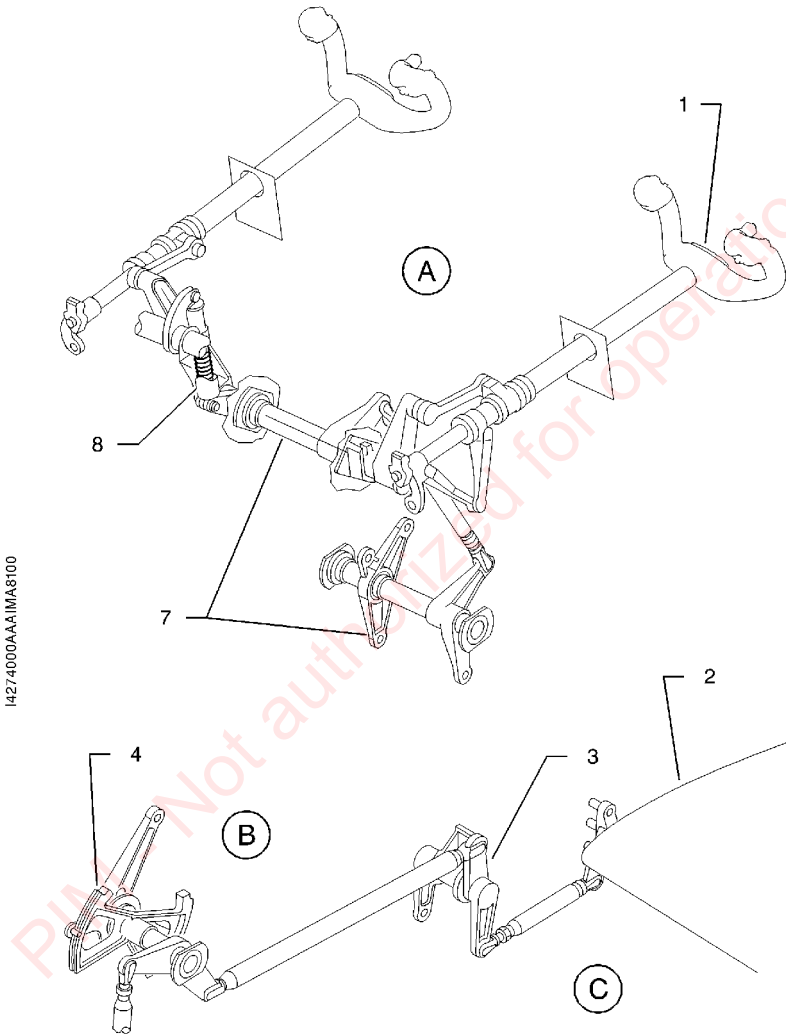
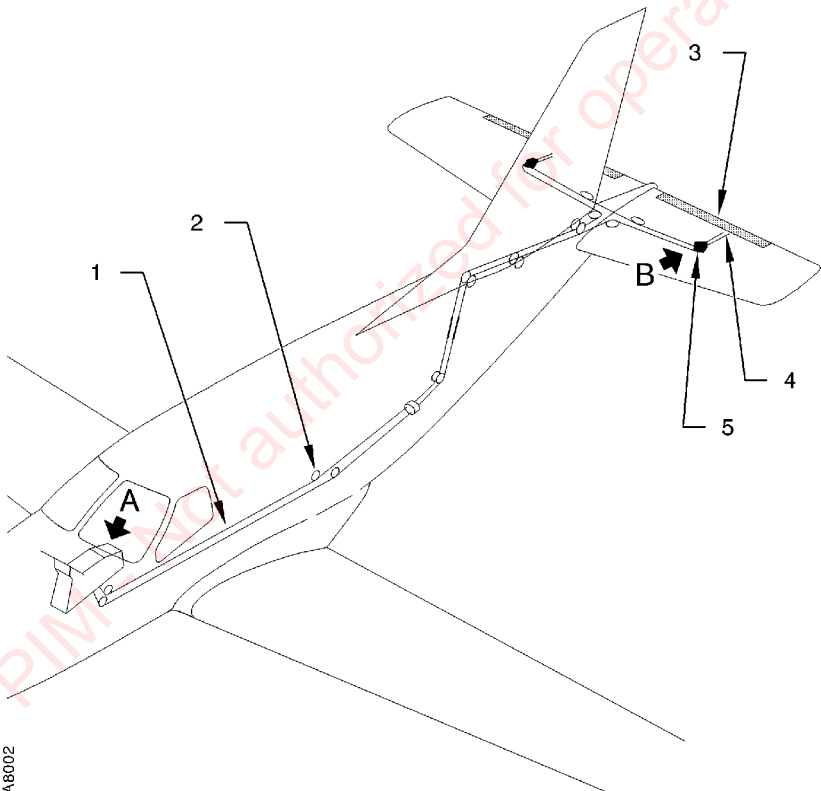


Figure 7.4.3 (2/2) - Elevator



- 1) Cables
- 2) Pulleys
- 3) Pitch trim tabs
- 4) Actuating rods
- 5) Actuator
- 6) Pitch trim manual control wheel
- 7) Electric pitch trim control



14274000AAABMA8002

Figure 7.4.4 (1/2) - Pitch trim

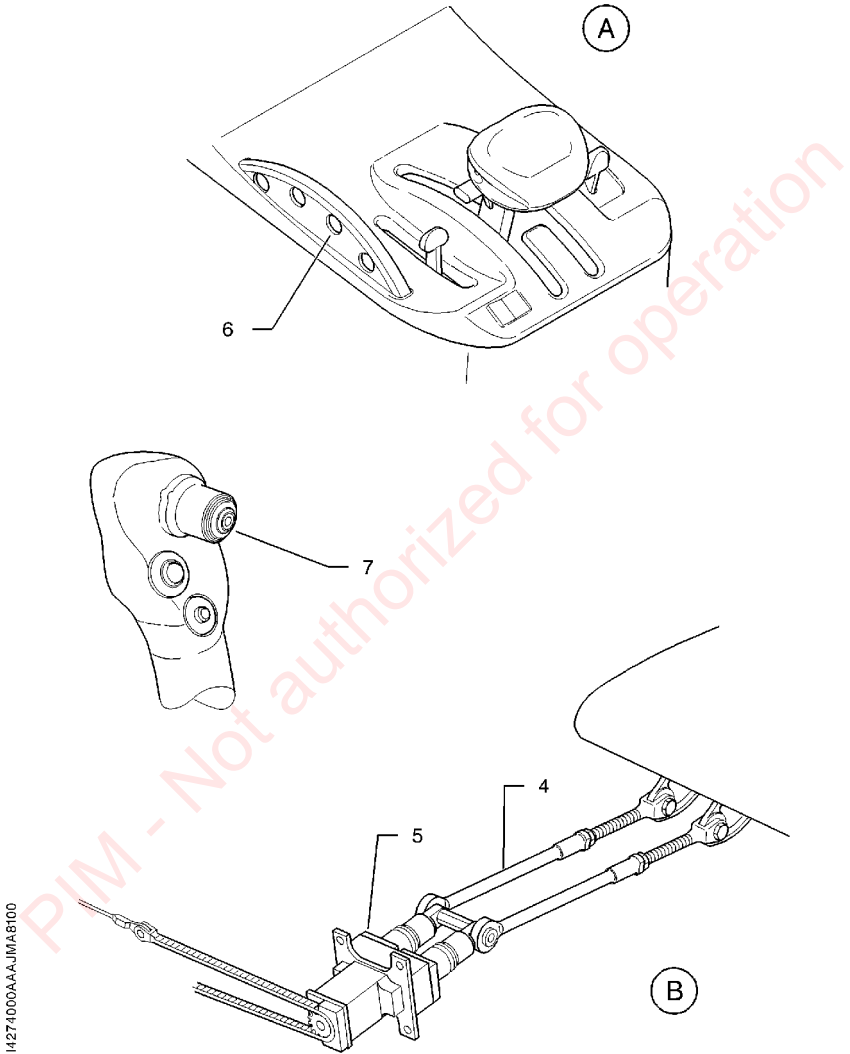


Figure 7.4.4 (2/2) - Pitch trim

**Rudder** - see figure 7.4.5

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 R.H. 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 7.4.6

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.

- 1) Roll / rudder combination bellcrank installation
- 2) Rudder pedals assembly
- 3) Control cables
- 4) Pulleys
- 5) Rudder lever assembly
- 6) Rod
- 7) Rudder
- 8) Nose gear steering rod

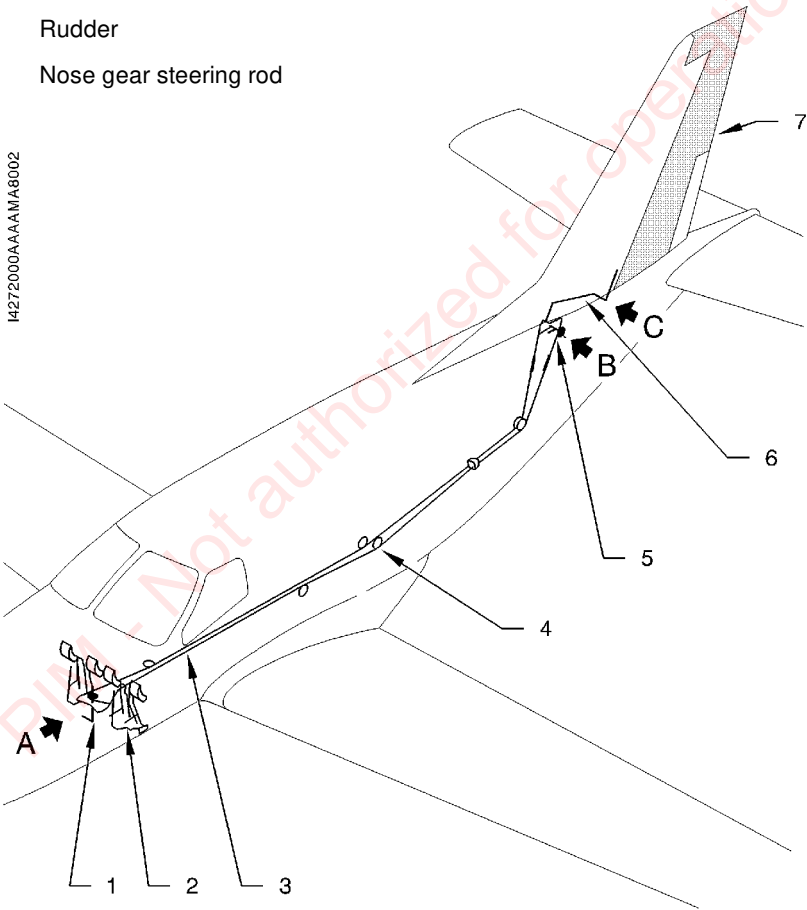
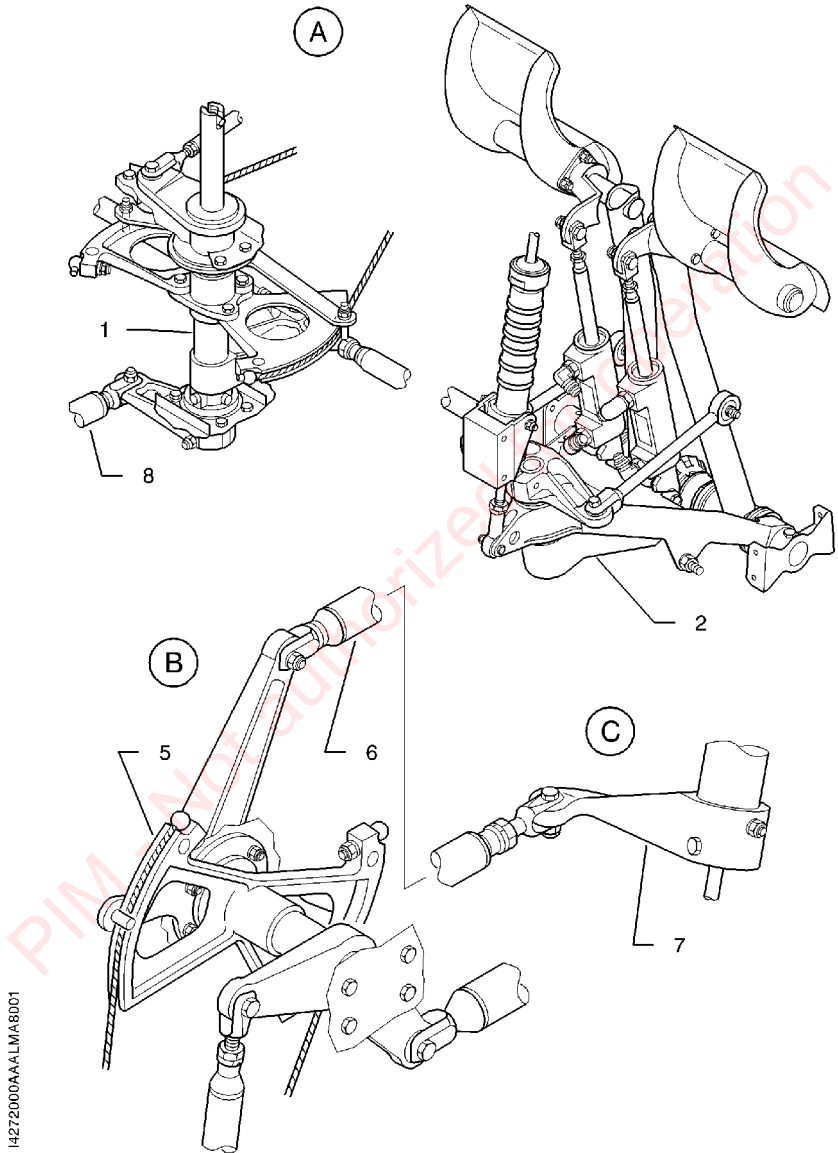


Figure 7.4.5 (1/2) - Rudder



I4272000AAALMA8001

Figure 7.4.5 (2/2) - Rudder

- 1) Trim switch on control wheel
- 2) Actuator
- 3) Rudder trim tab
- 4) Rods
- 5) Rudder trim control wiring

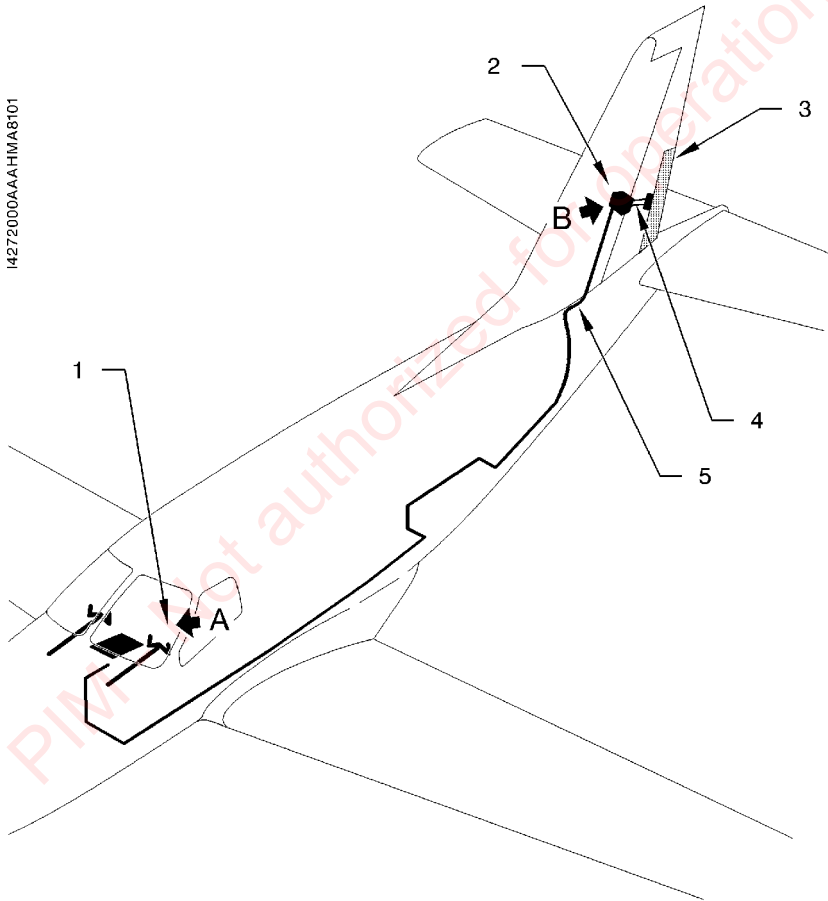
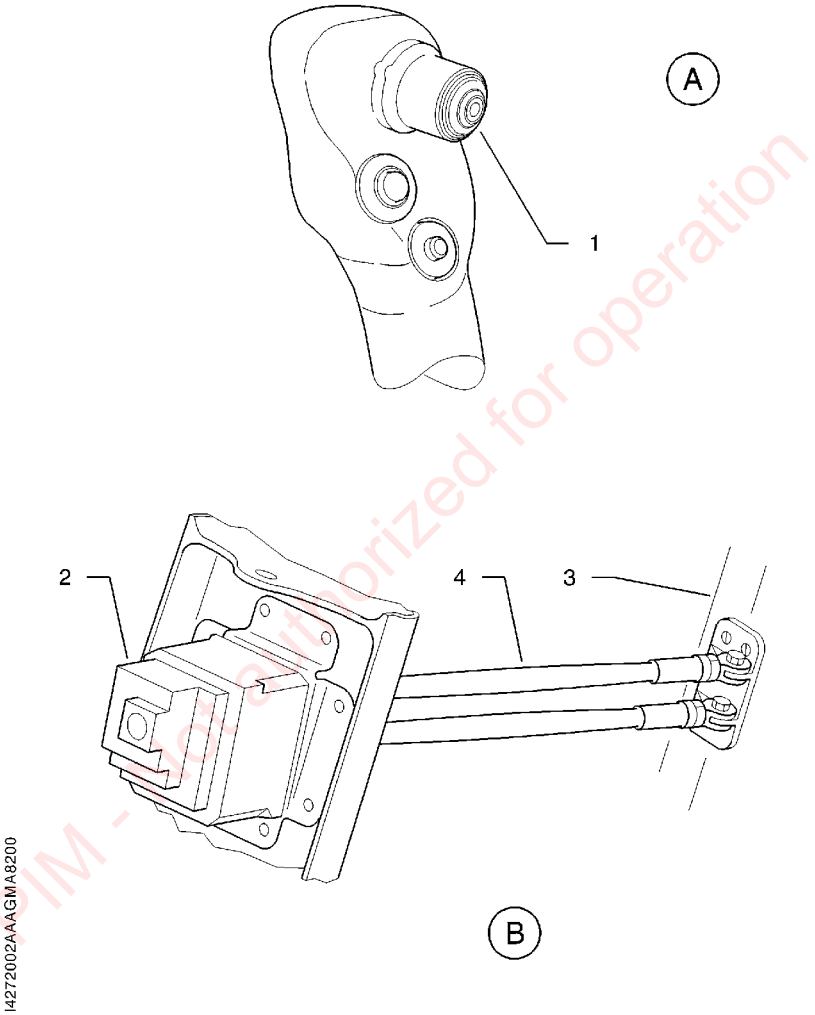


Figure 7.4.6 (1/2) - Rudder trim



14272002AAAGMA8200

Figure 7.4.6 (2/2) - Rudder trim

Intentionally left blank

PIM - Not authorized for operation



## 7.5 - Landing gear

The airplane is equipped with 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.

**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 hydraulic actuating cylinder which also provides up and down locking.

**Nose gear** swivels on two ball joints installed on a tubular steel mount frame. Its operation is accomplished by a hydraulic actuating 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, nose wheel is automatically disconnected.

**Actuating cylinders** have a locking device integrated at both ends. This device maintains landing gear in up or down position.

**Landing gear doors**, two on the nose gear, two on each main landing gear, are driven and kept in UP position by the landing gear itself.

All doors are mechanically kept in 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

LANDING GEAR lever, located on LANDING GEAR panel at the bottom of instrument panel left part, is accomplished by an electric selector actuated through a lever ending with a knob representing a wheel. Operation is carried out by pulling on lever and by putting it in the desired UP (retracted) or DN (extended) position. This selector controls hydraulic generator.

## **Landing gear position indicator** - see figure 7.5.1

Landing gear position indication is accomplished by 5 lights :

- On LANDING GEAR control panel
  - . 3 green indicator lights (one per landing gear),
  - . 1 red warning light GEAR UNSAFE
  - . 1 amber light in the LANDING GEAR lever.
- On MFD CAS window :
  - . **GEAR UNSAFE**

• NOTE •

The amber light flashes while the hydraulic pump is operating to extend or retract the landing gear.

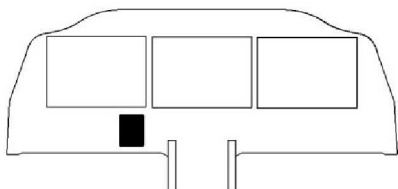
•

When landing gear is correctly retracted, all lights are OFF.

Down-locked correct indication is when there are 3 green indicator lights ON, the GEAR UNSAFE red warning light is OFF, the **GEAR UNSAFE** is OFF and the amber caution light is OFF. All other cases mean the gear is not down-locked.

In case of doubt about landing gear down-locked position, an independent electrical circuit provides a countercheck capability of the indication system. Pressing the CHECK DOWN push-button, located on the landing gear panel, checks the down-lock of the gear making twinkle, at 16 hertz, the green indicator lights corresponding to the down-locked gear.

Pressing the LIGHT TEST push-button allows testing all landing gear panel lights making them flash at 1 hertz.



- 1) Green indicator light
- 2) Red warning light
- 3) LANDING GEAR lever
- 4) CHECK DOWN push-button
- 5) LIGHT TEST push-button
- 6) Amber light

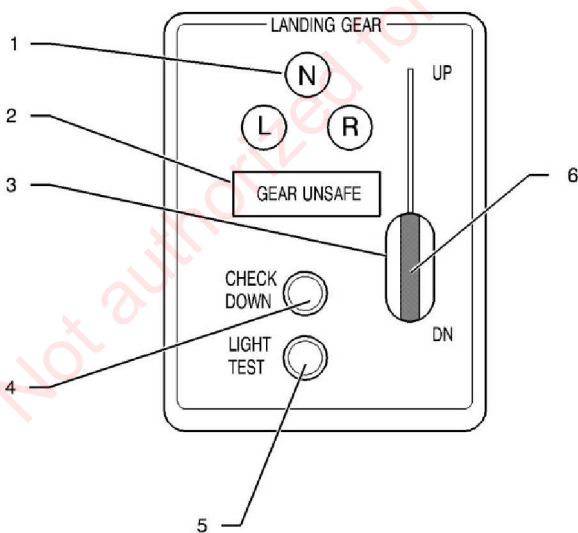


Figure 7.5.1 - Control panel and landing gear indicating

## Safety

### Safety switch - landing gear retraction

A safety switch installed on each main landing gear prevents, by detecting shock strut compression, landing gear accidental retraction when airplane is on ground.

### Landing gear aural warning

Landing gear / Landing gear aural warning alert sounds when :

- THROTTLE is on IDLE position and landing gear is not down-locked,
- flaps are beyond TO position (Takeoff) and landing gear is not down-locked.

• NOTE •

If one of above conditions exists and airplane is in stall configuration, the Stall/landing gear aural warning alert sounds and the control wheel vibrates.

•

### Emergency landing gear extension control - see figure 7.5.2

Emergency landing gear extension control consists of a hand pump and a by-pass selector.

This control is accessible by removing the floor panel located aft of the pedestal.

After bypass selector closing, hand pump operation sends hydraulic fluid directly into landing gear actuators ; landing gear full extension and locking requires up to 110 cycles.

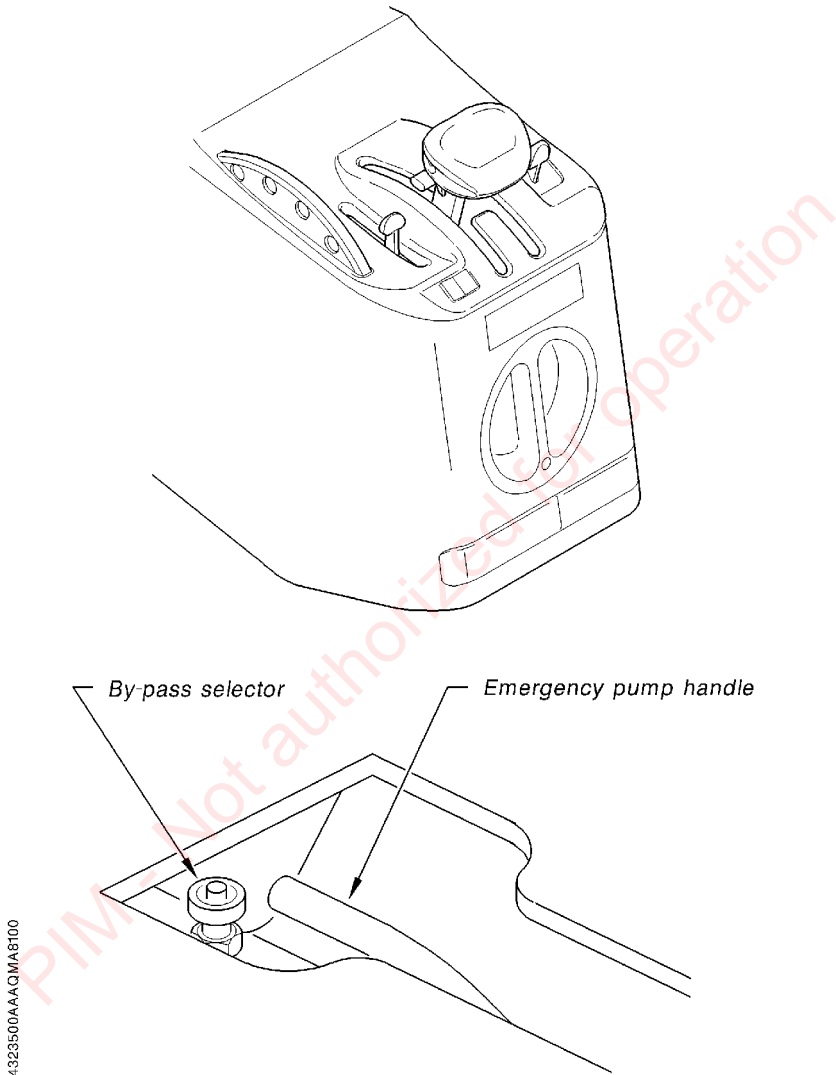


Figure 7.5.2 - Emergency landing gear extension control

## Ground maneuvers

**Nose gear steering control** - see figures 7.5.3 and 7.5.4

Nose gear steering control is combined with rudder pedals and is fitted with a shimmy damper. When one of rudder pedals is fully pushed, nose wheel swivels about 20°. Steering may be increased up to 28° by applying differential braking to each side.

Airplane may be towed by attaching a steering or towing bar on nose gear, refer to chapter 8.6 for operation. In that case nose wheel steering angle is limited to  $\pm 28^\circ$ .

### Minimum turn diameter

Minimum turn diameter, figure 7.5.4, is obtained by using nose gear steering and differential braking.

▲ **CAUTION** ▲

Since tight turns lead to untimely tire wear, turns should be made using the largest possible turning radius.



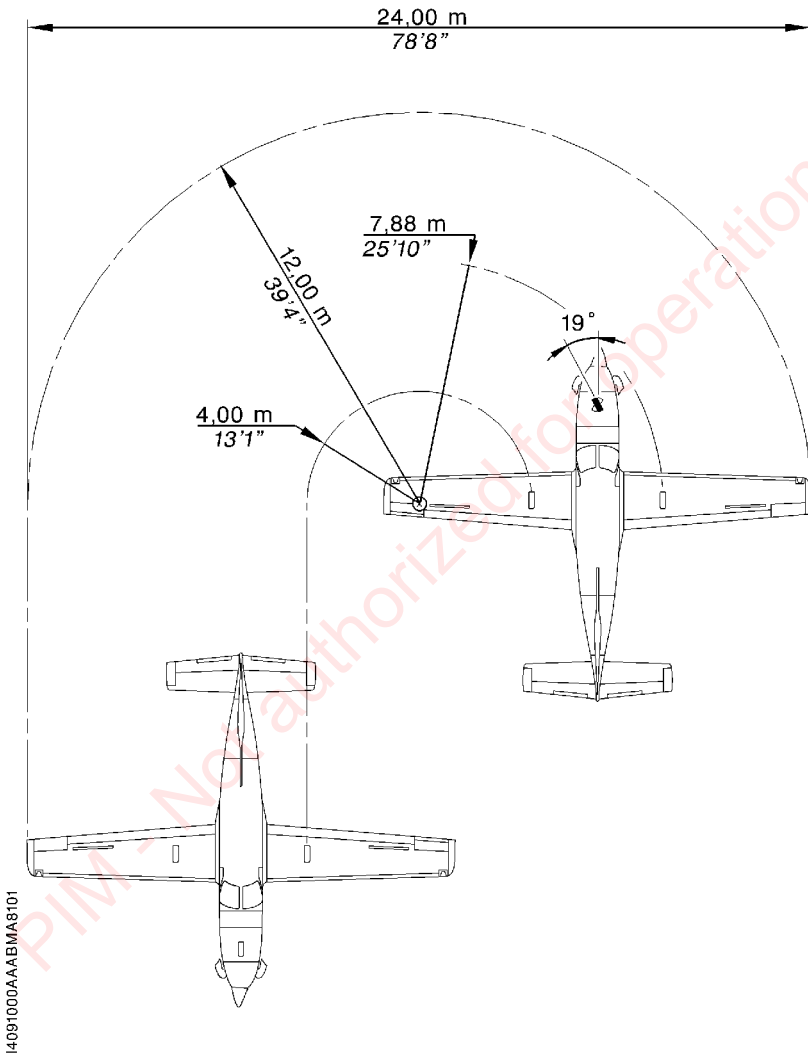


Figure 7.5.3 - Minimum turn diameter  
(Full rudder pedals travel without using differential braking)

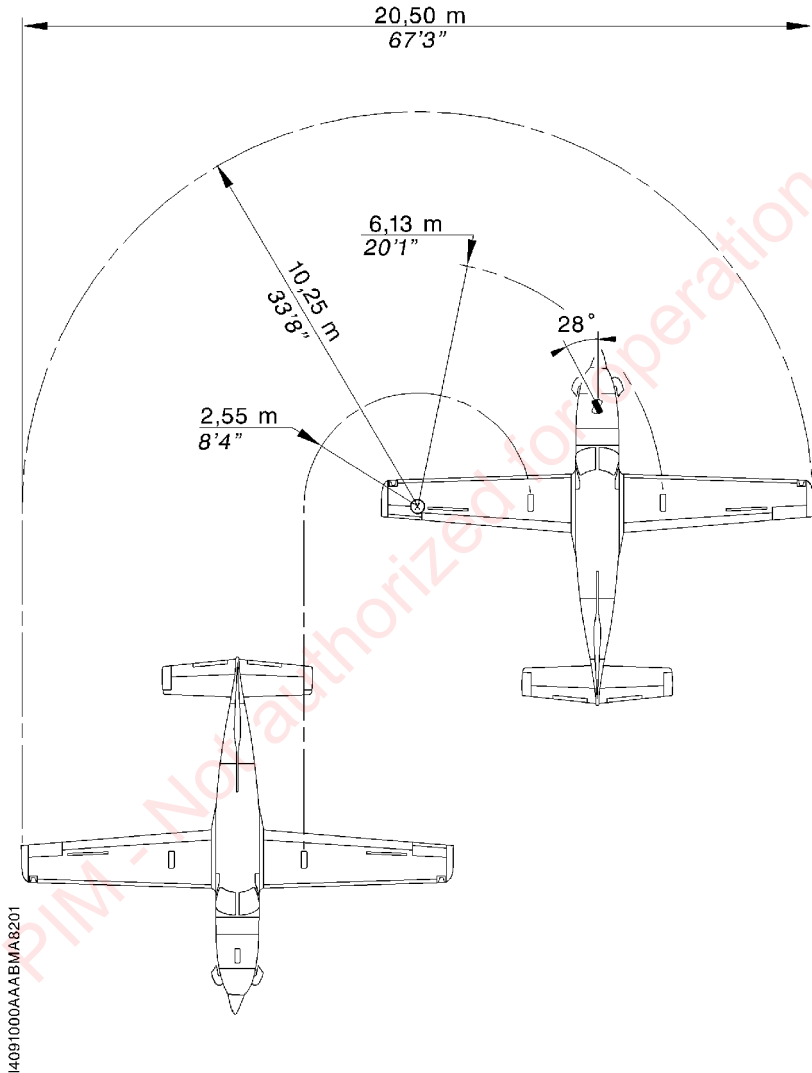


Figure 7.5.4 - Minimum turn diameter  
(Full rudder pedals travel by using differential braking)



**Brake system** - see figures 7.5.5 and 7.5.5A

Airplane is equipped with a hydraulically actuated disc braking system installed on the main landing gear wheels.

Each toe brake at L.H. and R.H. stations is equipped with a master cylinder which sends hydraulic pressure to the corresponding disc brake : L.H. pedals L.H. brake ; R.H. pedals R.H. brake. This differential braking helps maneuvering during taxiing.

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

A master cylinder, actuated by a servo-motor, sends hydraulic pressure to the disc brakes when landing under HomeSafe function.

**HS ABN BRAKES** is displayed in the CAS window if the servo-motor is operating.

>> *All*

**Parking brake** - see figures 7.5.5, 7.5.5A and 7.5.6

Parking brake control consists of a control knob located on pilot's side lower instrument panel and a valve which regulates brake pressure.

To apply the parking brake, press on toe brake of rudder pedals and set the control knob to ON.

**PARK BRAKE** lights on when the control knob is set to ON.

• NOTE •

Operating the parking brake knob without applying pressure on rudder pedals does not cause the wheels to be braked.



▲ 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 toe brake of rudder pedals and set the control knob to OFF. Check at the same time that **PARK BRAKE** disappears.

- >> Without HomeSafe emergency function (Pre-MOD70-0650-34A)

- 1) Reservoir
- 2) Vent
- 3) R.H. station master cylinders
- 4) PARK BRAKE control knob
- 5) PARK BRAKE valve
- 6) Drain
- 7) Pilot's station master cylinders
- 8) L.H. brake assembly
- 9) R.H. brake assembly

Figure 7.5.5 (1/2) - Brake system

Key

- █ Supply hose
- █ Flexible pressure pipe
- █ Rigid pressure pipe

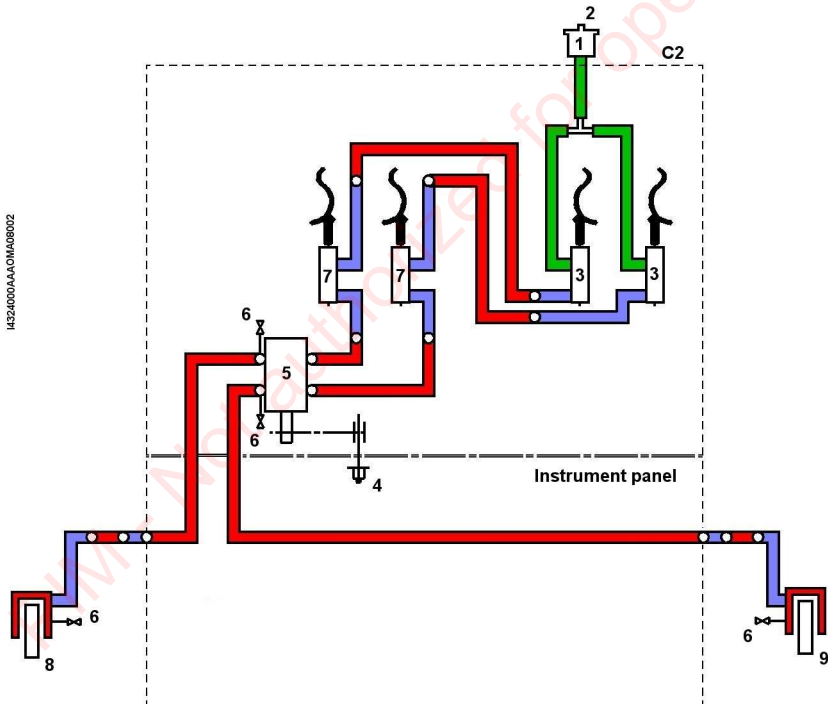


Figure 7.5.5 (2/2) - Brake system

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

- 1) Reservoir
- 2) Vent
- 3) HomeSafe braking servo-actuator
- 4) HomeSafe master cylinder
- 5) R.H. station master cylinders
- 6) PARK BRAKE control knob
- 7) PARK BRAKE valve
- 8) Drain
- 9) Pilot's station master cylinders
- 10) L.H. brake assembly
- 11) R.H. brake assembly

Figure 7.5.5A (1/2) - Brake system

Key

- █ Supply hose
- █ Flexible pressure pipe
- █ Rigid pressure pipe

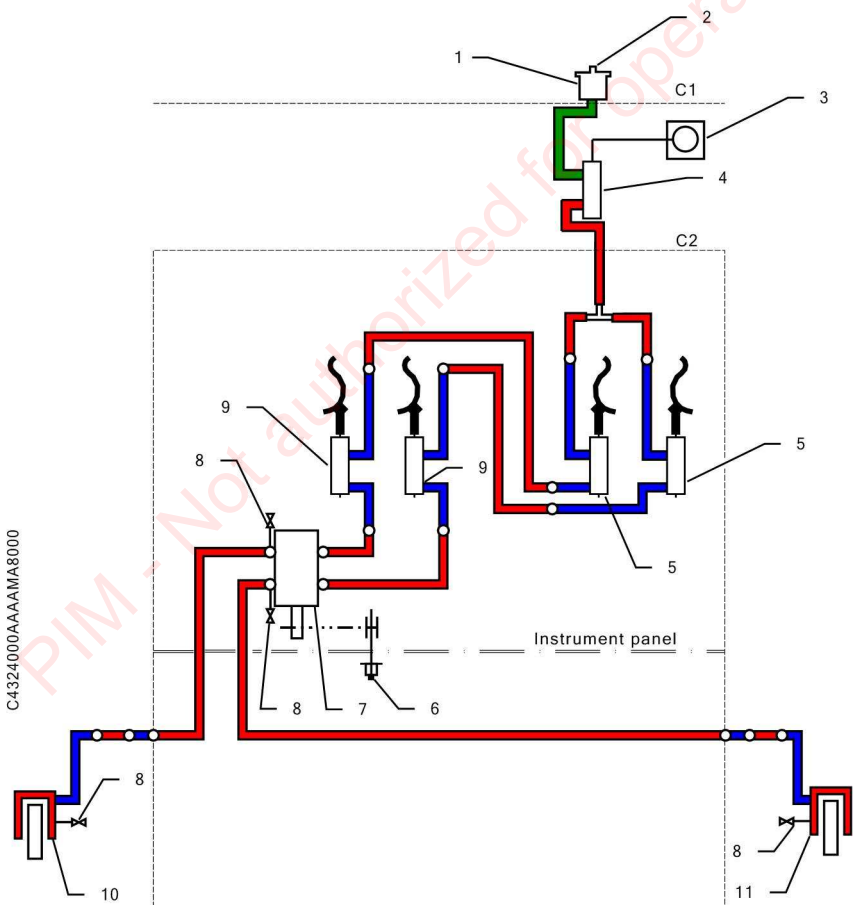
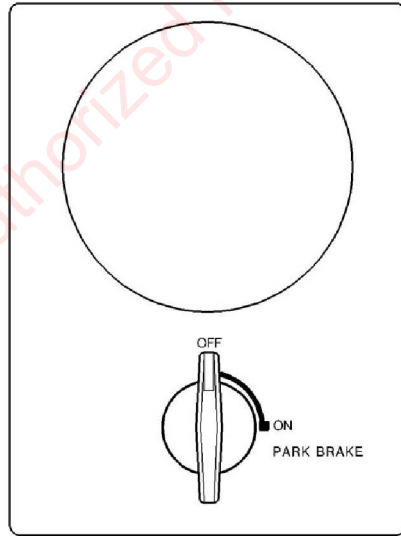
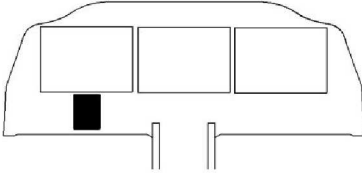


Figure 7.5.5A (2/2) - Brake system

■ >> All



14351000AAAAMA18300

Figure 7.5.6 - Brake system

## 7.6 - Powerplant

### **Turboprop engine operation** - see figure 7.6.1

The PRATT & WHITNEY CANADA turboprop engine (PT6A-66D model) is a free turbine engine rated at 850 SHP and developing a thermodynamic power of 1825 ESHP.

Intake air enters engine through an annular casing and is then ducted toward compressor. The latter consists of four axial stages and one single centrifugal stage assembly to form a whole assembly. Compressed air and fuel are mixed and sprayed into combustion chamber by fuel nozzles. 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 first one (gas generator turbine) drives compressor assembly and accessories, the two other ones (power turbines), independant from the first one, drive propeller shaft through a reduction gear box. Hot gases are evacuated through two exhaust stubs located laterally on both sides forward of engine cowling.

All engine driven accessories, except power turbine tachometer, propeller governor and overspeed governor are installed on accessory gearbox located rearward of engine.

- 1) Propeller governor
- 2) Exhaust stub
- 3) Axial compressors
- 4) Accessory gearbox
- 5) FCU Fuel Control Unit
- 6) Oil to fuel heater
- 7) Input coupling shaft
- 8) Air intake
- 9) Centrifugal impeller
- 10) Combustion chamber
- 11) Compressor turbine
- 12) Power turbine 1st stage
- 13) Power turbine 2nd stage
- 14) Power turbine shaft

Figure 7.6.1 (1/2) - Powerplant



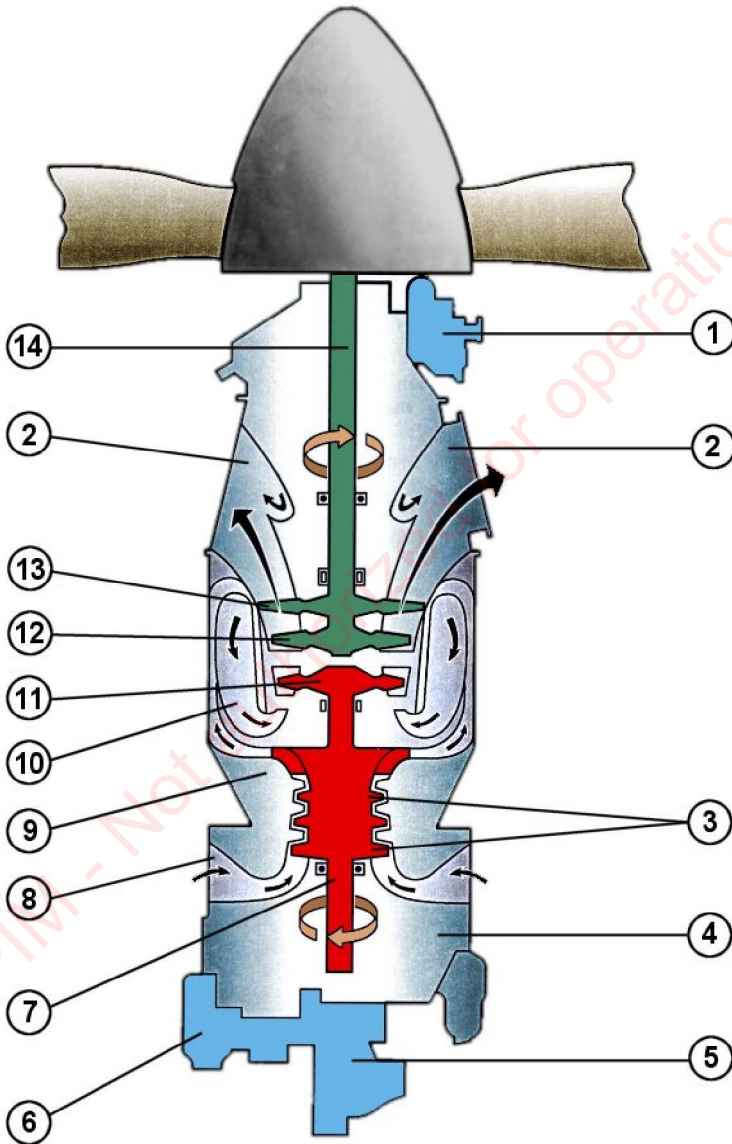


Figure 7.6.1 (2/2) - Powerplant

**Engine control levers** - see figure 7.6.2

Engine operation requires use of two levers located on pedestal console in cabin :

- THROTTLE and its detent for reverse, GA push-button and AT DISC push-button,
- MAN OVRD control for emergency fuel regulation,
- Thumbwheel for lever friction.

- 1) THROTTLE
- 2) Thumbwheel
- 3) MAN OVRD control
- 4) Reverse
- 5) GA push-button
- 6) AT DISC push-button

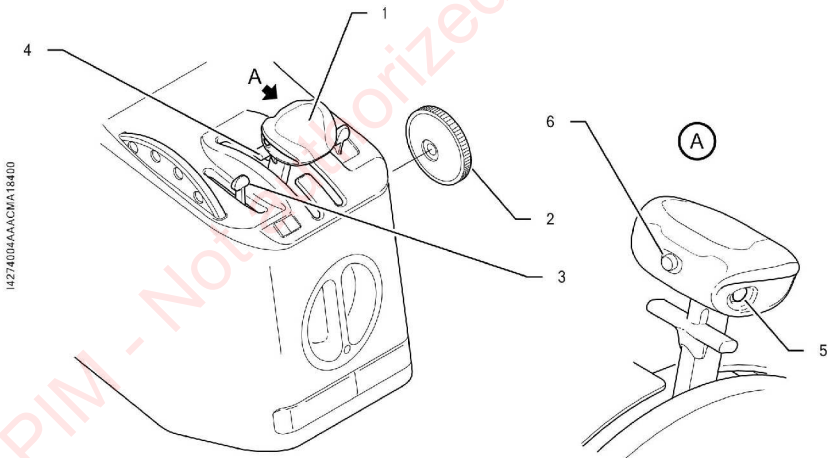


Figure 7.6.2 - Engine control levers

**THROTTLE** - see figure 7.6.3

The THROTTLE has two operating modes : thrust mode and condition mode.

- Thrust mode

The THROTTLE is in vertical position. It modulates engine power from full reverse to max power.

Engine running, the throttle rearward displacement, past the lock using the detent, allows to control :

- the engine power in the Beta range from idle to maximum reverse,
- the Beta valve to select the propeller pitch in reverse.

Return to idle position is accomplished by pushing the THROTTLE forward.

▲ **CAUTION** ▲

Do not move the cockpit THROTTLE into the propeller reverse position or damage to the linkage will result.

Reverse may only be selected with engine running and propeller turning.

Any rearward effort on the THROTTLE, past the idle stop, may damage or break the flexible control cable.



When engine is shutdown, there is no oil pressure in the propeller and the feathering spring locks the Beta ring and the propeller reversing interconnect linkage on the engine.

- Condition mode

The THROTTLE is moved to the condition side by lifting the knob.

As long as the THROTTLE is in condition mode, the propeller is in feather position. The THROTTLE can be positioned to CUT OFF, idle LO-IDLE or idle HI-IDLE.

Change from idle HI-IDLE to LO-IDLE position requires moving the THROTTLE rearwards.

Change from idle LO-IDLE to CUT OFF position is only possible after having overridden the idle gate. To override idle gate, raise the THROTTLE and move it rearwards.

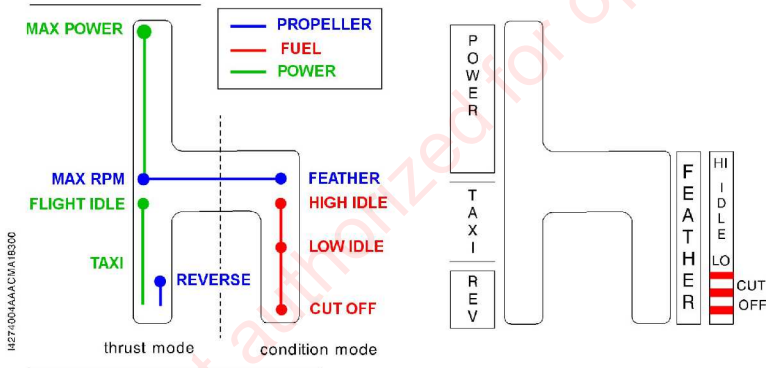


Figure 7.6.3 - THROTTLE

**Autothrottle mechanical assembly**

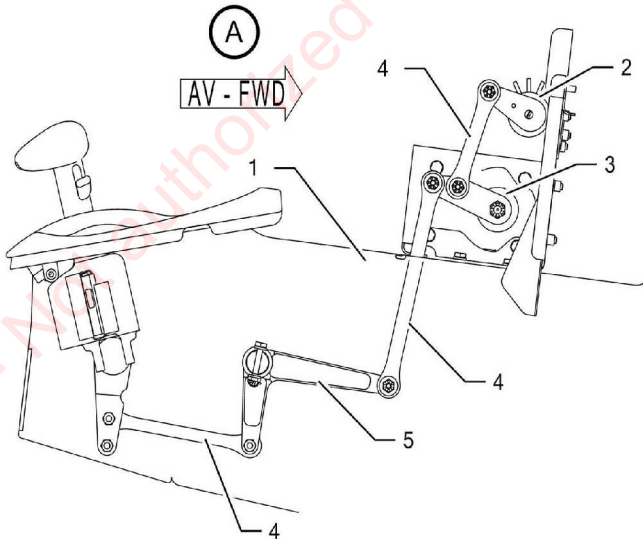
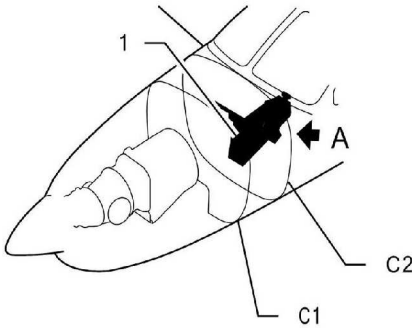
The autothrottle function actuates the THROTTLE by an assembly of rods and levers permitting to link the GARMIN servo-motor and the potentiometer.

The THROTTLE movements are defined by the servo-motor.

The THROTTLE position is measured by the potentiometer.

The autothrottle controls are integrated within the AFCS control panel which is located above the MFD.

- 1) Pedestal assembly
- 2) Potentiometer
- 3) Servo-motor
- 4) Rod
- 5) Lever



I4761006AAAAMA8000

Figure 7.6.4 - Autothrottle

**MAN OVRD control** - see figure 7.6.2

MAN OVRD control (3) is normally notched in full backward position. In case of FCU or THROTTLE failure, it allows setting engine power manually.

To quit full backward position (notched), move the MAN OVRD control forward overriding the indexation.

## • NOTE •

The power available if the THROTTLE fails will be limited by the position of the lever.

•

Autothrottle is disconnected when the MAN OVRD lever is used.

**Lever friction** - see figure 7.6.2

A thumbwheel located on right side of pedestal console allows the clamping of the THROTTLE lever and MAN OVRD lever to prevent slipping of the controls once set.

**Engine instruments**

Engine indicating consists of :

- engine torque expressed in percent (%), TRQ
- propeller speed in RPM, PROP RPM
- generator rotation speed expressed in percent (%), Ng
- ITT expressed in °C,
- oil pressure expressed in PSI.
- oil temperature expressed in °C.

## • NOTE •

Engine monitoring is ensured by **ITT**, **NG**, **ITT HI**, **NG HI** and **OIL PRESS**. Refer to the GARMIN Pilot's Guide for further details.

•

## Single engine indicator - see figures 7.6.5, 7.6.6 and 7.6.7

The single engine indicator simplifies the monitoring of engines 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.
- 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/START or engine running) and parameter level (i.e. normal, amber or red).
  - When the engine is OFF and during engine start, 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.

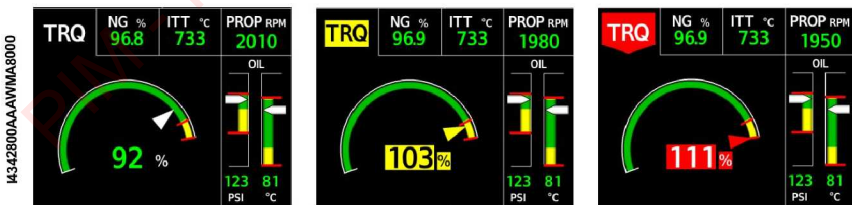


Figure 7.6.5 - Priority indication = TRQ



K4342800AAA/VWMA8100



Figure 7.6.6 - Priority indication = NG

K4342800AAA/VWMA8200



Figure 7.6.7 - Priority indication = ITT

## Engine lubrication

Engine oil is in a tank incorporated into the powerplant. It ensures lubrication and engine cooling. A cooler located on left side in engine compartment maintains oil temperature within limits. Oil flow into the cooler is metered by a thermostatic valve. Engine oil also supplies propeller governor and engine torque meter.

A chip detection system enables the monitoring of engine oil system. The system includes one chip detector installed on propeller reduction gear box and a second chip detector installed on engine accessory gear box. In case of chip detection, **CHIP** will appear on integrated flight deck system screen.

Lubrication system content, cooler included, is 12.7 quarts (12 litres). A graduated dipstick allows checking oil quantity in system. A visual oil sight glass, located on engine left side, allows a rapid checking of oil level.

• NOTE •

For checking and oil filling-up, refer to section 8.

•

**Engine starting** - see figure 7.6.8

### Ignition function

Ignition system consists of an ignition unit and two spark igniter plugs in powerplant, a three-position IGNITION switch OFF - AUTO - ON located on ENGINE START panel at upper panel.

Ignition unit supplies, from 28-volt source, high voltage current necessary to spark igniter plugs. When IGNITION switch is positioned to AUTO, ignition unit supply is ensured during the engine start.

**IGNITION** lights on as long as ignition unit is supplied.

### Auto ignition function

When Ng is lower than 51 % and IGNITION switch is positioned to AUTO and THROTTLE is not positioned to FEATHER, then, the auto ignition system provides current to spark igniter plugs.

**IGNITION** lights on as long as ignition unit is supplied.

When Ng is higher than 65 % or THROTTLE is positioned to FEATHER then, the system is inactive.

**Starter function**

Starting system consists of STARTER switch located on ENGINE START panel, starter generator and ignition circuit (Refer to paragraph Ignition function).

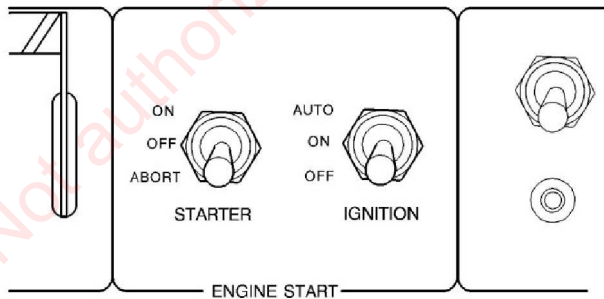
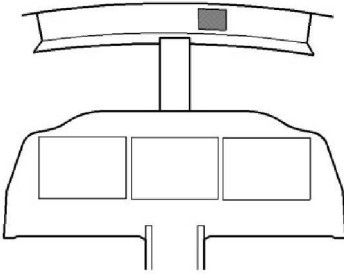
Starting procedure is semi-automatic. Setting STARTER switch to ON connects the starter generator which drives powerplant. **STARTER** lights on indicating that the starter generator is operating.

Starter operation is stopped automatically by the electrical power system once a sufficient starter-generator speed is reached or after 60 s. The pilot has the capability to interrupt the start process anytime by setting momentarily the STARTER switch to the ABORT position.

**▲ WARNING ▲**

**Powerplant starting must be performed by qualified personnel and following procedures and parameters described in section 4 Normal procedures.**





14240000AAAJMAB100

Figure 7.6.8 - Engine starting

## Engine air inlet




Engine air inlet is located at front lower section of engine cowling. Air inlet port is protected against icing by a hot air flux provided by engine. Air is driven throughout a duct in engine casing before entering 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).

Separator consists of two movable vanes. During normal operation, air is conducted directly towards engine air inlet. To separate particles suspended in the air, vanes are positioned to force 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 inertial separator vanes is electrically controlled by INERT SEP switch located on DE-ICE SYSTEM panel. When INERT SEP switch is set to ON, an electric actuator activates vanes ; **INERT SEP ON** lights on when vanes have reached their maximum deflection and remains visible as long as switch remains ON. 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 CAS window.

Inertial separator is automatically activated when the Ice Detection System is in 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 DE ICE SYSTEM mode switch is set to AUTO and ice is detected by the ice detector. Description of Ice Detection System is presented in chapter 7.13.

The table hereafter gives the CAS messages and the status light colors corresponding to the system state.

System state	Status lights	CAS
OFF		
ON (AUTO mode)		<b>INERT SEP ON</b>
ON (MAN mode)		<b>INERT SEP ON</b>
FAIL		<b>INERT SEP FAIL</b>

## **Exhaust system**

Exhaust gases are evacuated through exhaust stubs located on sides of engine cowlings.

## **Engine accessories**

All engine driven accessories, except power turbine tachogenerator (Np), propeller governor and overspeed governor, are installed on accessory gearbox located rearwards of engine.

### **Oil pump**

Oil pump is a self-controlled gear pump located at the bottom of oil casing.

### **Fuel high pressure pump (HP)**

Fuel high pressure pump is installed on accessory gearbox. It supplies fuel nozzles, flow being controlled by fuel regulator (FCU). Fuel provided by engine driven main pump (mechanical) enters high pressure pump through a filter, then it is discharged under pressure into fuel regulator (FCU) through a second filter. In case of contamination of this second filter, a by-pass valve allows fuel to go directly from high pressure pump to the regulator.

### **Compressor turbine tachogenerator (Ng)**

Compressor turbine tachogenerator (Ng) is attached on accessory gearbox. It supplies a voltage which is transmitted to the GARMIN system for display on the MFD, under normal display conditions.

### **Power turbine tachogenerator (Np)**

Power turbine tachogenerator is attached on the right side of the reduction gearbox. It supplies a voltage which is transmitted to the GARMIN system for display on the MFD, under normal display conditions.

### **Torque transmitter**

Torque transmitter is attached on the torque limiter, it measures torque produced by the power turbine by comparing oil pressures (reduction gear and power turbine) and converts pressure difference into a voltage. This voltage is transmitted to the GARMIN system for display on the MFD, under normal display conditions.

### **Propeller overspeed limiter**

Propeller overspeed limiter is installed on left side of the reduction gear box. It prevents a propeller overspeed in case of main propeller governor failure.

Propeller overspeed limiter is equipped with a solenoid which makes feather the propeller when the THROTTLE is in condition mode.

**Torque limiter**

Torque limiter is located on right side of the reduction gear box. It is rated to limit engine torque to 109-110 % at sea level.

**Propeller**

Airplane is equipped with a composite five-bladed, constant-speed and full-feathering propeller.

**Regulation**

Propeller governor located on engine maintains rotation speed to the nominal value of 2000 RPM. Regulation is obtained through propeller blade pitch variation : counterweights drive propeller blades toward high pitch (low RPM) whereas oil pressure delivered by governor drives back blades toward low pitch (high RPM).

Propeller governor allows feathering either by voluntary pilot action via THROTTLE (Condition mode) or automatically in case of engine failure or shutdown.

Propeller reverse pitch allows reduced taxiing speed or landing roll. Change from idle to reverse position is performed with THROTTLE (Thrust mode) - refer to paragraph Engine controls.

Intentionally left blank

PIM - Not authorized for operation



## 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 lever 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).

• NOTE •

If needed, autothrottle stability and damping can be improved by increasing the friction on the THROTTLE lever using the thumbwheel located on right side of the pedestal console - see Figure 7.6.2.

For more information on AT modes and cockpit controls, refer to GARMIN Pilot's Guide, Autothrottle section.

For more information on SEI, refer to section 7.6 Powerplant, Single engine indicator and to 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 all engine parameters never remain above the following cautionary threshold values :

- TRQ > 100 %
- Ng > 103.0 % (**NG HI** CAS message)
- ITT > 820°C (**ITT HI** CAS message)

• 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 % (TRQ indications become amber). 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 extension or retraction of the inertial separator.

The engine will only require inspection/maintenance if 110 % torque is exceeded.

•

### AT airspeed protections

AT airspeed protections are complementary to ESP, and operate as follows :

- AT automatically increases engine power to prevent any aircraft underspeed condition.
- AT automatically reduces engine power to prevent any aircraft overspeed condition.

>> *Before GDU v21.45 GARMIN software (Pre-MOD70-0649-00E)*

• NOTE •

Airspeed thresholds taken into account by AT airspeed protections depend on the current flap setting.

•

>> *After GDU v21.45 GARMIN software (Post-MOD70-0649-00E)*

• NOTE •

Airspeed thresholds taken into account by AT airspeed protections depend on the current flap setting and landing gear position.

•

>> *All*

For more information on AT protections, refer to 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 Garmin Mode Controller (GMC).

**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 GMC
- Press the AT DISC push-button on the THROTTLE lever
- Press the AP/TRIM DISC push-button on the control yoke (AP/FD will also be disengaged)

At AT standard disengagement, an **AT** annunciation flashes during approximately 5 s and one "autothrottle" aural alert is generated.

### AT non-standard disengagement

The following will cause non-standard AT disengagement :

- Manually forcing on the THROTTLE lever 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" aural alert is generated, until AT disengagement is acknowledged (i.e. until either the AT DISC push-button of the THROTTLE lever or the AP/TRIM DISC push-button of the control yoke is pressed).

## Engine start or engine air start

- NOTE •

Autothrottle engine protection system is disabled during engine start, thus there is no protection against ITT exceedances.

- 

For additional information on SEI display during engine start, refer to section 7.6 Powerplant, Single engine indicator and to GARMIN Pilot's Guide, Engine Indication System (EIS) section.

## Taxi

Do not engage AT for taxi - refer to section 2.6.2 Autothrottle limits.

## Takeoff

Do not engage AT for takeoff if OAT > ISA + 30°C - refer to section 2.6.2 Autothrottle limits.

If OAT < ISA + 30°C, AT can be engaged for takeoff, as follows :

When the aircraft is lined up on the runway, press the AT button to arm AT (**TO** AT mode is displayed). Then, manually set takeoff torque up to the [70 % - 90 %] range, until AT takes control over the THROTTLE lever. **TO** AT mode and **AT** status both become active.

**TO** AT mode sets and maintains 100 % TRQ.

- 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 section 5.10 Climb performance.

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 when the inertial separator is OFF. Its value corresponds to the Maximum Climb power - refer to chapter 5.8 Engine operation.

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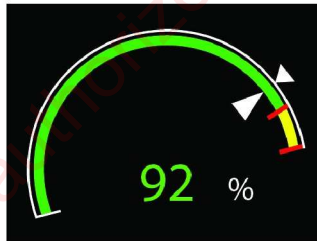


Figure 7.7.1 - Maximum Climb Torque

## 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 engine protection (engine power reduction associated with the **NG HI** and/or **ITT HI** CAS messages).

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**), or Pilot-Defined Cruise. 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**.

### Torque target display

In MAN or FMS mode, the optimum torque index is displayed on the torque gauge when the inertial separator is OFF. Its display depends on the selected cruise schedule - refer to GARMIN Pilot's Guide, Vertical Navigation section.

If either Recommended Cruise schedule or Maximum Cruise schedule is selected, the Optimum Cruise Range is displayed. The lower and upper ends of the Optimum Cruise Range arc respectively correspond to the Recommended Cruise and Maximum Cruise power - refer to chapter 5.8 Engine operation.

If Long Range Cruise schedule is selected, the white "T" is displayed, which corresponds to the AT managed torque target in Long Range Cruise (50 %).

If Pilot-Defined Cruise schedule is selected, no torque index is displayed on the torque gauge.

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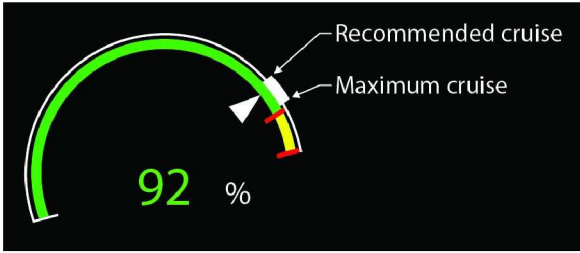


Figure 7.7.2 - Optimum Cruise Range

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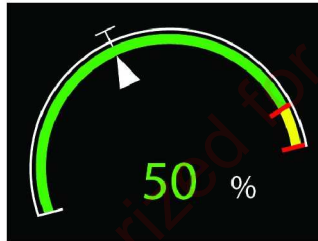


Figure 7.7.3 - Long Range Cruise

### Examples

Example, with no speed constraints :

- FL 280, Selected Cruise Schedule : Maximum Cruise. No Speed Constraint.
- AT mode : **MXCR**
- Managed AT TRQ = 100 %
- IAS  $\approx$  200 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 250 KT**
- Managed AT TRQ = 50 %
- IAS  $\approx$  175 kt (maximum airspeed corresponding to torque value)

- Altitude 3 000 ft, Selected Cruise Schedule : Maximum Cruise. Speed Constraint = 120 kt.
  - AT mode : **SPD 120 KT**
  - Managed AT TRQ  $\approx$  30 % (torque corresponding to target airspeed)
  - 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 and maintains engine power to approximately 10 % TRQ. 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.

## 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 section 2.6.2 Autothrottle limits.

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 aircraft 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 GA push-button is pressed, both of the following simultaneously occur :

- The AT **TO** mode becomes active. **TO** AT mode sets and maintains 100 % TRQ.
- The FD **GA** lateral and vertical modes become active.

With the AT disengaged, if the GA push-button is pressed, only the FD **GA** 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)
<b>PIT</b>	<b>SPD XXXKT</b>	<b>SPD XXXKT</b>
<b>ALT</b> , <b>ALTS</b> , <b>ALTV</b> , <b>LVL</b>	<b>SPD XXXKT</b>	<b>RCR</b> or <b>MXCR</b> or <b>LRCR</b>
<b>VS</b>	<b>SPD XXXKT</b>	<b>SPD XXXKT</b>
<b>FLC</b> (climb)	<b>CLIMB</b>	<b>CLIMB</b>
<b>FLC</b> (descent)	<b>DESC</b>	<b>DESC</b>
<b>GS</b> , <b>GP</b> , <b>PATH</b>	<b>SPD XXXKT</b>	<b>SPD XXXKT</b>
<b>TO</b>	<b>TO</b>	<b>TO</b>
<b>GA</b>	<b>TO</b>	<b>TO</b>
None (FD disengaged)	<b>SPD XXXKT</b>	<b>SPD XXXKT</b>

**7.8 - Fuel system** - see figures 7.8.1 and 7.8.1A

The fuel system comprises fuel tanks, fuel unit, selectors, manual and automatic, electric and mechanical boost pumps, engine fuel system, gaging installation, monitoring installation and drains.

**Fuel tanks**

Fuel tanks are formed by sealed casings 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 near main landing gear, at trailing edge side, the second one near wing root side, at leading edge), a vent valve located on the lower surface, a suction strainer and three level gages.

**Fuel unit**

The fuel unit combines 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 by-pass valve, a clogging indicator and a drain valve.

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

**HomeSafe fuel shut-off valve**

HomeSafe shuts down the engine after landing by closing a fuel shut-off valve in the line between the right fuel tank and the fuel selector.

**HS FUEL SHUTOFF** is displayed in the CAS window if the shut-off valve is closed.

The HomeSafe fuel shut-off valve is prevented from closing when the AUX BP switch is ON. If **HS FUEL SHUTOFF** is ON when the AUX BP switch is ON, it may indicate a mechanical failure of the HomeSafe fuel shut-off valve.

>> *All*

**Tank manual selector** - see figure 7.8.2

The FUEL TANK SELECTOR is located on the pedestal rear face. It allows selecting manually the tank (R or L) to be used and setting unit to OFF. To change from L position to OFF position, turn the selector clockwise (L → R → OFF) ; change from R position to OFF position requires a voluntary action from the pilot (pull and turn). The pull and turn maneuver prevents involuntary operation. When the unit is set to OFF,

**FUEL OFF** remains visible.

■ >> Without HomeSafe emergency function (Pre-MOD70-0650-34A)

- |                                   |                        |
|-----------------------------------|------------------------|
| 1) Flow divider                   | 14) Fuel unit          |
| 2) Flowmeter                      | 15) Filter drain       |
| 3) Collector tank                 | 16) Fuel return pipe   |
| 4) Fuel regulator                 | 17) Filling port       |
| 5) High pressure pump (HP)        | 18) NACA scoop         |
| 6) Oil to fuel heater             | 19) Tank vent valve    |
| 7) Low pressure switch            | 20) Fuel level gages   |
| 8) Fuel jet                       | 21) Tank drain valve   |
| 9) Main mechanical boost pump     | 22) Check-valve        |
| 10) Electric boost pump           | 23) Low level detector |
| 11) Fuel filter                   | 24) Suction strainer   |
| 12) Filter clogging by-pass valve | 25) Fuel amplifier     |
| 13) Filter clogging indicator     | 26) Sequencer          |

Figure 7.8.1 (1/2) - Fuel system

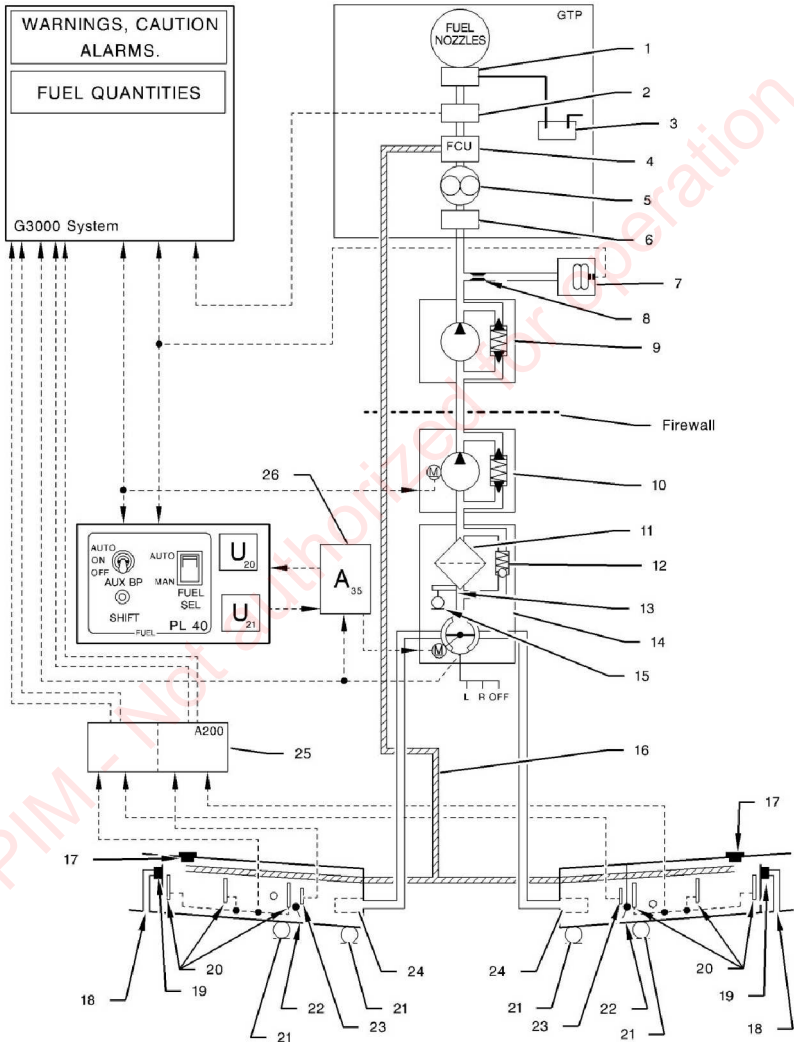
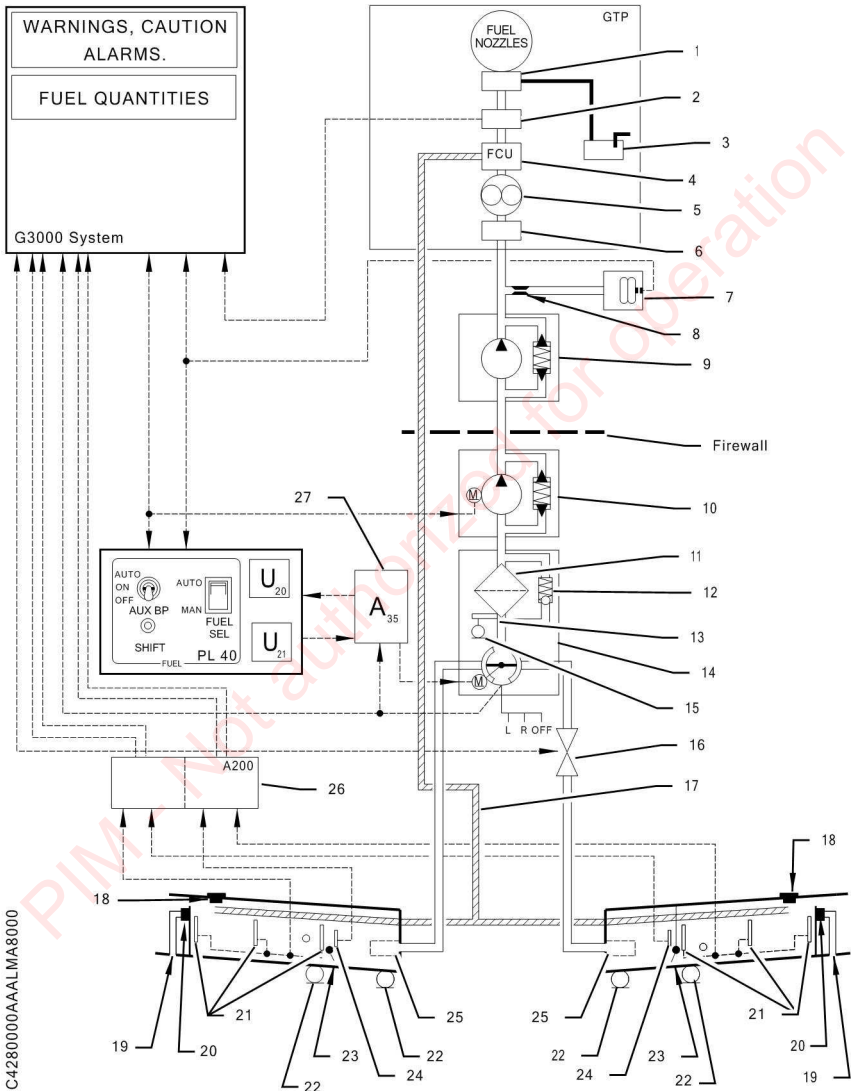


Figure 7.8.1 (2/2) - Fuel system

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 1) Flow divider                   | 15) Filter drain                 |
| 2) Flowmeter                      | 16) HomeSafe fuel shut-off valve |
| 3) Collector tank                 | 17) Fuel return pipe             |
| 4) Fuel regulator                 | 18) Filling port                 |
| 5) High pressure pump (HP)        | 19) NACA scoop                   |
| 6) Oil to fuel heater             | 20) Tank vent valve              |
| 7) Low pressure switch            | 21) Fuel level gages             |
| 8) Fuel jet                       | 22) Tank drain valve             |
| 9) Main mechanical boost pump     | 23) Check-valve                  |
| 10) Electric boost pump           | 24) Low level detector           |
| 11) Fuel filter                   | 25) Suction strainer             |
| 12) Filter clogging by-pass valve | 26) Fuel amplifier               |
| 13) Filter clogging indicator     | 27) Sequencer                    |
| 14) Fuel unit                     |                                  |

Figure 7.8.1A (1/2) - Fuel system



C428000AAALLMA8000

Figure 7.8.1A (2/2) - Fuel system

>> All

### **Automatic tank selector** - see figures 7.8.2 and 7.8.3

Automatic tank selection allows, without pilot's intervention, feeding the engine from one tank or the other in predetermined sequences. These sequences depend on airplane configuration (ground, in-flight, fuel low level CAS messages appearance).

Automatic tank selection system comprises an electronic sequencer, an actuator attached on the fuel unit, FUEL SEL two-position selector (AUTO, MAN) and SHIFT push-knob located on FUEL panel.

To operate the automatic selector, set FUEL SEL switch to AUTO position and manual selector to R or L.

#### **Selector operation**

When the system is operated, **AUTO SEL** disappears ; the sequencer chooses a tank (R or L) and through the actuator, positions the fuel unit selector on the selected tank. The sequencer controls the time during which the selected tank will operate. This time varies, depending on airplane conditions.

Airplane on ground : tank is changed every minute and 15 seconds.

Airplane in flight : tank is changed every five minutes, as long as **FUEL LOW L** or **FUEL LOW R** does not appear. When the first low level lights on, the sequencer immediately selects the other tank. The selected tank will operate until the second low level lights on. When **FUEL LOW L-R** is visible, the sequencer changes tanks every minute and 15 seconds.

#### • NOTE •

The manual selector is driven by the fuel unit and is positioned on R or L mark corresponding to the tank selected by the sequencer. Therefore, the pilot continuously knows the tank which is operating.

#### **Test for system proper operation**

SHIFT push-button allows the pilot to test system proper operation anytime.

When the system operates, the fuel tank is changed when SHIFT push-button is pressed once.



If airplane is on ground or in flight, low level CAS messages not visible, the new selected tank remains operating and a new sequence is initiated.

• NOTE •

This procedure allows the pilot to preferably choose the tank from which he/she wants to take fuel.

In all cases, proper system operation is indicated by rotation of the manual selector. Setting FUEL SEL switch to MAN position or setting FUEL TANK SELECTOR to OFF position leads to system de-activating and appearance of **AUTO SEL**.

**AUTO SEL** also lights on when order given by the sequencer has not been executed after 12 seconds.

### Electric boost pump (AUX BP)

Electric boost pump is an auxiliary pump located between fuel unit and main mechanical boost pump. It is controlled through AUX BP switch located on FUEL panel. This switch allows stopping or selecting the two pump operating modes :

- when set to ON, electric boost pump operates permanently
- when set to AUTO, electric boost pump is automatically operated in case of fuel pressure drop at the mechanical boost pump outlet.

>> *With HomeSafe emergency function (Post-MOD70-0650-34A)*

• NOTE •

When AUX BP switch is set to ON, the HomeSafe fuel shut-off valve is forced in open position.

>> *All*

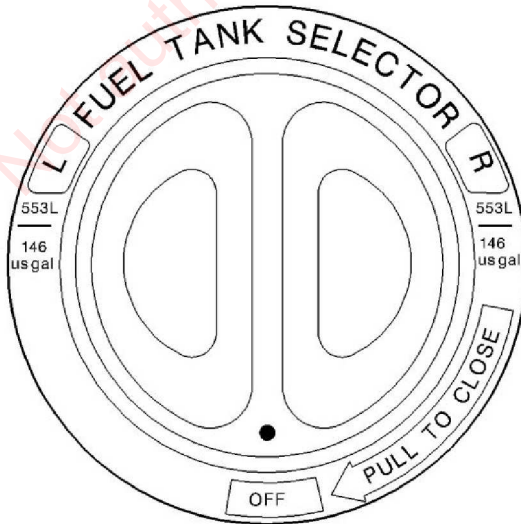
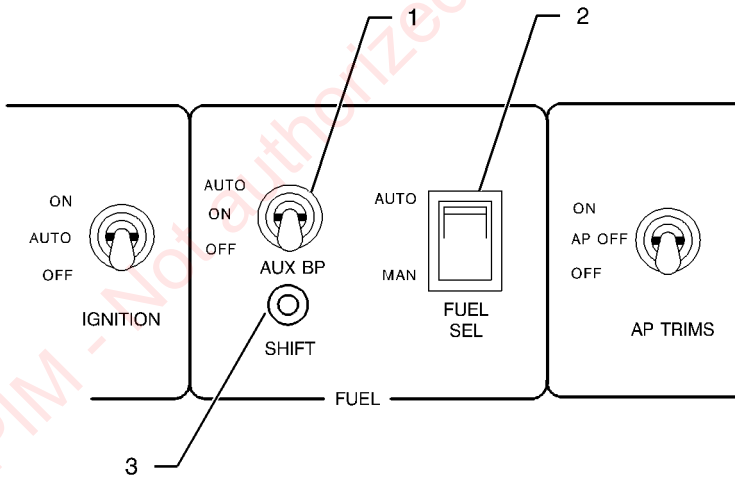
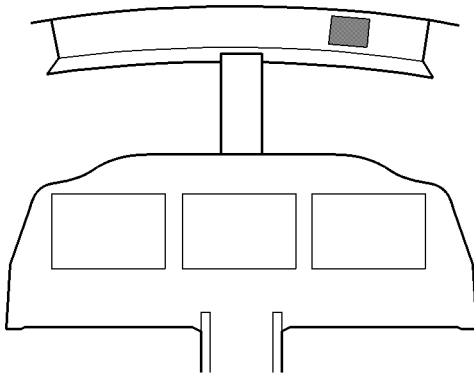


Figure 7.8.2 - Manual selector of fuel tanks

- 1) AUX BP switch
- 2) FUEL SEL switch
- 3) SHIFT push-button



14240000AAAAMA8001

Figure 7.8.3 - Fuel control panel

## Main mechanical boost pump

The mechanical boost pump is attached to accessory gearbox and supplies fuel necessary for engine operation.

## Engine fuel system

The engine fuel system consists of a fuel regulator, pumps, filters, a fuel divider and fuel nozzles. The system provides the fuel flow necessary to satisfy the engine power and rating needs.

The fuel coming from airplane system goes through a heater which is automatically controlled by a thermostatic valve.

## Fuel gaging installation

Fuel gaging installation is a capacitive type. Fuel data are displayed in us gallons. Three fuel level gages are installed in each tank. The wing root side fuel level gage is equipped with a low level detector which leads to fuel low level CAS messages appearance, when usable fuel quantity remaining in the concerned fuel tank is under about 9 USG (34 Litres).

## Fuel system monitoring

Fuel system monitoring is ensured by CAS messages :

- **FUEL OFF** : Fuel tank selector set to OFF
- **FUEL PRESS** : Fuel pressure at mechanic pump outlet under 10 psi ( $\pm$  2 psi)
- >> *With HomeSafe emergency function (Post-MOD70-0650-34A)*
- **HS FUEL SHUTOFF** : HomeSafe fuel shut-off valve of the right fuel tank is closed
- >> *All*
- **AUX BOOST PMP ON** : Electric fuel pump running (manual or automatic mode)
- **FUEL LOW L-R** \* : Fuel quantity less than or equal to 9 USG (34 Litres) of usable fuel in specified tank
- **AUTO SEL** : Sequencer inactive or operating defect
- **FUEL IMBALANCE** : Fuel tanks imbalanced by more than 15 USG (57 Litres) for more than 30 seconds

\* Only affected side (L, R or L-R) displayed in CAS message

**Fuel system draining and clogging indicator** - 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 wing root and the other past main landing gear well.

These drains allow draining water or sediments contained in fuel.

Fuel tank drain valves are provided with a slot which allows opening them with a screwdriver.

**▲ CAUTION ▲**

Fuel system draining shall be performed prior to the first flight of the day and after each tank refueling, using a sampler to pick off fuel at the two drain valves of each tank and at the filter vent valve.

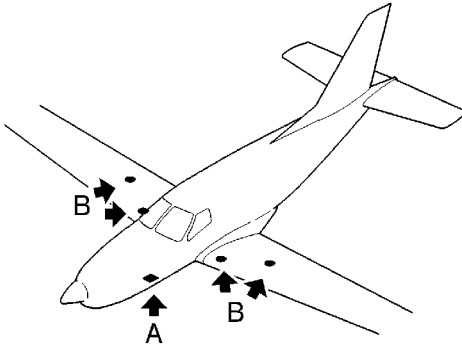


A red filter bypass flag on the fuel unit and visible from outside, when an inspection door located on L.H. side under front baggage compartment is open, indicates filter clogging. A push-button, adjacent to the inspection door, controls the illumination of a light provided to improve visibility of the clogging indicator. This indicator shall be observed during preflight inspection.

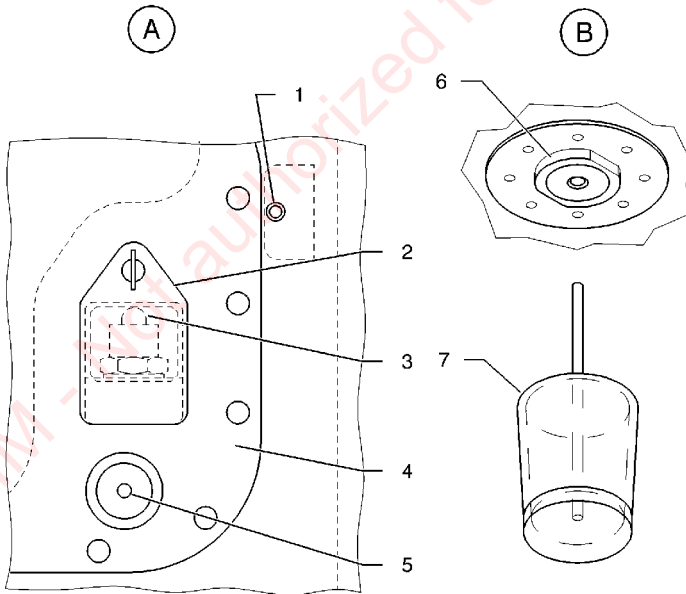
**● NOTE ●**

When filter gets clogged in flight, the filter is by-passed in order not to deprive powerplant from fuel. The powerplant is then supplied with non-filtered fuel.





- 1) Lighting switch
- 2) Mirror door
- 3) Clogging indicator
- 4) Central access door
- 5) Filter drain
- 6) Tank drain
- 7) Drain bowl



I4281001A4BMA8104

Figure 7.8.4 - Fuel system draining points and clogging indicator

**7.9 - Electrical system** - see figures 7.9.1, 7.9.2 and 7.9.5

The airplane is fitted with a 28-volt direct-current electrical system.

Electrical supply is obtained from various power supplies :

- a starter generator
- a stand-by generator
- a battery
- a ground power unit, via a plug, located on L.H. side.

Connection relays, main bus bar, generator regulation and protection systems and control logic systems are grouped in electrical power system box located in 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, a white message EPS SERVICE REQUIRED appears in the message window on the PFD.

**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 GENERATOR selector set to MAIN position. It will be effective when connection conditions are met.

Generator connection is indicated by **MAIN GEN** disappearance.

**• NOTE •**

Starter generator will not supply airplane if source switch is on GPU.

On ground, generator load should be maintained below 200 AMP.

•

## Stand-by generator

Stand-by generator supplies a 28-volt stand-by direct current which may be used in case of main generator failure.

Generator connection with main bus bar is controlled through GENERATOR selector set to ST-BY, it will be effective when connection conditions are met.

• NOTE •

Stand-by generator will not supply airplane if source switch 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 stand-by 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 BATT BUS bus bar except when crash lever is pulled down.

Battery connection to main bus bar is controlled through SOURCE selector set to BATT position.

**BAT OFF** lights on when 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 SOURCE selector when set to GPU position, it will be effective when connection conditions are met.

When SOURCE selector is set to GPU position, the battery and ground power unit are connected simultaneously on main bus bar.



Ground power receptacle door opening is indicated by **GPU DOOR** appearance.

● 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 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 R.H. side panel - see figure 7.9.4. 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 electrical power system.

The ESS BUS 1 and ESS BUS 2 essential bus bars are connected to main bus bar through ESS BUS TIE switch set to NORM position. ESS BUS TIE switch is attached to 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 EPS box, and a breaker, located in the front cargo compartment on C2 frame right side, each bar being individually protected by a breaker.

BATT BUS bar is directly connected to the battery ; it is protected by a fuse, located in EPS box, and a breaker, located in the front cargo compartment on C2 frame left side.

● NOTE ●

The electrical distribution of bus bars is described in figure 7.9.3.



## Emergency use

With both generators de-activated in flight, it is still possible to use battery power to supply all airplane systems maintaining SOURCE selector on BATT position.

In order to save battery power, it is possible to shed the charges which are not essential for flight safety, for that set :

- ESS BUS TIE switch to EMER position

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 ESS BUS TIE switch to NORM position.



## 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.

Refer to section 8, paragraph 8.7 for servicing.

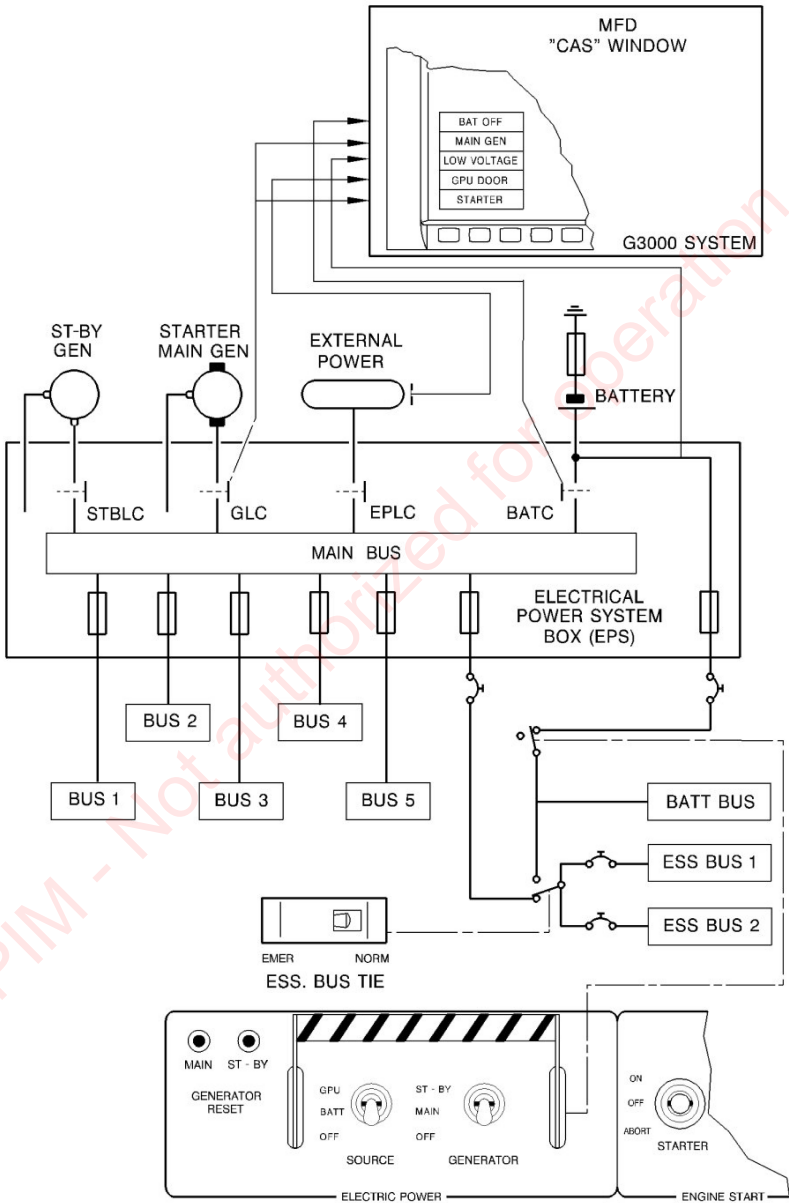


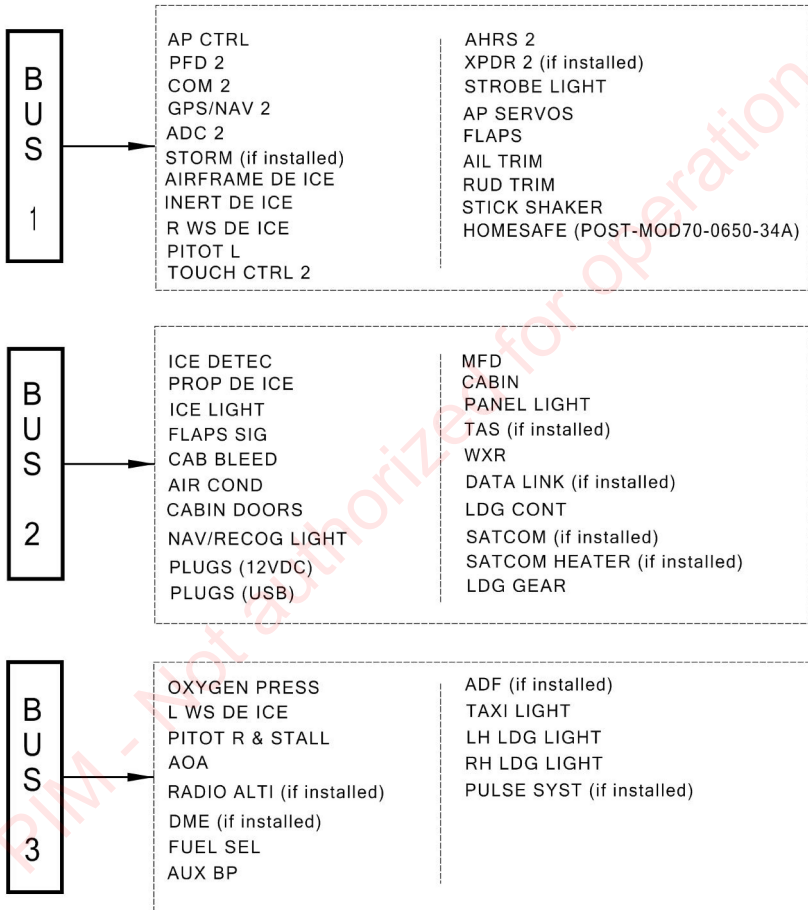
Figure 7.9.1 - Electrical diagram

14240000AAAHHMA8300

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.

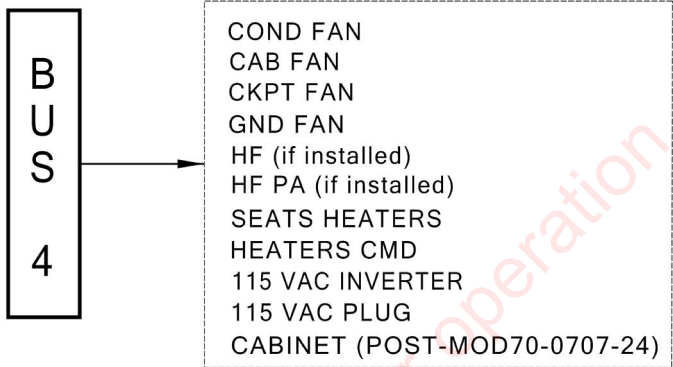
Figure 7.9.2 - Bus bars supply configurations



14246000AAASMA8001

Figure 7.9.3 - (1/3) - Electrical distribution of bus bars

C4246000AAAAA8000



NOTE: CIRCUIT BREAKERS ON C13 BIS FRAME

I4246000AAAGMA8300

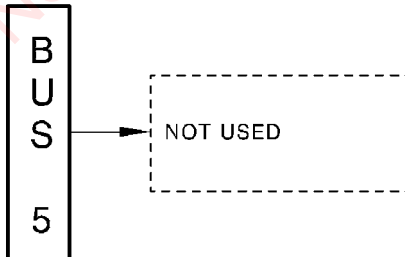


Figure 7.9.3 (2/3) - Electrical distribution of bus bars

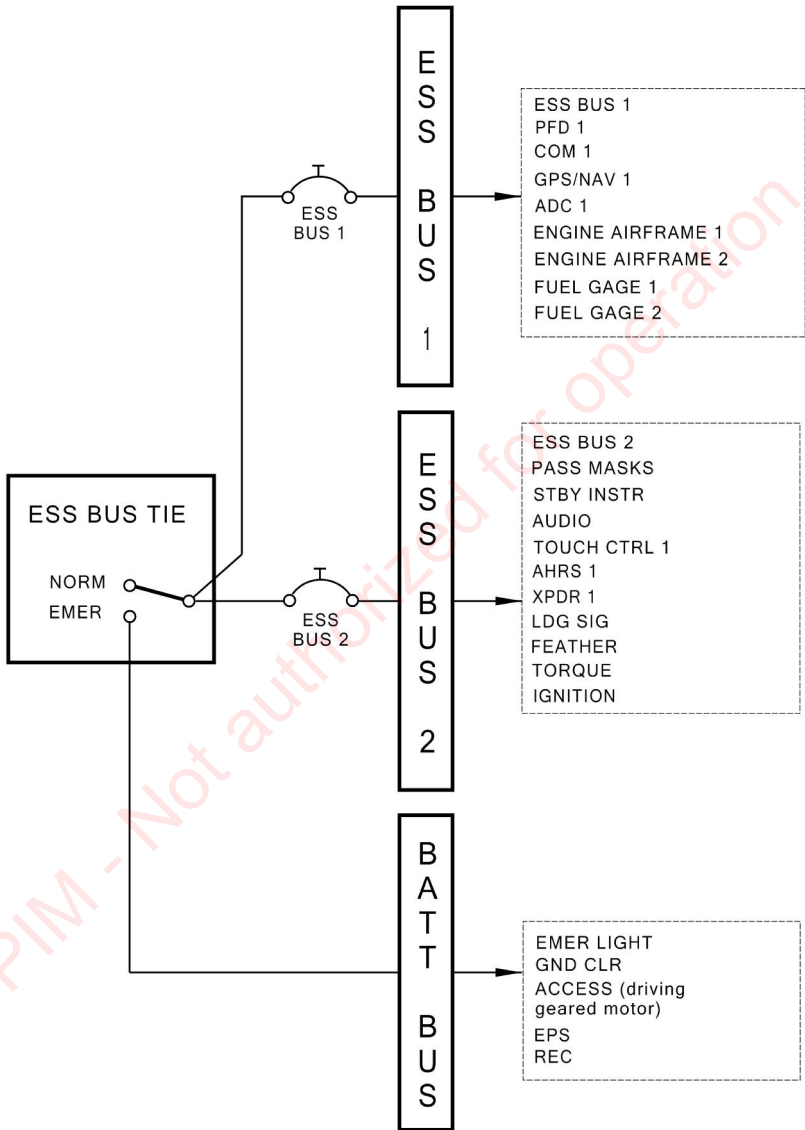


Figure 7.9.3 (3/3) - Electrical distribution of bus bars

C4246000AAAAA8100

<b>ESS BUS TIE</b>	Essential bus NORM & EMER switch
<b>BUS 1</b>	
AP SERVOS	Autopilot servo protection
FLAPS	Flaps protection
AIL TRIM	Aileron trim protection
RUD TRIM	Pitch trim protection
<b>BUS 2</b>	
LDG GEAR	Landing gear general supply protection
<b>ESS BUS 1</b>	
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	Powerplant cont. protec. : Oil temp. & pres., torque, propeller
AIRFRAME 1	
ENGINE	Powerplant cont. protection : Ng, flowmeter & ITT
AIRFRAME 2	
FUEL GAGE 1	L.H. fuel gage protection
FUEL GAGE 2	R.H fuel gage protection
<b>ESS BUS 2</b>	
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
AHRS 1	Attitude and Heading Reference System 1 protection
XPDR 1	Transponder 1 protection
LDG SIG	Landing gear indicating system protection
FEATHER	Propeller feather protection
TORQUE	Torque control protection
IGNITION	Powerplant ignition protection

Figure 7.9.4 (1/4) - Breaker panel (Typical arrangement)

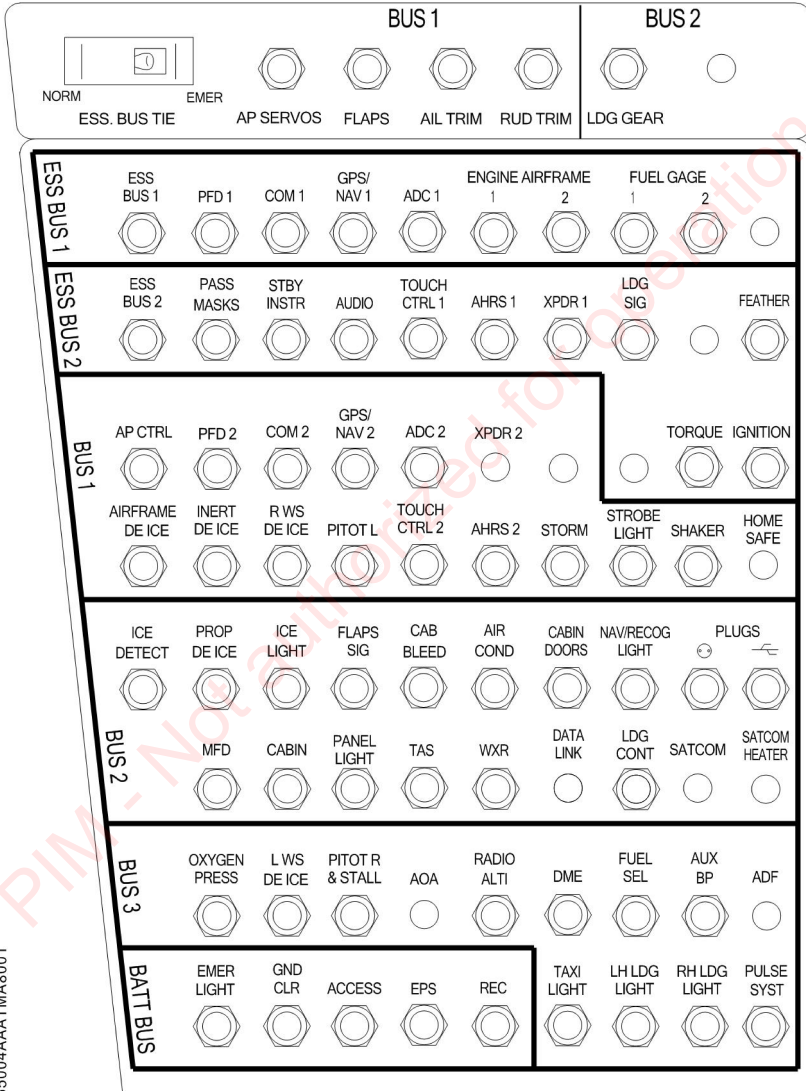


<b>BUS 1</b>	
AP CTRL	Flight controller protection
PFD 2	Primary Flight Display 2 protection
COM 2	VHF 2 & radio protection
GPS/NAV 2	GPS NAV 2 protection
ADC 2	Air Data Computer 2 protection
XPDR 2	Transponder 2, if installed, protection
AIRFRAME DE ICE	Empennage and wing leading edges deicing
INERT DE ICE	Inertial separator protection
R WS DE ICE	R.H. windshield deicing protection
PITOT L	Pitot L heating protection
TOUCH CTRL 2	Touchscreen controller 2 protection
AHRS 2	Attitude and Heading Reference System 2 protection
STORM	Stormscope protection, if installed
STROBE LIGHT	Strobe lights protection
SHAKER	Stick shaker protection, if installed
HOMESAFE	HomeSafe emergency function protection (Post-MOD70-0650-34A)
<b>BUS 2</b>	
ICE DETEC	Ice detector protection
PROP DE ICE	Propeller deicing protection
ICE LIGHT	L.H. wing leading edge lighting and lighting test protection
FLAPS SIG	Trim and flaps regulator protection
CAB BLEED	Cabin pressurization protection
AIR COND	Cabin ventilation and vapor cycle system protection
CABIN DOORS	Cabin doors opening protection
NAV/RECOG LIGHT	Navigation and recognition lights protection
PLUGS	12 VDC plugs protection
PLUGS	USB plugs protection
MFD	Multifunction display protection
CABIN	Passenger 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
SATCOM	SATCOM protection, if installed
SATCOM HEATER	SATCOM heater protection,if installed

Figure 7.9.4 (2/4) - Breaker panel (Typical arrangement)

<b>BUS 3</b>	
OXYGEN PRESS	Oxygen/Pressure indication protection
L WS DE ICE	L.H. 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	L.H. landing light protection
RH LDG LIGHT	R.H. landing light protection
PULSE SYST	Pulse lite system protection, if installed
<b>BATT BUS</b>	
EMER LIGHT	Instrument panel emergency lighting protection
GND CLR	Ground clearance protection
ACCESS	Cabin access lighting protection
EPS	Electrical power system protection
REC	Lightweight Data Recorder protection

Figure 7.9.4 (3/4) - Breaker panel (Typical arrangement)



14255004AAATMA8001

Figure 7.9.4 (4/4) - Breaker panel (Typical arrangement)

## Indicating

Electrical system indicating consists of voltage and ampere indicating - refer to GARMIN Pilot's Guide for further details.

Following CAS messages may appear on the MFD CAS window :

**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 figures 7.9.2 and 7.9.5

The electrical power system provides systems protection in case of :

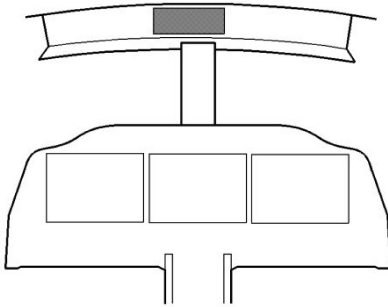
- overvoltage
- short-circuits

In case of disconnection of starter generator or stand-by generator following a failure, MAIN or ST-BY reset can be done by pressing corresponding GENERATOR RESET MAIN or ST-BY push-button.

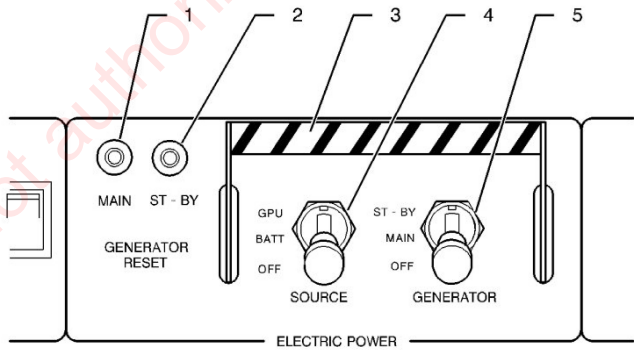
A battery reset is done by setting the SOURCE selector to OFF and back to BATT.

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 upper panel center part allows isolating simultaneously BATT BUS bar and setting to OFF the SOURCE and GENERATOR selectors when lowered. In this case all bus bars are isolated from generators.



- 1) MAIN reset knob
- 2) ST-BY reset knob
- 3) Crash lever
- 4) SOURCE selector
- 5) GENERATOR selector



14240000AAU/MAB900

Figure 7.9.5 - Electrical control

**Exterior lighting** - see figure 7.9.6

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**

Landing lights are embedded in the winglets and located in leading edges. Lights illumination is controlled by setting to LDG, a switch located on upper panel.

The Pulse lite system, if installed, enables the pilot to control landing light flashing to be seen by the control tower or in heavy traffic areas.

**Taxi lights**

The taxi lights are embedded in the winglets and located in leading edges. They are controlled by setting to TAXI, a switch located on upper panel.

**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 NAV and STROBE switches located on upper panel.

● NOTE ●

By night, do not use anticollision lights in fog, clouds or mist as light beam reflexion may lead to dizziness and loss of sense of orientation.

●

**Recognition lights**

■ Recognition 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 fuselage L.H. side, its beam illuminates the wing leading edge. It is controlled by the ICE LIGHT switch installed on DE ICE SYSTEM panel - see figure 7.13.1.

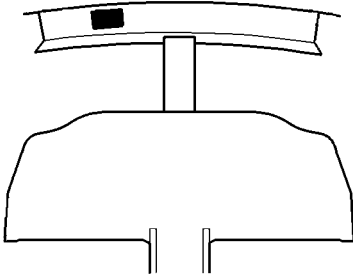
**FWD compartment light**

The dome light illumination of the FWD compartment is controlled by the switch located in the upper section of the door frame.

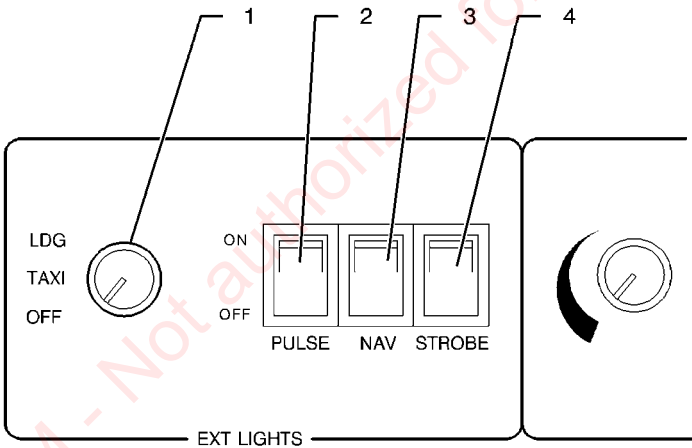
**Fuel unit compartment light**

The lighting of the fuel unit compartment allows improving the visibility of the clogging indicator by pressing the push-button located besides the inspection door.

PIM - Not authorized for operation



- 1) Taxi and landing light switch
- 2) Pulselite system switch
- 3) Navigation lights switch
- 4) Strobe lights switch



1424000AAA.VNA.18000

Figure 7.9.6 - External lighting controls



**Interior lighting** - see Figure 7.9.7

Interior lighting consists of access, cabin, instrument panel, instruments, baggage compartment and emergency lighting.

**Access lighting**

Access lighting consists of floodlights:

- two individual for front seats,
- four individual for rear passenger seats,
- one on the access door,
- one in the dome light of the baggage compartment, on the left side.

For the front seats, the light is switched on at a minimum intensity.

The lights of four individual floodlights for rear passenger seats and in baggage compartment are switched on at maximum intensity.

ACCESS push-button on INT LIGHTS panel and the push-button located on access door rear frame control all these lights via a delayed breaker.

If the crash lever is down, access lighting is automatically cut out after 3 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, six individual floodlights for rear passenger seats and the baggage compartment R.H. dome light. Each floodlight is controlled by a push-button located near. The pilot can switch off the cabin floodlights and the baggage compartment dome light with the CABIN switch.

All floodlights are dimmable by a long press in the front seats area and for the four individual floodlights in the passenger area.

**Instrument panel lighting**

Instrument panel lighting is controlled by the PANEL rheostat located on 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.

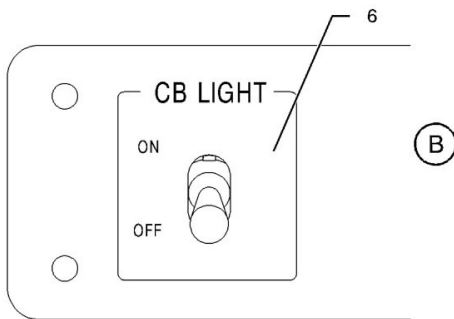
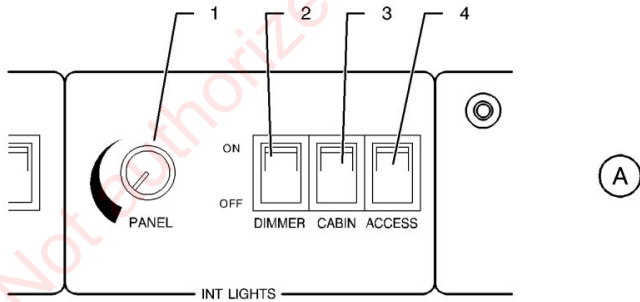
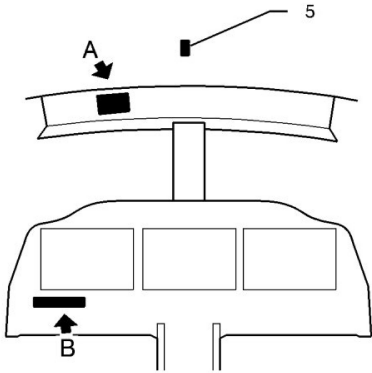
### **Emergency lighting**

Emergency lighting consists of two swiveling floodlights located on both sides of the cockpit overhead panel above front seats. It illuminates 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.

- 1) Instrument panel lighting switch (rheostat)
- 2) DIMMER switch
- 3) Cabin lighting switch (rear seats reading light)
- 4) Access door, baggage compartment and FWD dome light (delayed breaker) push-button
- 5) Emergency lighting switch
- 6) Breaker panel lighting switch

Figure 7.9.7 (1/2) - Internal lighting controls



14240000-AAA-VIA3200

Figure 7.9.7 (2/2) - Internal lighting controls

## **115V Plug**

The 115V plug permits to connect external equipments (max power : 250 W).

The plug is located on the right aft side of the cabin compartment, in the storage pocket.

PIM - Not authorized for operation

## 7.10 - Air conditioning and pressurization

### • NOTE •

A list of abbreviations used in this chapter is given in figure 7.10.2.

The airplane is equipped with a Global Air System (GAS), which ensures air conditioning and pressurization control - see figure 7.10.2.

- Air conditioning corresponds to the cockpit / cabin air temperature management.
- Pressurization corresponds to the cabin altitude / rate of change management.

The GAS is composed of 3 sub-systems :

- Engine bleed air system,
- Cabin pressurization control system,
- Dual zones Environmental Control System, which includes heating and cooling functions.

These sub-systems are managed by a single digital controller, the GASC, which receives information from :

- the sensors within the sub-systems,
- the human interfaces set in the airplane.

The GASC elaborates the proper commands to the sub-systems actuators and indication or warning elements.

GAS controls are located on :

- the A/C panel on the left side of the left control wheel,
- the PRESSURIZATION panel on the right side of the left control wheel,
- a control panel above the arm rest of the L.H. side passenger's seat.

The pilot monitors the system through gauges and CAS messages appearing on the MFD. These indications are independent of the GASC controls and internal sensors.

## 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 either P2.5 or P3 engine bleed ports.

The system normally operates on the P2.5 port as long as the pressure or temperature demands are met by this port.

If one of these conditions is not met, the system automatically switches to the P3 port.

When the pressure or temperature demand can be met by the P2.5 port, the system automatically returns to using the P2.5 port.

The Inlet Pressure Port Sensor (IPPS) measures the pressure at the P2.5 port and sends the value to the GASC which manages the ports switching on condition with the Shut Off Valve (SOV).

A Non Return Valve (NRV) prevents P3 air from entering the P2.5 port when the P3 port is opened.

### To ensure a controlled airflow in the cabin

The bleed air flow is controlled by the Flow Control and Shut Off Valve (FCSOV) driven by the GASC.

### To adjust the temperature of the bleed air

The bleed air outlet temperature control is ensured by the By-Pass Valve (BPV) in association with the Main Heat Exchanger (MHX).

Based on pilot's or passengers' TEMP selector position, the GASC computes the appropriate cabin air inlet temperature target and compares it to the actual measured inlet temperature in order to set the BPV position. The BPV derives a part of the bleed air through the MHX to cool it and mixes it to the remaining cabin air.

**System operation**

See figure 7.10.3.

The BLEED switch allows selection of the engine bleed air system provided that the engine is running.

The Ground Fan (GF) operates until takeoff, when BLEED switch is set to AUTO, and **MAIN GEN** is OFF.

The BLEED switch is fitted with a blocking device between AUTO and OFF positions. This prevents the operator from inadvertently setting the BLEED switch to OFF position.

To reset the system, set BLEED switch to OFF, then back to AUTO.

**System protection**

Power for the engine bleed air system is supplied by the BUS 2 bar and is protected by the CAB BLEED breaker.

**Cabin pressurization control system**

In flight, the GASC controls the modulation of the Outflow Valve (OFV) in order to reach the computed cabin altitude.

**System operation**

See figure 7.10.3.

The BLEED switch allows to activate the pressurization system.

Either one of two pressurization modes can be selected : AUTO or MAX DIFF

- When BLEED switch is set to AUTO, the GASC controls the cabin altitude rate of change in order to :
  - . optimize comfort,
  - . avoid reaching maximum or negative cabin differential pressure.
- MAX DIFF mode controls the cabin pressure to assist passengers that might require the lowest cabin altitude possible. When selecting this mode :
  - . flights below 13500 ft will result in cabin altitudes as low as 0 ft,
  - . for flights above 13500 ft, the cabin altitude is minimized throughout the flight while maintaining cabin differential pressure below 6.0 PSI.

MAX DIFF mode is selected through the GTC by pressing : "MFD Home", "Aircraft Systems", "Landing Field Elev".

The GASC controls the OFV through a torque motor on the valve.

### Cabin altitude management

In order to maximize comfort during all phases of flight, the cabin altitude is automatically computed by the GASC using flight parameters (such as aircraft altitude, altitude rate of change) sent by the avionics.

During descent, the GASC uses the Landing Field Elevation (LFE) to manage the optimal cabin altitude rate of change in order to land with a cabin altitude equal to LFE minus 200 ft.

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", "Landing Field Elev" and then "Manual".

### System monitoring

The pilot monitors information related to the pressurization system through gauges and information displayed on the MFD :

- landing field altitude,
- cabin altitude in ft,
- cabin climb speed in ft/min,
- cabin differential pressure ( $\Delta P$ ) in PSI.

These gauges are independent of the GASC controls and internal sensors.

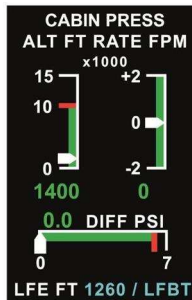


Figure 7.10.1 - Cabin altitude monitoring



**CAS messages** are displayed in the MFD CAS window :

- **PRESSU OFF** indicates that the BLEED switch is in OFF position or that the Flow Control and Shut Off Valve (FCSOV) is closed due to a system malfunction (cabin inlet overtemperature, BDPS or FCSOV failure).
- **CABIN ALTITUDE** indicates that the cabin altitude is over 10000 ft.
- **CABIN DIFF PRESS** indicates that 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** indicates that the GASC cannot compute optimal cabin altitude due to a system malfunction. Under this condition, the GASC will control the cabin altitude to 9800 ft default value.
- **GAS DEGRADED** indicates that the pressurization system is degraded without total loss of pressurization or that the heating system is degraded.
- **GAS EVENT** is displayed 45 seconds after landing if a fault on the Overheat Thermal Switch was detected by the GASC during flight.
- **MAX DIFF MODE** indicates that the MAX DIFF mode is selected.

### Protection - Safety

Cabin is automatically depressurized as soon as the airplane is on ground through landing gear switches (airplane on ground) or, if necessary, by actuating DUMP switch located on PRESSURIZATION panel (in normal operation, this switch is protected and locked by a cover).

Overpressure and negative relief safety are managed by both OFV and SFV. The safety functions are ensured by independent pneumatic modules fitted on both valves, which override the GASC control when necessary.

The DUMP switch allows the pilot to open the OFV in order to depressurize the cabin.

The 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 14500 ft.

## **Dual zones Environmental Control System (ECS)**

The ECS ensures both Cockpit and Cabin heating and cooling functions.

The ECS consists of two independent air circuits :

- Heating circuit, controlled by Temperature Conditioning System (TCS)
- Cooling circuit, controlled by Vapor Cycle Cooling System (VCCS)

### **Heating circuit**

The TCS regulates hot air coming from the bleed air system (also used for pressurization) and mixes it with the recirculating cabin air at the Mixing Ejector (MIXEJ) in order to lower the delivered air temperature.

The resultant air flow enters the Hot Air Distributor (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 on the lower section of the L.H. side and R.H. side cabin upholstery.

### **Cooling circuit**

The VCCS is selected on only when the GASC receives a cooling request. It is composed of two independent circuits :

- one for the cockpit zone
- one for the cabin zone

For each circuit, air is sucked by means of a variable speed electrical fan and then blown through an evaporator and ducted to the different zones :

- cockpit circuit, by passing through :
  - . the upper panel equipped with swivelling and adjustable air outlets,
  - . air outlets located on arm rests of pilot and R.H. side front passenger stations and
  - . ports located under instrument panel.

- cabin circuit, by passing through :
  - . the overhead duct equipped with swivelling and adjustable air outlets,
  - . ports located on the floor between the cabinets and the intermediate passenger's seats.

### System operation

See figure 7.10.3 and paragraph Air temperature management.

#### A/C control panel selection :

If the A/C switch is set to OFF :

>> *Before GASC software evolution (Pre-MOD70-0689-21)*

- Temperature is set by default by the GASC to 23°C,

>> *After GASC software evolution (Post-MOD70-0689-21)*

- The system maintains the cabin air inlet temperature previously selected. The pilot can modulate this temperature by using the TEMP selector on A/C panel,

>> *All*

- Cockpit / Cabin evaporator fans are OFF,
- VCCS is inhibited.

If the A/C switch is set to PILOT :

- Controls located in the cabin zone are inhibited.

If the A/C switch is set to PLT+PAX :

- Each zone is controlled by its own settings.

FAN speed selectors positions :

- OFF : prevents recirculation of cold air through the cold air circuit (VCCS).
- 1 - 4 : Cockpit / Cabin fan speeds are selectable.

TEMP selectors :

- Allow adjustment of the temperature for the cockpit and cabin zones.

>> *After GASC software evolution (Post-MOD70-0689-21)*

- If the pilot or passengers set the TEMP selector to the maximum heat position, the bleed air system automatically switches from the P2.5 to the P3 bleed port to increase the temperature and flow rate of the incoming bleed air. Except in the case of very cold environmental conditions, this switching is inhibited below 25000 ft.

>> *All*

HOT AIR FLOW distributor :

The HOT AIR FLOW distributor selects between windshield defog or cabin heating.

● NOTE ●

For maximum efficiency, the HOT AIR FLOW distributor should be set either in defog position (fully turned to the left) or in cabin position (fully turned to the right).

●

>> *After GASC software evolution (Post-MOD70-0689-21)*

When the HOT AIR FLOW distributor is set in defog position (fully turned to the left), the bleed air system automatically switches from the P2.5 to the P3 bleed port to increase the temperature and flow rate of the incoming bleed air. Except in the case of very cold environmental conditions, this switching is inhibited below 25000 ft.

>> *All*

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 instrument panel near the right control wheel.

- In 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, if necessary by depressurizing the cabin, to be able to operate the EMERGENCY RAM AIR control knob.

●

**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 BUS 4 bar and protected respectively by 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 compressor clutch.
- during engine start :
  - . turns off all the Vapor Cycle Cooling System (VCCS)

**Air temperature management**

Cockpit and cabin heating / cooling

Cockpit and cabin air temperature management is operated by selecting :



For optimal air temperature management, select :



Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Warm				
Cabin area	Hot				

Results









Mixed Bleed Air Circuit :





Warm air is distributed to both cockpit and cabin. More warm air is directed to cabin due to the greater temperature demand.

Cold Air Circuit :

Not active, as no TEMP selector is set in the blue arc.

FANS select 0. Selecting a FAN speed will reduce cabin air temperature.

Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Warm				
Cabin area	Warm				
<p><u>Results</u></p> <p><u>Mixed Bleed Air Circuit</u> :</p> <p>Warm air is distributed to both cockpit and cabin equally due to equal temperature demand.</p> <p><u>Cold Air Circuit</u> :</p> <p>Not active, as no TEMP selector is set in the blue arc.</p> <p><u>FANS</u> select 0. Selecting a FAN speed will reduce cabin air temperature.</p>					
Cockpit area	Warm				
Cabin area	Cool				
<p><u>Results</u></p> <p><u>Mixed Bleed Air Circuit</u> :</p> <p>Warm air is distributed to both cockpit and cabin. More warm air is directed to cockpit due to the greater temperature demand.</p> <p><u>Cold Air Circuit</u> :</p> <p>Cabin TEMP selector is set in the blue arc resulting in cabin air conditioning system supplying the cabin area.</p> <p><u>Cockpit FAN</u> : select 0.</p> <p><u>Cabin FAN</u> : select 1 or more to circulate the cooled air.</p>					

Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Cool				
Cabin area	Cool				

Results

Mixed Bleed Air Circuit :

With the cockpit and cabin TEMP selectors set in the blue arc, the Hot Air Distributor discharges the mixed bleed air below the floor towards the cold air circuit fans and evaporators to reduce the air to the desired temperature.

Cold Air Circuit :

Both cockpit and cabin TEMP selectors are set in the blue arc resulting in both cockpit and cabin air conditioning systems supplying their respective area.

Cockpit and cabin FANS :

Select 1 or more to circulate the cooled air.

Cockpit area	Cool				
Cabin area	Warm				

Results

Mixed Bleed Air Circuit :

Warm air is distributed to both cockpit and cabin. More warm air is directed to cabin due to the greater temperature demand.

Cold Air Circuit :

Cockpit TEMP selector is set in the blue arc resulting in cockpit air conditioning system supplying the cockpit area.

Cockpit FAN : select 1 or more to circulate the cooled air.

Cabin FAN : select 0.

● NOTE ●

FANS selected to zero ensures that no cool air is recirculated when trying to maximize the heating of the cockpit and / or cabin zones.



### Cabin override

Selecting the switch to PILOT position disables TEMP and FAN speed selectors in the cabin area.

The PILOT position also distributes warm air equally to the cockpit and cabin.

Only the cockpit TEMP and FAN selectors inputs are used by the GASC for air temperature management.



Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Warm				
Cabin area	/				

### Results

#### Mixed Bleed Air Circuit :

Warm air is distributed equally to both cockpit and cabin. The temperature is selected by the cockpit TEMP selector.

#### Cold Air Circuit :

Not active, as the cockpit TEMP selector is set in the red zone and cabin TEMP selector is inhibited.

Cockpit FAN : select 0. Selecting a FAN speed will reduce cabin air temperature.

Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Cool				
Cabin area	/				
<p><u>Results</u></p> <p><u>Mixed Bleed Air Circuit :</u></p> <p>With the cockpit TEMP selector set in the blue arc, the Hot Air Distributor discharges the mixed bleed air below the floor towards the cold air circuit fans and evaporators to reduce the air to the desired temperature.</p> <p><u>Cold Air Circuit :</u></p> <p>Cockpit TEMP selector is set in the blue arc resulting in both cockpit and cabin air conditioning systems to supply their respective area.</p> <p><u>Cockpit FAN :</u> select 1 or more to circulate the cooled air.</p> <p>Cockpit FAN speed selector determines cabin FAN speed.</p>					

### Windshield DEFOG

Windshield defog is operated by selecting :



or



Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	/				
Cabin area	/				
<p><b>Results</b></p> <p><u>Mixed Bleed Air Circuit</u> :</p> <p>Air is distributed to the windshields and cockpit side windows at a fixed temperature regardless of TEMP selector settings.</p> <p><u>Cold Air Circuit</u> :</p> <p>Inhibited when DEFOG is selected.</p> <p>FANS will continue to operate if selected to 1 or more for air circulation.</p>					

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PIM - Not authorized for operation

- 1) Demisting outlets
- 2) Front vents
- 3) Cockpit ventilated temperature sensor (CKVTS)
- 4) Cabin ventilated temperature sensor (CBVTS)
- 5) Air ports
- 6) Cabin control panel
- 7) Global air system controller (GASC)
- 8) Out-flow valve (OFV)
- 9) Safety valve (SFV)
- 10) Condenser fan
- 11) Condenser
- 12) High pressure switch
- 13) Drier filter
- 14) Cabin fan
- 15) Cabin evaporator
- 16) Cabin blown temperature sensor (CBBTS)
- 17) Cabin thermostatic valve
- 18) Low pressure switch
- 19) A/C and PRESSURIZATION panel
- 20) Cockpit thermostatic valve
- 21) Cockpit fan
- 22) Cockpit evaporator
- 23) Cockpit blown temperature sensor (CKBTS)

Figure 7.10.2 (1/3) - GAS items list and abbreviations

- 24) Demisting microswitch
- 25) Hot air distributor (HAD)
- 26) Cabin inlet temperature sensor (ITS)
- 27) Cabin bleed temperature switch (BTSW)
- 28) Mixing ejector (MIXEJ)
- 29) Check valve
- 30) MFD unit
- 31) Ground safety microswitch
- 32) Differential pressure switch
- 33) By-pass valve (BPV)
- 34) Cabin altitude alarm switch
- 35) Emergency air supply system  
(EMERGENCY RAM AIR)
- 36) Main heat exchanger (MHX)
- 37) Ground fan (GF)
- 38) Flow control shut off valve (FCSOV)
- 39) Bleed differential pressure sensor (BDPS)
- 40) Compressor
- 41) Shut-off valve (SOV)
- 42) Overheat thermal switch (OTSW)
- 43) Non return valve (NRV)
- 44) Intermediate port pressure sensor (IPPS)
- 45) Cabin pressure sensor

Figure 7.10.2 (2/3) - GAS items list and abbreviations

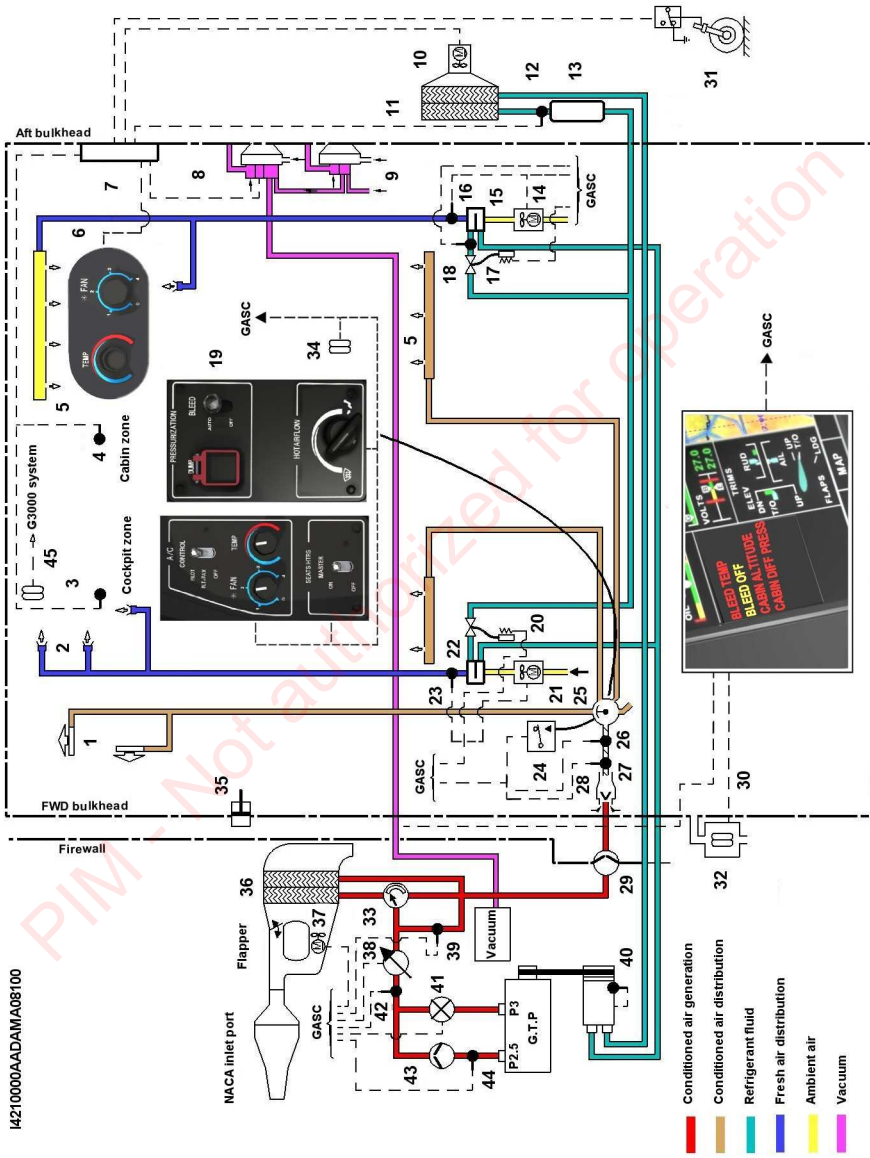


Figure 7.10.2 (3/3) - GAS

- 1) A/C switch
- 2) FAN speed selector (cockpit/cabin)
- 3) TEMP selector (cockpit/cabin)
- 4) DUMP switch
- 5) HOT AIR FLOW distributor
- 6) BLEED switch
- 7) FAN speed selector (cabin)
- 8) TEMP selector (cabin)

Figure 7.10.3 (1/2) - GAS controls



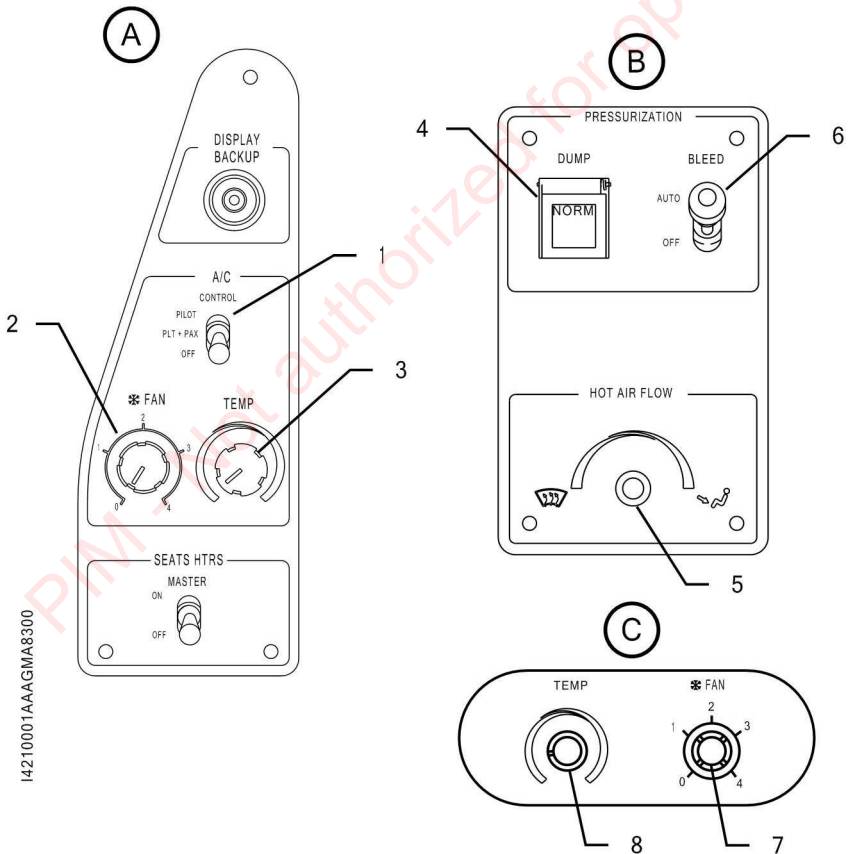
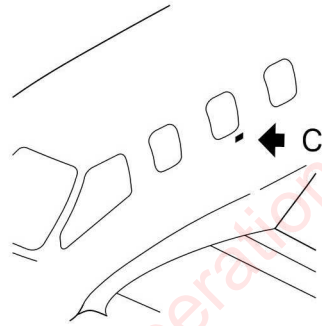
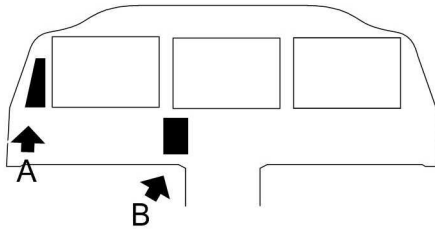


Figure 7.10.3 (2/2) - GAS controls

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PIM - Not authorized for operation

### 7.11 - Emergency oxygen system - see figure 7.11.1

The gaseous oxygen system will be used by the crew and the passengers, when the cabin altitude is greater than 10000 ft following a loss of pressurization or in case of cabin air contamination.

**USE OXYGEN MASK** appears in the MFD CAS window (in normal conditions) and the USE OXYGEN MASK/USE OXYGEN MASK aural warning alert sounds when the cabin altitude is greater than 10000 ft.

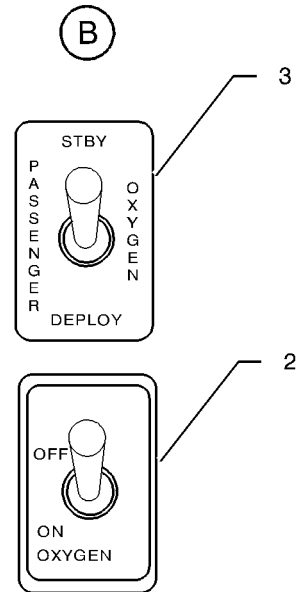
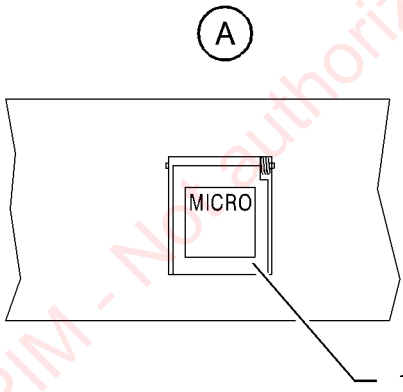
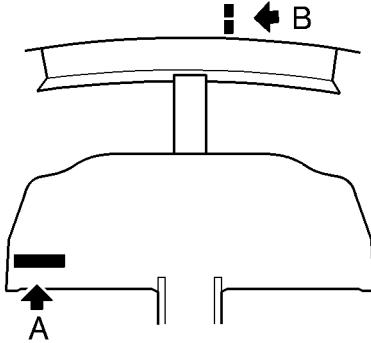
The oxygen reserve is contained in an oxygen cylinder made of composite material and located outside of the pressurized cabin into the R.H. karman. Its capacity is 50.3 cu.ft (1425 litres) STPD (Standard Temperature Pressure Dry) and use limit pressures are :

- maximum pressure 1850 PSIG (127 bars) at 70° F (21° C).  
Evolution of this pressure according to the outside temperature is given in section 8, figure 8.7.4, as well as on a placard on the inside of the cylinder service door,
- minimum pressure 217 PSIG (15 bars).

The oxygen cylinder head is equipped with :

- a hand-controlled isolation valve to permit cylinder installation and removal,
- a microswitch causing **O2 CYL CLOSED** to light on. This message lights on, when the isolation valve is closed,
- a graduated pressure gage,
- a charging valve - refer to the replenishment procedure in section 8,
- an overpressure system consisting of a safety disc. This disc is designed to rupture between 2500 and 2775 PSIG (172 and 191 bars) discharging the cylinder contents outboard,
- a pressure reducing valve adjusting utilization pressure to a value comprised between 64 and 85 PSIG (4.4 and 5.9 bars),
- a low pressure safety valve calibrated to 116 PSIG (8 bars).

- 1) MICRO / MASK switch
- 2) OXYGEN switch
- 3) PASSENGER OXYGEN switch



14231204AAAFMA8002

Figure 7.11.1 - Emergency oxygen system

A control panel located in the cockpit overhead panel at the disposal of the pilot includes :

- a two-position valve ON/OFF (OXYGEN switch) to permit the supply of the front seats occupiers masks,
- a two-position valve DEPLOY/STBY (PASSENGER OXYGEN switch) with guard to permit the supply of the passengers four masks, when the first valve is open.

Oxygen pressure is displayed on the MFD.

An altimetric valve provides an automatic passengers masks actuation function at a cabin altitude between 13000 and 14000 ft when OXYGEN switch is set to ON.

Two pressure-demand type masks allowing quick donning with only one hand, covering the nose and the mouth, as well as two pairs of smoke goggles are at disposal of the pilot and of the R.H. front seat occupier. Masks are installed in cups on the cabin walls aft of the front seats. Permanently connected to the oxygen system, they are equipped with a micro controlled by the MICRO/MASK switch under cover located on the instrument panel near the pilot's control wheel. The cockpit masks are equipped with a microphone, a three-position selector NORMAL, 100 % and EMERGENCY and with a push-button PRESS TO TEST. The proper flow is signaled by a flow indicator (blinker) into the oxygen tubing.

The airplane is equipped with two smoke goggles.

Four passengers constant-flow type masks, covering the nose and the mouth and permanently connected, are installed in two containers on the cabin ceiling. The opening of these containers and the descent of the masks are controlled by the pilot, when OXYGEN switch is set to ON and PASSENGERS OXYGEN switch is set to DEPLOY, or automatically at a cabin altitude between 13000 and 14000 ft with the OXYGEN switch set to ON. The oxygen flow is obtained by pulling on the mask bounded by a lanyard cord to a pin. A proper flow is signaled by the filling of the green bag located on each passenger mask.

**▲ WARNING ▲**

**Do not smoke during oxygen system use.**

**Oil, grease, soap, make up, lipstick and any other greasy substances constitute a serious fire or burning hazard, when on contact with oxygen.**



**Flight above 15000 ft with possible emergency descent**

Minimum oxygen pressure (PSIG) for following conditions :

- 4 minutes from 31000 to 15000 ft. All equipment used from 31000 ft.
- Plus 30 minutes usage by each pilot and passenger at 15000 ft.
- Plus 86 minutes usage by each pilot at 10000 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	631	614	<b>597</b>	580	563	546	529
1	1	759	736	<b>713</b>	691	668	646	623
1	2	885	856	<b>828</b>	799	771	743	715
1	3	1010	976	<b>941</b>	907	873	839	806
1	4	1137	1096	<b>1056</b>	1015	975	935	897
2	0	1037	1001	<b>965</b>	930	894	859	825
2	1	1164	1122	<b>1080</b>	1038	997	956	916
2	2	1289	1241	<b>1192</b>	1144	1097	1050	1004
2	3	1416	1361	<b>1306</b>	1252	1198	1145	1093
2	4	1541	1480	<b>1418</b>	1357	1297	1238	1180

Figure 7.11.2 - Minimum oxygen pressure (PSIG)  
[Flight above 15000 ft with possible emergency descent]

● NOTE ●

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.



**When required to remain above 15000 ft due to minimum enroute altitude**

Minimum oxygen pressure (PSIG) for following conditions :

- Flight above 15000 ft. All equipment used.
- 1 hour usage by each pilot and passenger.
- Plus 1 hour usage by each pilot under 15000 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	<b>585</b>	569	552	536	520
1	1	842	816	<b>789</b>	763	736	710	685
1	2	1067	1029	<b>992</b>	955	918	882	846
1	3	1513	1240	<b>1192</b>	1144	1097	1050	1004
1	4	1513	1452	<b>1392</b>	1333	1275	1217	1161
2	0	992	958	<b>925</b>	891	858	825	793
2	1	1215	1170	<b>1125</b>	1081	1037	994	952
2	2	1439	1382	<b>1326</b>	1270	1215	1161	1108
2	3	1662	1593	<b>1525</b>	1457	1391	1326	1262
2	4	1888	1807	<b>1725</b>	1645	1567	1490	1415

Figure 7.11.3 - Minimum oxygen pressure (PSIG)

[When required to remain above 15000 ft due to minimum enroute altitude]

• NOTE •

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.

•

### Flight between 15000 ft and 10000 ft

Minimum oxygen pressure (PSIG) for following conditions :

- Flight under 15000 ft.
- 90 minutes usage by each pilot and **one** passenger.
- Plus 30 minutes usage by each pilot at 10000 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	<b>585</b>	569	552	536	520
1	1	961	929	<b>896</b>	864	833	801	770
1	2	961	929	<b>896</b>	864	833	801	770
1	3	961	929	<b>896</b>	864	833	801	770
1	4	961	929	<b>896</b>	864	833	801	770
2	0	992	958	<b>925</b>	891	858	825	793
2	1	1333	1282	<b>1231</b>	1181	1131	1083	1035
2	2	1333	1282	<b>1231</b>	1181	1131	1083	1035
2	3	1333	1282	<b>1231</b>	1181	1131	1083	1035
2	4	1333	1282	<b>1231</b>	1181	1131	1083	1035

Figure 7.11.4 - Minimum oxygen pressure (PSIG)  
[Flight between 15000 ft and 10000 ft]

• NOTE •

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.

•



## O<sub>2</sub> smart mike mask

The two cockpit masks, O<sub>2</sub> smart mike masks, are equipped with a system that detects when a communication is made operating one of the push-to-talk buttons. It activates a noise reduction system that attenuates the oxygen flow noise in the headsets.

Noise reduction function operates when the switch located on O<sub>2</sub> connecting line is set to ON.

14351100AAAEIMR8000

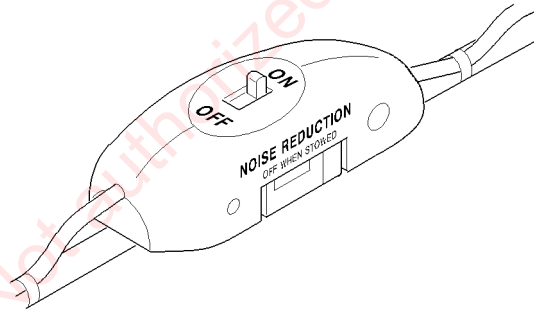


Figure 7.11.5 - Noise reduction switch

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PIM - Not authorized for operation

## 7.12 - Air data system and instruments - see figure 7.12.1

Airplane air data system consists of :

- two separate static pressure systems supplying the standby attitude module and air data computers (ADC).

A part of system 1 is backed up by an alternate system which operation is controlled by a switching valve (normal / alternate) attached to instrument panel under R.H. control wheel. In case of obstruction or icing of ports, this selector isolates airplane normal static system. When selector is on alternate position (pulled rearwards), static pressure is picked from a port located in airplane rear fuselage.

- two separate dynamic pressure systems supplying the standby attitude module and air data computers.

### Static pressure systems

#### Primary systems

Two dual static ports (one on either side of the fuselage tail part) supply a dual system routed towards the cockpit.

System 1 part, which is connected to the switching valve (normal / alternate), supplies the  $\Delta P$  cabin and the electronic standby indicator. The system remainder directly supplies one of the air data computers.

System 2 is directly connected to the second ADC.

Systems feature a drain valve located under the instrument panel on R.H. side.

#### Alternate static source

The alternate static port located in the rear fuselage supplies a system routed to the switching valve (normal / alternate) in order to replace static system 1.

The alternate line incorporates a drain plug located under the instrument panel on R.H. side.

- Static pressure from alternate line is only provided to standby instrument.

## **Dynamic pressure system**

One heated pitot probe is installed under the L.H. wing. The second one is installed under the R.H. wing. The first one supplies the standby attitude module and one ADC.

The second one supplies the other ADC.

Both lines incorporate a drain plug located in the root of L.H. and R.H. wings.

### **Pitot heating**

Pitot heating is controlled by PITOT L HTR and PITOT R & STALL HTR switches, installed on DE-ICE SYSTEM panel. Refer to chapter 7.13 for further details.

#### **▲ CAUTION ▲**

Do not use heating during prolonged periods on ground to avoid pitot  
overheat.

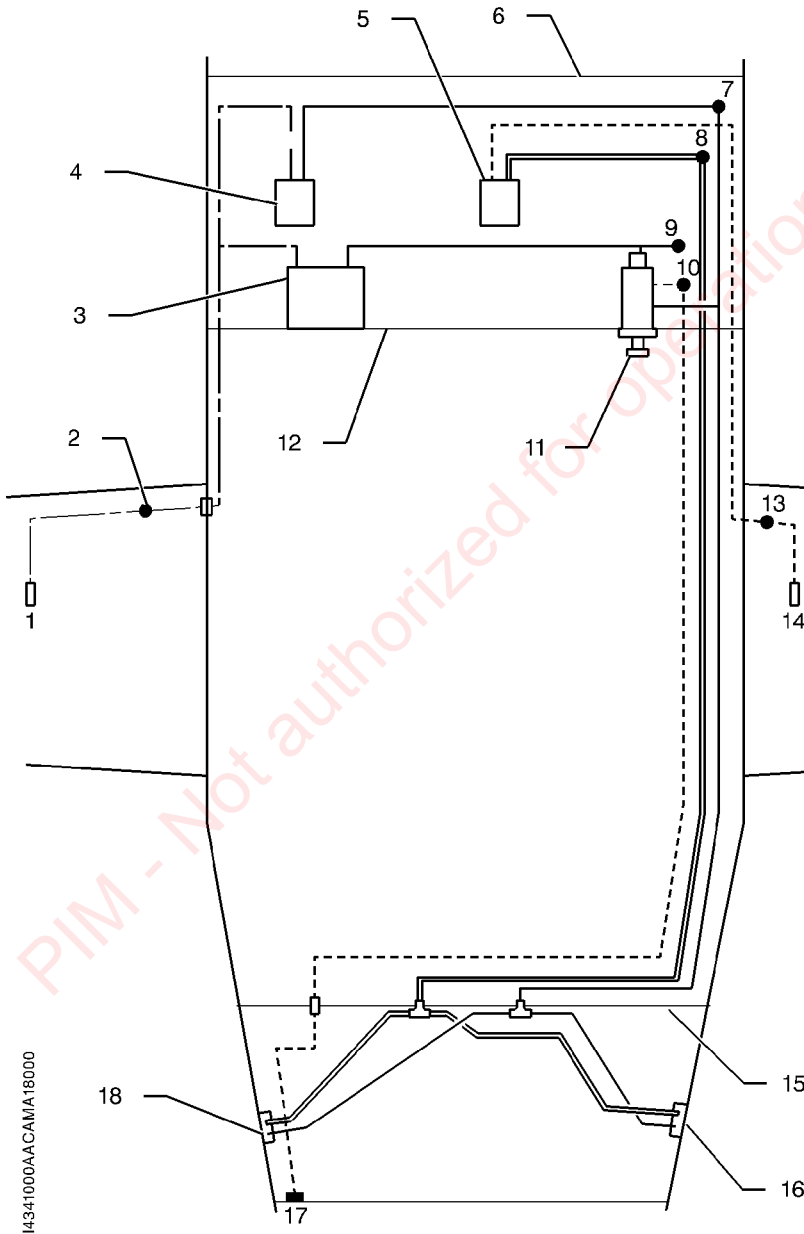


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PIM - Not authorized for operation

- 1) Pitot L
- 2) Dynamic system drain
- 3) Electronic Standby Instrument
- 4) ADC
- 5) ADC
- 6) FWD pressure bulkhead
- 7) Static system drain
- 8) Static system drain
- 9) Static system drain
- 10) Emergency static system drain
- 11) Emergency static valve (Normal / alternate)
- 12) Instrument panel
- 13) Dynamic system drain
- 14) Pitot R
- 15) Rear pressure bulkhead
- 16) Static port
- 17) Emergency static port
- 18) Static port

Figure 7.12.1 (1/2) - Air data system



14341000AACAMIA18000

Figure 7.12.1 (2/2) - Air data system

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PIM - Not authorized for operation



**7.13 - Vacuum system and instruments** - see figure 7.13.1

The airplane is fitted with a vacuum system providing the suction necessary to operate the cabin pressurization and the leading edge deicing.

Vacuum system includes :

- A pressure regulator
- An ejector
- A regulating and relief valve
- A pressure switch

Compressed air necessary for the ejector to create decompressed air is taken from the powerplant. The air flow is regulated before going into the ejector which creates necessary vacuum by venturi effect.

A relief valve fixed in cabin to frame C2, maintains the vacuum for pressurization system. In case of pressure drop, a pressure switch, installed in the system, indicates the failure by causing **VACUUM LOW** to light on.

**Standby attitude module (MD302)**

The Mid-Continent Instrument and Avionics MD302 Standby Attitude Module consists of two LCD screens. The first screen displays the airplane attitude (pitch, roll and magnetic heading) and the second screen displays the airplane altitude and airspeed. The MD302 is powered from the ESSENTIAL BUS 2 or internal replaceable battery ensuring that the airplane can continue safe flight and landing in the event of a loss of primary attitude and air data displays. Pitot and static pressures are provided to the MD302 solid state electronic sensors using the airplane pitot probe and static sources.

The magnetic heading data is provided by MD32 magnetometer installed on the left wing.

The standby attitude module is located in the top left hand corner of the instrument panel.

- 1) Pressure regulator
- 2) Ejector
- 3) Valve
- 4) Regulating and relief valve
- 5) Pressure switch
- 6) Failure CAS message

Figure 7.13.1 (1/2) - Vacuum system

I437D000AAA PMA18000

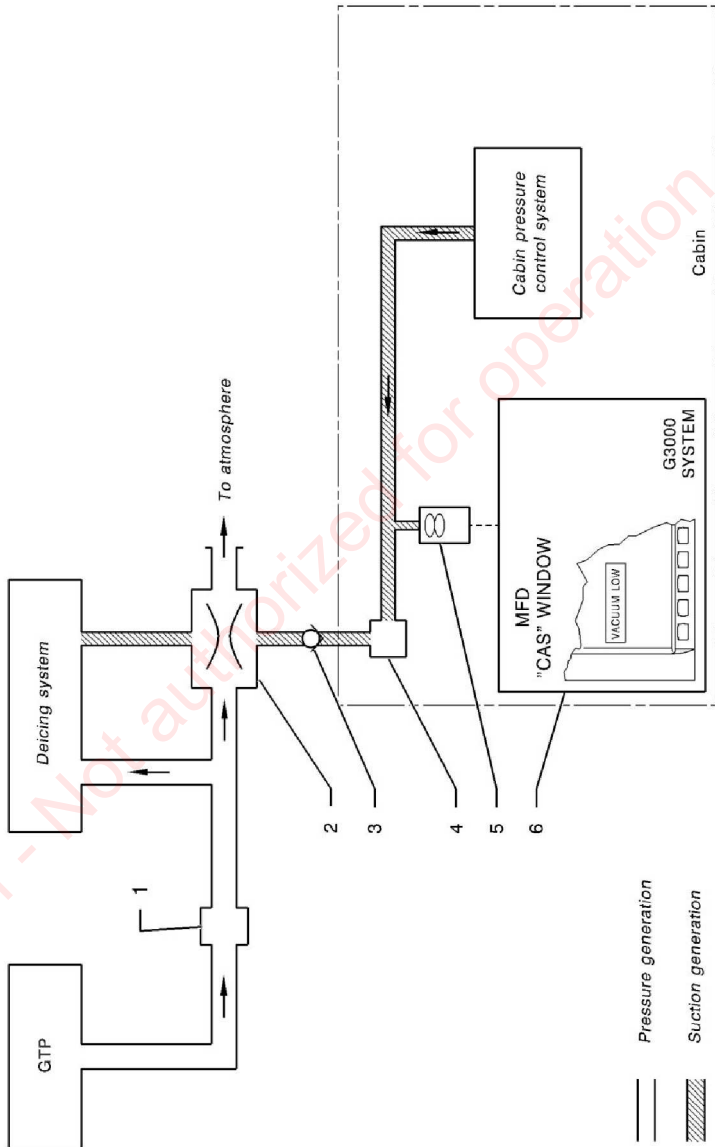


Figure 7.13.1 (2/2) - Vacuum system

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PIM - Not authorized for operation

## 7.14 - Ice protection equipment

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

Deicing check and control panel is located on the lower L.H. side of the instrument panel.

### Ice Detection System

#### ▲ CAUTION ▲

Ice Detection System is only an advisory system. 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

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 lights	CAS
OFF		
ON (AUTO mode)		
ON (MAN mode)		
FAIL		<b>AIRFRAME DEICE FAIL</b>

Wing leading edge icing inspection light - see chapter 7.8 paragraph Exterior lighting.

## 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 lights	CAS
OFF		
ON (AUTO mode)		
ON (MAN mode)		
FAIL		<b>PROP DEICE FAIL</b>

**PROP DEICE ON** is displayed in the CAS window if the engine is shut down with PROP DE ICE switch still ON.

### ▲ CAUTION ▲

When 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 deiced electrically 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 lights
OFF	
ON (AUTO mode)	
ON (MAN mode)	

## Heating of pitots and stall warning sensor (PITOT L/R & STALL HTR)

The two pitots, which supply ADCs, the airspeed indicator and the stall warning sensor are electrically heated. This deice equipment must be used even during flight into non-icing conditions.

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 on the MFD 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 set forth in chapter 7.6 paragraph Engine air inlet.

**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 push-button on cockpit overhead panel.

The system is operational if a stall / stall aural warning alert is heard on the alarms speaker.

- NOTE •

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 R.H. front station side panel.

A pressure gage allows checking the fire extinguisher condition. Follow the recommendations indicated on the extinguisher.

## **Autopilot**

Autopilot control panel is located above the MFD. Refer to section 2 Limitations of this POH and to GARMIN Pilot's Guide for further details.

## **GPS**

GPS navigation is performed through the GARMIN system. Refer to section 2 Limitations and section 4 Normal procedures of this POH and to GARMIN Pilot's Guide for further details.

**Weather radar**

The weather information can be displayed on PFD1, PFD2 and MFD.

Refer to section 2 Limitations of this POH and to GARMIN Pilot's Guide for further details.

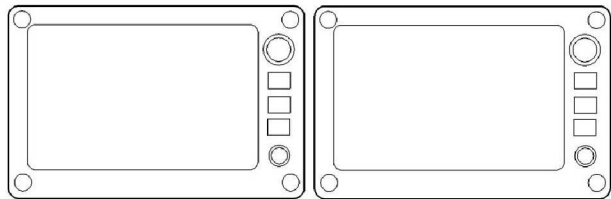
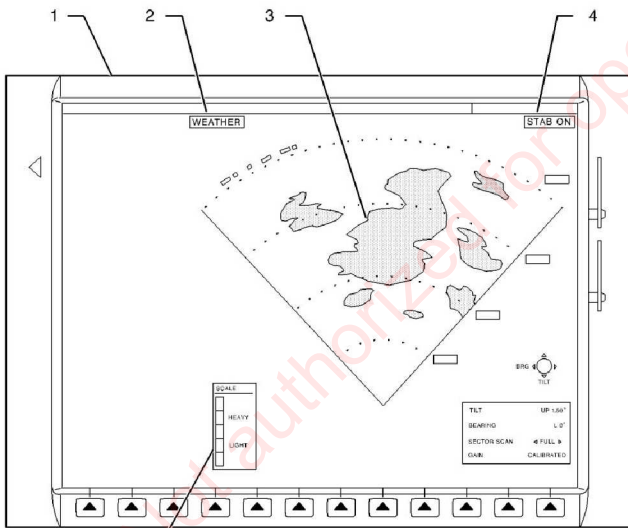
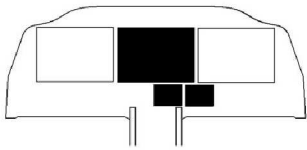
The controls for the weather radar are located on the touchscreen controllers.

The weather radar is protected by the WXR breaker.

PIM - Not authorized for operation

- 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 (1/2) - Weather radar display and controls



1432814AA/MAE300

Figure 7.15.1 (2/2) - 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 fuselage R.H. side.

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 manufacturer manual.



Operation of the emergency locator transmitter is obtained as follows :

- from the instrument panel by setting 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 remote control switch is set to ARM/OFF and locator transmitter switch is set to ARM/OFF.

A red indicator light located on ELT remote control switch in the cockpit indicates to the pilot the emergency locator transmitter is transmitting.

A red indicator light located above locator transmitter switch and a buzzer located in the fuselage rear section indicate 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 remote control switch or ELT switch to ON.
  - a) The ELT keeps on transmitting emergency signal.
  - b) On remote control box, red indicator light flashes.
  - c) On ELT, red indicator light flashes.
  - d) Near ELT, the buzzer sounds.
- 2) Wait approximately for 1 second.



- 3) Set remote control switch to ARM/OFF or ELT switch to ARM/OFF.
- a) The ELT does not transmit emergency signal any longer.
  - b) On remote control box, red indicator light illuminates for about 1 second, then goes off.
- or
- c) On ELT, red indicator light goes off.
  - d) Near ELT, the buzzer does no more sound.

Then ELT is 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 GASC, 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 the 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 on the MFD 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 (FS 510)

The airplane is equipped with a flight deck information system allowing portable electronics devices to stream data to and from the GARMIN system.

For the system description and its utilization, refer to GARMIN Pilot's Guide.

## Data collection and transmission system (FASTBOX)

The data collection and transmission system collects data from airplane data buses and discrete inputs and stores it in resident non-volatile memory.

When the airplane is on the ground and a few minutes after the engine shut-down, recorded data are automatically transmitted to a ground station via the cellular or WiFi network. These data are intended to be used for maintenance and trend monitoring.

The data collection and transmission system records data from the GASC and data from the GIA (GARMIN integrated flight deck system).

The data collection and transmission system starts recording data as soon as the engine is running, and stops recording data when the engine is shutdown.

The data collection and transmission system is installed in the front cargo compartment, and does not require a pilot input to operate.

The data collection and transmission system is powered from the BATT BUS and protected by the REC circuit breaker.

## 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 of these approaches are provided in the applicable Pilot's Guide and Cockpit Reference 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/NAV

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 rather published guidance.

The minimums of an LNAV/VNAV approach represent a DA rather than an 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 aircraft is between the FAF and MAP, excessive deviation indicators appear as white vertical lines to indicate an area where the vertical deviation exceeds  $\pm 75$  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 conduct 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 glide-path when SBAS is not available or allowed.

**■ Final Approach Segment (FAS)**

Altimeter systems assume an ISA temperature model.

When actual atmosphere deviates from the ISA model it results in altitude errors.

For example, performing a Baro-VNAV 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 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 glide-path 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 aircraft.

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 GPS approach alarm limits being 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 an **APR DWNGRADE** and a change in the annunciated service level in the HSI.

As the **APR DWNGRADE** may not be triggered under certain circumstances, the HSI annunciation shall be considered as the primary mean to annunciate any approach downgrade.

Under certain circumstances, when the GNSS integrity requirements are not met nor approach level is available the approach may be aborted.

This is annunciated through an **ABORT APR** and the service level annunciation being removed from the HSI.

If SBAS becomes unavailable on an RNAV LNAV/VNAV approach, **L/VNAV** is shown in yellow, the system switches to LNAV/VNAV (Baro-VNAV) service level and the **APR DWNGRADE** will be generated (the VDI will be flagged NO GP until the **APR DWNGRADE** has been acknowledged).

If the **APR DWNGRADE** is acknowledged, the **L/VNAV** is shown in magenta.

If the **APR DWNGRADE** is not acknowledged, the system will downgrade to LNAV service level, (**LNAV** shown in magenta), the VDI will remain flagged 'NO GP', and no additional downgrade system message will be generated.

If SBAS becomes unavailable on an RNAV LPV approach, **LPV** will be shown in yellow, but the CDI and VDI will continue to be shown. At one minute to the FAF, an **APR DWNGRADE** will be generated.

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 3deg glide path 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 can also 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 consider terrain or obstacles. 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 suppression of terrain alerts when flying an approach with vertical guidance. The TAWS logic is adjusted to ensure that there is no suppression 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, if installed****▲ 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 (Post-MOD70-0650-34A)**

HomeSafe is based on GARMIN Emergency Autoland function that is described in the GARMIN Pilot's Guide.

HomeSafe is an emergency autopilot function that is meant to be used in the case 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**

Any person on board the airplane can activate the HomeSafe emergency function by pushing the HomeSafe button located on top of the instrument panel.

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 2 minutes (either by pressing the LVL push-button or automatically).
- The EDM function has reached the stabilization altitude (15000 ft).

When HomeSafe is activated, **HOMESAFE REQUEST** is displayed in the CAS window for 15 seconds before HomeSafe starts the automatic landing process. During those 15 seconds, if the autopilot was not engaged prior to HomeSafe activation, the Level mode is activated.

HomeSafe uses all the airplane systems in order to enable the automatic landing of the airplane.

Once started, 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 function flight by playing a series of informational videos on the MFD related to the different phases of the HomeSafe function flight.
- 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 R-NAV approach,
- Set the airplane in landing configuration (deploy flaps and landing gear),
- Land and stop the airplane on the runway,
- Shut down the engine.

To perform the entire sequence, HomeSafe requires the airplane 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 :

- fully capable of flying the airplane,
- fully aware of all the actions the pilot will have to perform to reconfigure the airplane (the initial flight plan in the FMS is lost, the landing gear and flaps positions may not agree with LANDING GEAR and FLAPS levers positions).

**▲ CAUTION ▲**

HomeSafe deactivation is not recommended on final approach.

When HomeSafe is active, the cockpit displays are no longer complying with the requirements of a pilot interface (particularly, engine parameters and CAS messages are not available).

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.

HomeSafe can be stopped by any of the following actions:

- Press twice the AP/TRIM DISC push-button on the control wheel,
- Press the AP button on the AFCS control unit, only applicable if HomeSafe has taken control of the airplane.

**▲ CAUTION ▲**

MFD reconfiguration can take up to 1 minute. During this time, engine instruments and CAS messages can be displayed on PFD by using DISPLAY BACKUP.

**AC CONF MISMATCH** is displayed in the CAS window if HomeSafe is stopped after it has begun to set the airplane in landing configuration. In this case, the pilot must set the FLAPS and LANDING GEAR levers positions to agree with the flaps and landing gear positions in order to retake control of them.

The initial flight plan in the FMS is lost, and the pilot has to create a new one.

## Protection - Safety

**HS CONFIG MODE** is displayed in the CAS window when HomeSafe is in configuration mode.

HomeSafe function is protected by the HOMESAFE breaker.

## Optional equipment

For optional equipment such as stormscope, SVS or TAWS, refer to section 9 Supplements.

Other optional equipment such as radio altimeter or chartview system or TAS are described in the GARMIN Pilot's Guide.

- NOTE •

Refer to section 2 Limitations for chartview system operating limitations.

-

**Section 8**

## Handling, servicing and maintenance

## Table of contents

8.1	-	General .....	8.1.1
8.2	-	Identification plate .....	8.2.1
8.3	-	Publications .....	8.3.1
8.4	-	Inspection periods .....	8.4.1
8.5	-	Alterations or repairs .....	8.5.1
8.6	-	Ground handling .....	8.6.1
		Towing .....	8.6.1
		Parking .....	8.6.1
		Tie-down .....	8.6.2
		Jacking .....	8.6.4
		Leveling .....	8.6.4
		Flyable storage .....	8.6.4
		Long term storage without flying .....	8.6.4
8.7	-	Servicing .....	8.7.1
		Maintenance .....	8.7.1
		Engine oil .....	8.7.1
		Fuel .....	8.7.2
		Landing gear .....	8.7.7
		Oxygen .....	8.7.8
		BatteryMINDER charger .....	8.7.14

8.8	-	Airplane cleaning and care .....	8.8.1
		Windshield and windows .....	8.8.1
		Painted surfaces .....	8.8.1
		Propeller care .....	8.8.2
		Engine care .....	8.8.2
		Interior care .....	8.8.2
8.9	-	Preparation of the airplane (equipment and furnishings) .....	8.9.1
8.10	-	Utilization by cold weather (- 0°C to - 25°C) or very cold weather (- 25°C to - 40°C) .....	8.10.1

PIM - Not authorized for operation

## 8.1 - General

This section contains the procedures recommended by the manufacturer for the proper ground handling and routine care and servicing of airplane. Also included in this section are the inspection and maintenance requirements which must be followed if your airplane is to retain its performance and dependability.

It is recommended that a planned schedule of lubrication and preventive maintenance be followed, and that this schedule be tailored to the climatic or flying conditions to which the airplane is subjected.

For this, see manufacturer maintenance manual.

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PIM - Not authorized for operation



## 8.2 - Identification plate

Any correspondence regarding your airplane should include its serial number. This number together with the model number, type certificate number and production certificate number are stamped on the identification plate attached to the left side of the fuselage beneath the horizontal stabilizer.

PIM - Not authorized for operation

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PIM - Not authorized for operation

### 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 guides).

In addition, the owner may get access to the following publications online :

- Maintenance Manual
- Illustrated Parts Catalog
- Catalog of Service Bulletins, Service Letters

**▲ CAUTION ▲**

POH must always be in the airplane.



Intentionally left blank

PIM - Not authorized for operation

## **8.4 - Inspection periods**

Refer to regulations in force in the certification country for information concerning preventive maintenance to be carried out.

A maintenance manual must be obtained prior to performing any preventive maintenance to make sure that proper procedures are followed. Maintenance must be accomplished by licensed personnel.

PIM - Not authorized for operation

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PIM - Not authorized for operation

## **8.5 - Alterations or repairs**

It is essential that the airworthiness authorities be contacted prior to any alterations or repairs on the airplane to make sure that airworthiness of the airplane is not violated. Alterations or repairs must be accomplished by licensed personnel.

PIM - Not authorized for operation

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PIM - Not authorized for operation



## 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 pull is exerted on blade tips.



The airplane should be moved on the ground with a towing bar and a suitable vehicle in order not to damage the nose gear steering mechanism. Nose gear fork is equipped with an integrated towing fitting.

### ▲ CAUTION ▲

Do not tow the airplane when 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, head 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 ●

Do not use solar screens or shields installed on the airplane inside, or leave sun visors down against windshield when airplane on ground. The reflected heat from these items causes a temperature increase which accelerates the crack growth or crazing and may cause the formation of bubbles in the inner layer of multilayer windshields.



Beyond 24 hours parking, use windshield protection screen provided with lateral and underside straps.

For long term parking, blanking covers (static ports, pitot, engine air inlet, NACAs, exhaust stubs), cockpit cover, tie-downs, wheel chocks, propeller lock and control lock are recommended.

In severe weather and high wind conditions, tie the airplane down as outlined in the following paragraph.

### **Tie-down**

Proper tie-down procedure is the best protection against damage to the airplane by gusty or strong winds. To tiedown the airplane securely, proceed as follows :

- Install control lock - see figure 8.6.2.
- Chock all wheels.
- Tie sufficiently strong ropes or chains to hold airplane down ; insert a rope in each tie-down hole located on flap hinge arm ; secure each rope to a ramp tie-down or to mooring rod.
- Check that doors are closed and locked.



Figure 8.6.1 - Turning angle limits

## Jacking

When it is necessary to jack the airplane off the ground, refer to maintenance manual for specific procedures and equipment required.

## Leveling

Level the airplane as described in maintenance manual.

## Flyable storage (below 28 days)

Airplanes placed in storage for a maximum of 28 days are considered in flyable storage.

Storage from 0 to 7 days :

- Engine : according to maintenance manual P & W C.

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 oxygen cylinder isolation valve.

Storage from 8 to 28 days :

- Engine : according to maintenance manual P & W C.

Airplane fueling :

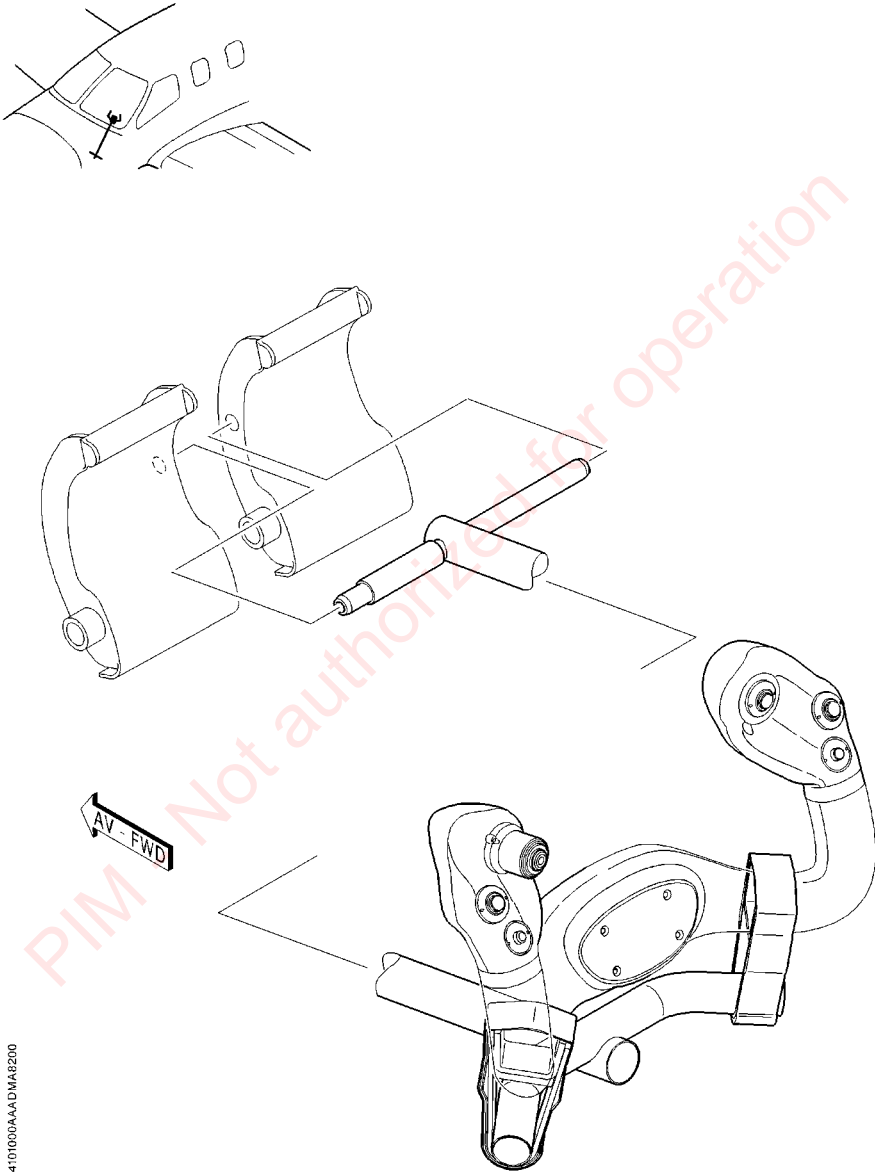
- Keep fuel tanks full to minimize condensation in the tanks. Keep the battery fully charged to prevent the electrolyte from freezing in cold weather.  
Close oxygen cylinder isolation valve.

Battery, remaining in the airplane or removed :

- Disconnect battery and check its charge level at regular intervals.

## Long term storage without flying (over 28 days)

Refer to maintenance manual for the procedures to follow.



14101000AAAADMA8200

Figure 8.6.2 - Control lock device

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PIM - Not authorized for operation

## 8.7 - Servicing

### Maintenance

In addition to the preflight inspection, refer to section 4, Normal procedures, servicing, inspection and test requirements for the airplane are detailed in the maintenance manual.

Maintenance manual outlines all items which 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

Nominal Viscosity	Specification	NATO Code
5cSt	MIL-PRF-23699G	O-156 (STD) O-154 (HTS)

Figure 8.7.1 - Recommended engine oil types

Reference : Service Bulletin P & W C. No. 14001 at the latest revision

#### Oil capacity

System total capacity :

12.7 Quarts (12 Litres) (oil cooler included)

Usable capacity :

6 Quarts (5.7 Litres)

#### Servicing

The engine oil should be changed and the oil filter cleaned/replaced at intervals recommended in Pratt & Whitney Canada Engine Maintenance Manual (EMM) (Ref. chapter 72-00-00, table 601, periodic inspection).

### Oil level check

To avoid overfilling of oil tank, and high oil consumption, an oil level check is recommended within 30 minutes after engine shutdown. 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 LO-IDLE for five minutes, and recheck oil level.

Check oil level against marking on dipstick and top-up as required. Normal oil level is between MAX HOT and one US quart (0.83 Imp. Quart, 0.95 litres) below MAX HOT, with engine in horizontal attitude.

• NOTE •

Filling the oil to the maximum level may result in high consumption rate, with the oil exiting through the accessory gearbox breather.

•

▲ CAUTION ▲

When filler cap assembly is installed and locked, no movement is allowed.

▲

### Fuel

**Total capacity each tank : 150.5 USG (570 l).**

• NOTE •

To minimize condensation, it is recommended that airplane be refueled after each flight, respecting weight and balance limits.

•

▲ CAUTION ▲

Never fly the airplane with contaminated (water, sand, rust, dust...) or unapproved fuel

▲

Before each flight and after each fueling, use a sampler to bleed off some fuel through each tank and fuel filter drain to detect possible contamination and be sure that fuel used is the proper quality. If contamination is present, continue draining through all draining points until fuel is free of contamination. If quality of fuel used is not correct, defuel airplane completely and refuel with proper quality fuel.



**▲ WARNING ▲**

**During all fueling operations, fire fighting equipment must be available ; attach grounding wire to an unpainted metallic part of the airplane.**

**Do not operate any avionics or electrical equipment on the airplane during fueling. Do not allow open flame or smoking in the vicinity of the airplane while fueling.**



**▲ CAUTION ▲**

During fueling operations, take care not to damage pneumatic deicer boots located on wing leading edge.

The use of aviation gasoline (AVGAS) must be restricted to emergencies only. AVGAS will not be used for more than 150 cumulative hours during any period between engine overhaul.



• NOTE •

Use of AVGAS must be recorded in engine module logbook.



US Specification (US)	French Specification (FR)	English Specification (UK)	NATO Code
ASTM-D1655 JET A ASTM-D1655 JET A1 ASTM-D1655 JET B	AIR 3405C Grade F35	DERD 2494 Issue 9	F35 without additive
MIL-DTL-5624 Grade JP-4	AIR 3407B	DERD 2454 Issue 4 Amdt 1	F40 with additive
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amdt 1	F44 with additive when utilization
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amdt 1	F34 with additive S748
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43 without additive

Figure 8.7.2 - Recommended fuel types  
Reference : Service Bulletin P & W C. No. 14004

### Fuel additives

Fuel used must contain an anti-ice additive conforming to MIL-I-27686 or MIL-I-85470 specification.

Strict adherence to recommended preflight draining instructions as called for in Section 4 will eliminate any free water accumulations from the tank sumps. While small amounts of water may still remain emulsified in the gasoline, it will normally be consumed and go unnoticed in the operation of the engine.

One exception to this can be encountered when operating under the combined effect of 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 water emulsified can precipitate from the fuel stream and freeze in sufficient quantities to induce partial icing of the engine fuel system.

While these conditions are quite rare and will not normally be a problem to owners and operators, they do exist in certain areas of the world and consequently must be dealt with, when 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 has a freezing temperature depressant effect.

EGME or DIEGME must be carefully mixed with the fuel in concentration, it must be between a minimum of 0.06 % and a maximum of 0.15 % by volume. Figure 8.7.3 provides EGME or DIEGME / fuel mixing ratio information.

#### ▲ CAUTION ▲

Do not permit the concentrate of EGME or DIEGME to come in contact with the airplane finish or fuel tank

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 by deterioration of protective primer, sealants and seals of system 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 technical manual for the differential refractometer 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 addition of anti-icing liquid :

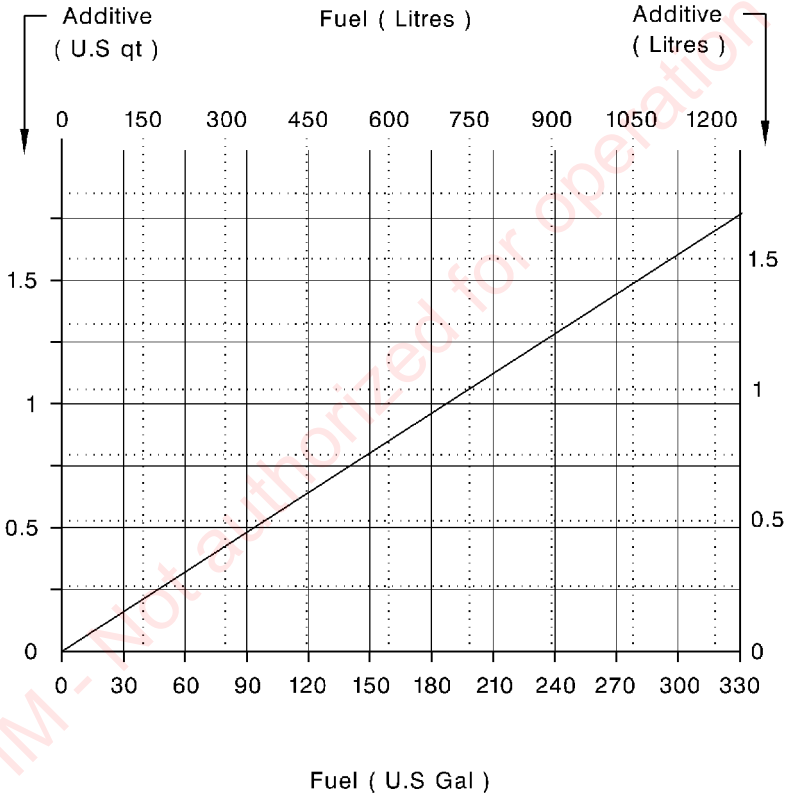
- liquid И - GOST 8313-88

Above-mentioned liquid is added in the quantity equal to 0.3 percent per volume.

**▲ CAUTION ▲**

Refer to Service Bulletin P & WC No. 14004 at its latest revision for appropriate quantities.





I4284000AAEMA8000

Figure 8.7.3 - 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 hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 87 psi (6 bars).

### Main gear shock absorbers

Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; 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 •

A higher inflation pressure has to be applied to tires and shock absorbers when in very cold conditions - refer to chapter 8.9.

- 

(\*) Tire inflation pressures are given for an airplane on ground at 21° C.  
An ambient temperature change of 3° C produces approximately 1 % pressure change.

## Oxygen

The replenishment device of the oxygen cylinder is installed directly on the cylinder head. It consists of a charging valve and of a pressure gage graduated from 0 to 2000 PSIG. A chart - see figure 8.7.4, located on the inside of the cylinder service door, gives the cylinder charge maximum pressure according to the environment temperature.

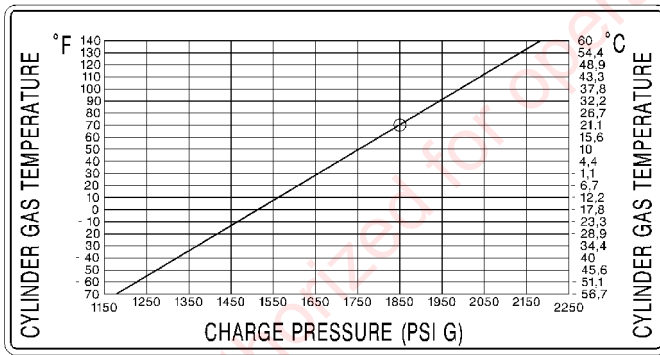


Figure 8.7.4 - Charge pressure chart

**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 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.**

**Introduction of petroleum based substances such as grease or oil to oxygen creates a serious fire hazard. Use no oil or grease with the oxygen replenishment equipment.**

**Always open 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 carried out by qualified personnel.

**● NOTE ●**

The cylinder full charge is assured for a pressure of 1850 PSIG (127 bars) at a temperature of 70° F (21° C). If the cylinder temperature differs from 70° F (21° C), refer to figure 8.7.4 which lists the required pressures according to the cylinder temperature.



- 1 - Open the oxygen service door on the R.H. rear karman.
- 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.

*If the pressure on the oxygen cylinder gage is low :*

Fill the oxygen cylinder

- 5 - Make sure the area around the oxygen cylinder charging valve is clean. Remove the cap from the charging valve.
- 6 - Make sure the oxygen supply hose is clean and connect it to the charging valve.
- 7 - Slowly pressurize the oxygen cylinder to the correct pressure.
- 8 - Close the oxygen supply and let the cylinder temperature become stable.
- 9 - Monitor the oxygen pressure on the gage and fill to the correct pressure if necessary.
- 10 - Release the pressure in the oxygen supply hose and disconnect from the charging valve.
- 11 - Install the cap on the charging valve.
- 12 - Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 13 - Close the oxygen service door.



**Passenger masks repacking instructions****▲ CAUTION ▲**

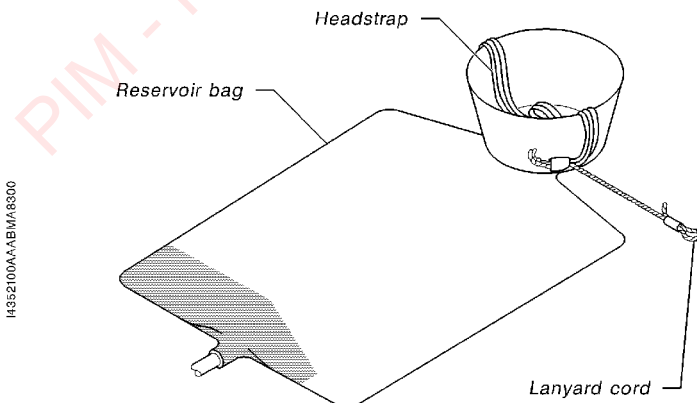
Do not use oil or other petroleum based lubricants on passenger oxygen mask or deployment container. Oil based lubricants are a fire hazard in oxygen-rich environments.

Repacking procedures shall be performed by personnel familiar with the instructions and warnings in this document. Improperly packed masks can damage the masks or result in failure of the masks to deploy.

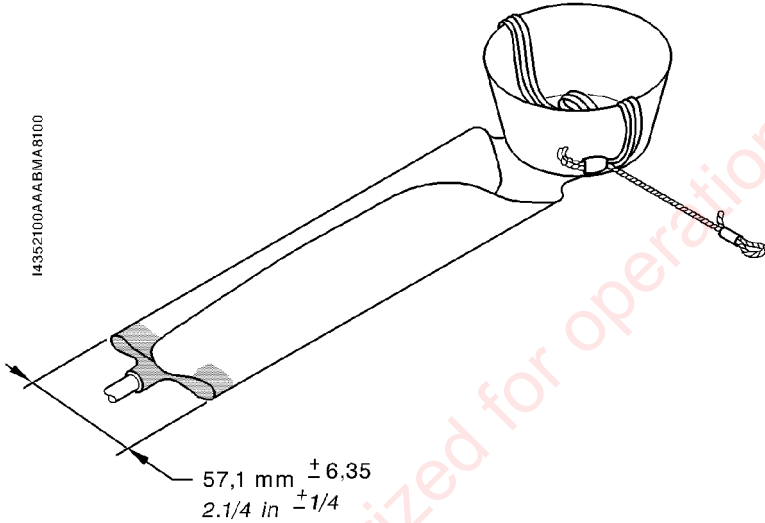
**▲ WARNING ▲**

**Masks shall be repacked in an area free of oil, grease, flammable solvents or other contaminants.**

- 1 - Inspect and disinfect 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 headstrap into facepiece. Pull lanyard cord out to side of facepiece so that it does not interfere with repacking.
- 3 - Lay reservoir bag on flat surface and smooth out wrinkles.



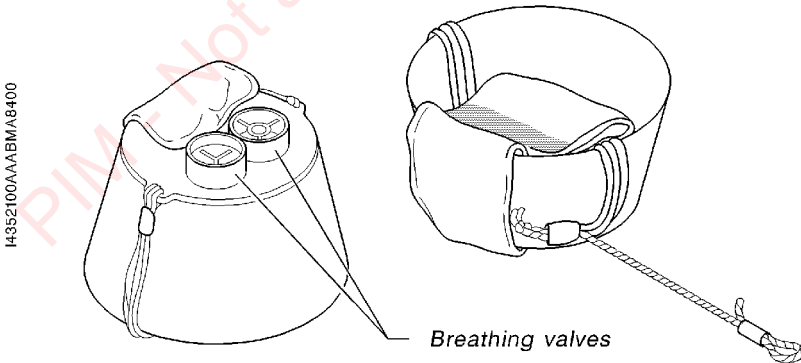
- 4 - Gently fold reservoir bag lengthwise into thirds (outside edges folded inward over center of bag). Do not crease bag.



- 5 - Fold reservoir bag away from breathing valves and into facepiece. Make sure bag does not cover breathing valves.

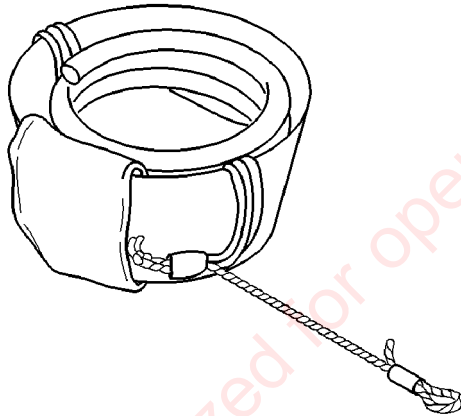
*Top view*

*Bottom view*



- 6 - Coil oxygen tubing inside facepiece over reservoir bag.

I4352100AA-ABMA 18000



- 7 - Connect oxygen tubing to manifold oxygen fitting.

▲ **WARNING** ▲

**Make sure lanyard pin is inserted into correct check valve for mask being installed. Cross connected pins will result in passengers pulling lanyard cords only to initiate oxygen flow to another mask.**



- 8 - Insert lanyard pin into corresponding check valve.
- 9 - Place mask facepiece - first in deployment container. Make sure that oxygen tubing and lanyard cord are free to deploy and are not caught between the container and lid.
- 10 - Close and latch deployment container lid.

## BatteryMINDER charger

▲ **CAUTION** ▲

- Read carefully charger manufacturer instructions before use.
  - The charger shall be used only on ground.
- The charger is not designed to be installed permanently on the airplane.
- Never charge a frozen battery or one at temperature above 51°C (123°F).

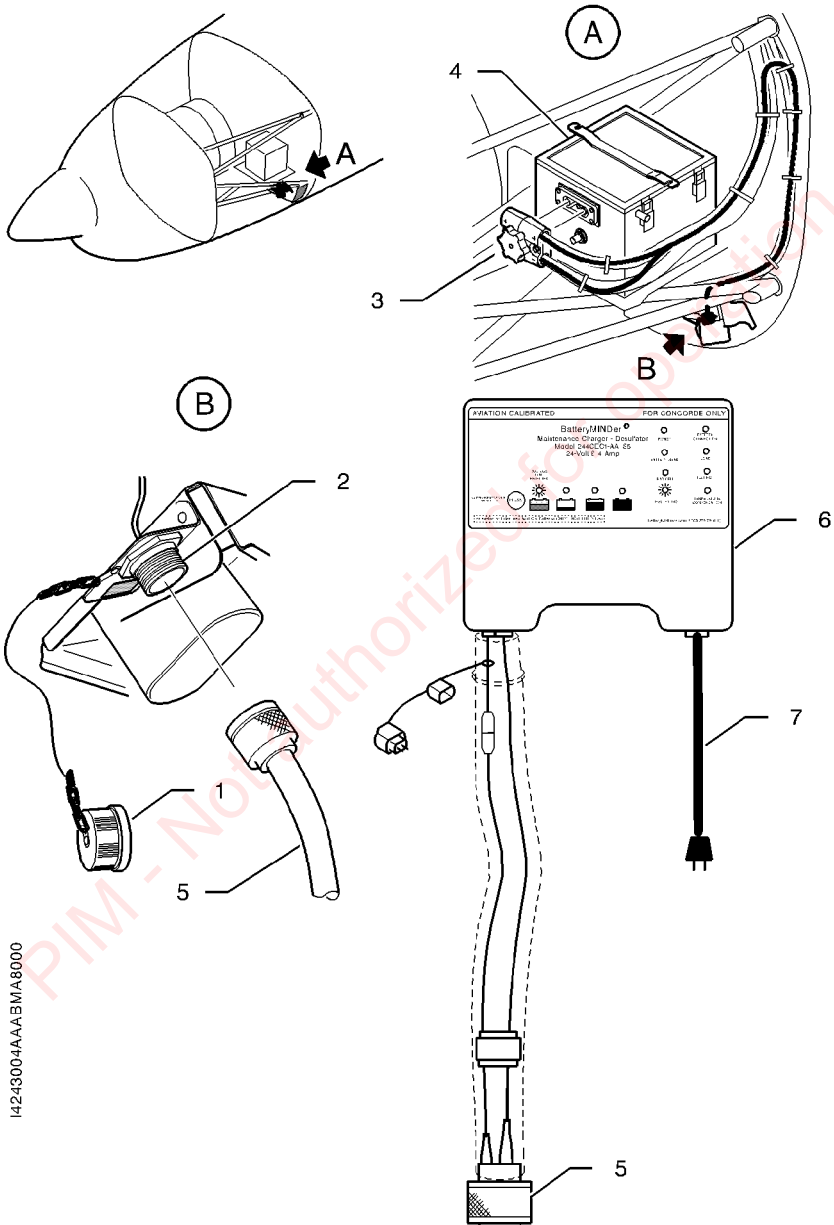
▲ **CAUTION** ▲

Make sure that the Quick-Disconnect connector (3) is connected to the battery (4) before setting BatteryMINDER charger 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 plug (7).
- 6 - Begin the operations according to the charger instruction manual.
- 7 - After use, disconnect the BatteryMINDER charger (7) then (5), put the cap (1) back on the connector (2) and push the BATT BUS breaker located in the front cargo compartment.

- 1) Cap
- 2) Connector
- 3) Quick-disconnect connector
- 4) Battery
- 5) BatteryMINDER charger connector plug
- 6) BatteryMINDER charger
- 7) Plug

Figure 8.7.5 (1/2) - Removal / Installation of BatteryMINDER charger



14243004AAA.BMIA8000

Figure 8.7.5 (2/2) - Removal / Installation of BatteryMINDER charger

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PIM - Not authorized for operation

## 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 maintenance manual for products and procedures to apply.



Apply the cleaner sparingly with soft cloths 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 soft flannel cloth.

▲ CAUTION ▲

Do not use any of the following products on, or for cleaning windows :  
methanol, methylated alcohol, gasoline, benzene, xylene,  
methyl-ethyl-ketone, acetone, carbon tetrachloride, lacquer paint  
thinners, commercial or household window cleaning sprays. In case of  
doubt concerning a product, do not use it.

During cleaning operation, avoid wearing objects such as ring, watch,  
bracelet 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 forces or speeds might  
produce redhibitory defects.



Follow by carefully washing 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  
since this builds up an electrostatic charge which attracts dust. Waxing will finish the  
cleaning operation. A thin, even coat of wax polished out by hand with 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 since the cover may scratch the plastic surface.

### Painted surfaces

Refer to 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 clean off grass and bug stains will assure long blade life. Never use an alkaline cleaner on the blades ; remove grease and dirt. Refer to maintenance manual for the procedures to follow.

## **Engine care**

Refer to 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 maintenance manual.

PIM - Not authorized for operation



## 8.9 - Preparation of the airplane (equipment and furnishings)

### ▲ WARNING ▲

In any accommodation, make sure access to emergency exit is free.



### ▲ CAUTION ▲

Removed equipment items must be stowed in a place which ensures their integrity.



Many accommodations are authorized by airplane manufacturer. They are enumerated in section 7.

This procedure specifies how to change your 6-seat accommodation into 4-seat accommodation, and conversely. However, it can be used partly to remove or install an equipment item.

However, the pilot must ensure that he gets all necessary authorizations from his regulatory authority.

#### 1 - Conversion of 6-seat accommodation into 4-seat accommodation - see figures 8.9.1, 8.9.2, 8.9.3 and 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

- 1) To remove rear seats, perform the following operations

### ▲ CAUTION ▲

In order to prevent cushion covering damage, protective covers should be put on seats.



- a) Install protective covers.

- b) Unlock backrest using backrest tilting handle (6) and fold it forward.

● NOTE ●

For the R.H. rear seat, backrest tilting handle is located behind backrest.



- c) Unlock seat using seat tilting handle (1) and tilt it forward.

▲ CAUTION ▲

Make sure to disconnect the seat heating system before the removal of the seat to prevent harness damage.



- d) Disconnect heating system harness, and clip the loose connector to the holder located on the seat structure.
- e) Clear the carpet from under the seat to facilitate moving in rails.
- f) Open the floor hatch and clip the second loose connector to the holder located under floor panel. Close the floor hatch.
- g) Hold the seat in tilted position and unscrew quick links (7) of strap (9) located under L.H. seatpan.

● NOTE ●

This operation is specific to L.H. seat.



- h) Pull up and hold L.H. and R.H. rings (2), and turn knobs (8) by 90° in order to release and keep locks (3) in up position.
- i) Move the seat in the rails to line up pads (4) with rail (5) apertures.
- j) Remove the seat.

● NOTE ●

Ensure proper storage of strap (9) with L.H. rear seat to avoid loosing part.



D - Removal of intermediate seats - see figures 8.9.2 and 8.9.3

- 1) To remove intermediate seats, perform the following operations
  - a) Install protective covers.
  - b) Pull backrest bottom upholstery (25) to remove it.

**▲ CAUTION ▲**

Make sure to disconnect the seat heating system before the removal of the seat to prevent harness damage.



- c) Disconnect heating system harness and clip the loose connector to the holder located on the seat structure.
- d) Clear the carpet from under the seat to facilitate moving in rails.
- e) Open the floor hatch and clip the second loose connector to the holder located under floor panel. Close the floor hatch.
- f) Pull up locking handle (21) located under the pan, on the seat rear side, to unlock it.
- g) Move the seat in the rails to line up pads (23) with rail (24) apertures.
- h) Remove the seat.
- i) Install backrest bottom upholstery (25).

**▲ CAUTION ▲**

In order to prevent deflectors damage, it is necessary to remove them.



- 2) Remove deflector (34) maintained with Velcro-type strap.
- 3) 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 - Cabin comfort - see figure 8.9.3

- 1) Blank off the hot air outlet, located forward the large door, with blanking device assy (33) stored in storage bag - see figure 8.9.3 detail A.
- 2) Remove blanking plugs (32) located forward the large door and store them into storage bag - see figure 8.9.3 detail B.

- 3) Remove blanking plugs (31) located in line with R.H. front side window - see figure 8.9.3 detail C, and install them on holes located in line with card table - see figure 8.9.3 detail D.

● NOTE ●

Should long term changes be made to cabin configuration (4 / 6 seats), cabin upholstery blanking device and plug arrangements will need to be reconfigured in order to optimize the temperature conditioning system.

Subject changes should preferably be performed at a recognized service center.

●

G - Installation of intermediate seats - see figures 8.9.2, 8.9.3 and 8.9.4

- 1) Install deflector (34), ensuring that both red marks (36) are aligned with the deflector holes (35) - see figure 8.9.4.

● NOTE ●

Position deflectors (34) as indicated on label, according to future position of intermediate seat, in order to optimize cabin cooling.

●

- 2) Install intermediate seats.

● NOTE ●

If seats are installed facing flight direction (frontwards), the L.H. seat must be installed on the right and the R.H. seat on the left in order to have the armrest on aisle side.

●

- a) Pull backrest bottom upholstery (25) to remove it.
- b) Clear the carpet from seat area to facilitate moving in rails.
- c) Position the seat and put lock (22) near the color mark (37) made on rail bottom on aisle side.

● NOTE ●

The color mark (37) in the rail is aligned with red marks (36).

●

- d) Open the floor hatch and remove clip from holder located under floor panel and connect heating system harness (26). Clip connectors on the holder located on the seat structure.
- e) Pull up locking handle (21), insert pads (23) into rail (24) apertures and then, move the seat so that lock (22) is in front of the color mark (37).

- f) Release locking handle (21) to lock the seat.

**▲ WARNING ▲**

**Verify that lock (22) and all pads (23) are engaged and locked into rails, trying to move seat forward and backward.**



- g) Install backrest bottom upholstery (25).

● NOTE ●

Adjust it properly; make sure not to obstruct deflector (34) outlet.



- h) Slide properly the carpet under the seat.  
i) Remove protective covers.

H - 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 section 7.  
3) Make sure the work area is clean and free from debris.  
4) Determine weight and balance - refer to section 6.

**2 - Conversion of 4-seat accommodation into 6-seat accommodation - see figures 8.9.1, 8.9.2, 8.9.3 and 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 (34) maintained with Velcro-type strap.  
5) If necessary, remove the cabin central carpet.

C - Cabin comfort - see figure 8.9.3

- 1) Remove blanking plugs (32) from their storage bag and install them on holes located forward the large door - see figure 8.9.3 detail B.
- 2) Remove blanking device assy (33) from the hot air outlet, located forward the large door, and store it into storage bag - see figure 8.9.3 detail A.
- 3) Remove blanking plugs (31) located in line with card table - see figure 8.9.3 detail D, and install them on holes located in line with R.H. front side window - see figure 8.9.3 detail C.

● NOTE ●

Should long term changes be made to cabin configuration (4 / 6 seats), cabin upholstery blanking device and plug arrangements will need to be reconfigured in order to optimize the temperature conditioning system.

Subject changes should preferably be performed at a recognized service center.

●

D - Installation of cabinet

● NOTE ●

This operation must be carried out by a service center.

●

E - Installation of intermediate seats

- 1) Install intermediate seats – refer to paragraph 1 G.
- 2) If removed, install the baggage compartment partition net.
- 3) If removed, install cabin central carpet.

F - 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 (8) maintain locks (3) in up position.
- 4) Position the seat, fold it forward, refer to detail B, and insert pads (4) into rail (5) apertures.
- 5) Move the seat so that locks (3) are in front of the color mark made on rail bottom.

- 6) Pull up and hold L.H. and R.H. rings (2) and turn knobs (8) by 90° in order to insert locks (3) into rail (5) apertures.
- 7) Make sure the seat is correctly locked on rails (5).
- 8) Tilt seat forward, hold it and slip strap (9) around the locking control hinge pin. Screw quick links (7).
- 9) Open the floor hatch and remove clip from holder located under floor panel and connect heating system harness (26). Clip connectors on the holder located on the seat structure.
- 10) Tilt the seat rearward and lock it using seat tilting handle (1).
- 11) Fold up the backrest and lock it using backrest tilting handle (6).
- 12) Slide properly the carpet under the seat.
- 13) Remove protective covers.

#### G - Reconditioning

- 1) Make sure the work area is clean and free from debris.
- 2) Determine weight and balance - refer to section 6.

### 3 - Additional configurations

#### ▲ WARNING ▲

**Removed seats can only be installed at their original location. Rear seat (L.H. or R.H.) is the only one which can be installed in cabin axis, on both central rails – refer to section 7.**



#### ● NOTE ●

Many combinations of accommodations are authorized with seats (rear and intermediate) by pilot or service centers and cabinet(s) by service centers only. However, the pilot must ensure that he/she gets all necessary authorizations from his/her regulatory authority.



#### ● NOTE ●

To remove or install these elements, use paragraph 1 or 2 – refer to table 1.



• NOTE •

After these operations, determine weight and balance with the new C.G. - refer to section 6.

•

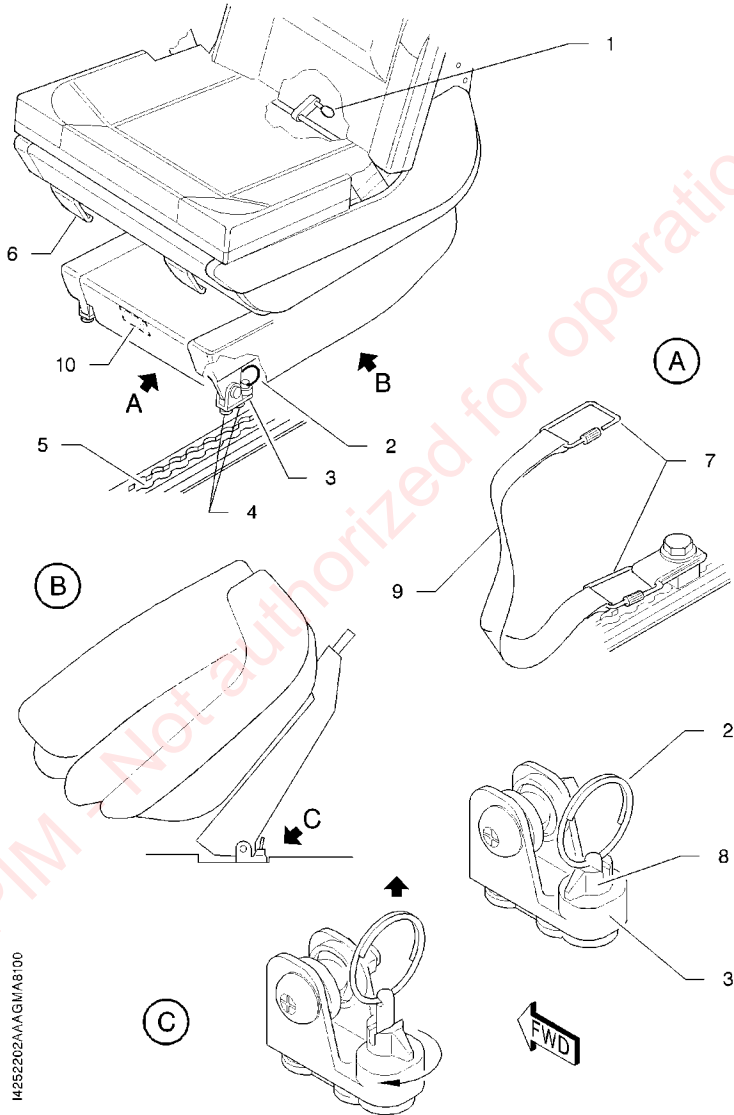
Equipment	Action	Description operation
Rear seat	Removal	Paragraph 1.C.
	Installation	Paragraph 2. F.
Intermediate seat	Removal	Paragraph 1.D.
	Installation	Paragraph 1.G.
Cargo net	Installation	Section 7

Table 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) Seats heaters connector

Figure 8.9.1 (1/2) - Removal / installation of rear seat

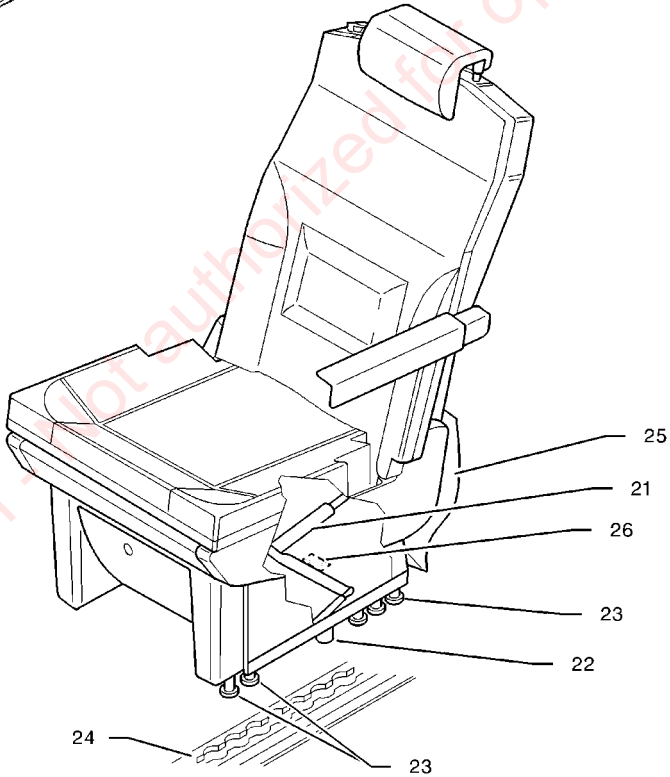
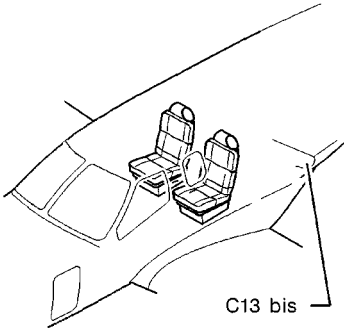




14252202A/AGM/A8100

Figure 8.9.1 (2/2) - Removal / installation of rear seat

- 21) Locking handle
- 22) Lock
- 23) Pad
- 24) Rail
- 25) Backrest bottom upholstery
- 26) Seats heaters connector



14252201AA.SMA8200

Figure 8.9.2 - Removal / installation of intermediate seat

- 31) Blanking plug
- 32) Blanking plug
- 33) Blanking device assy
- 34) Deflector

14252101AAAAA8000

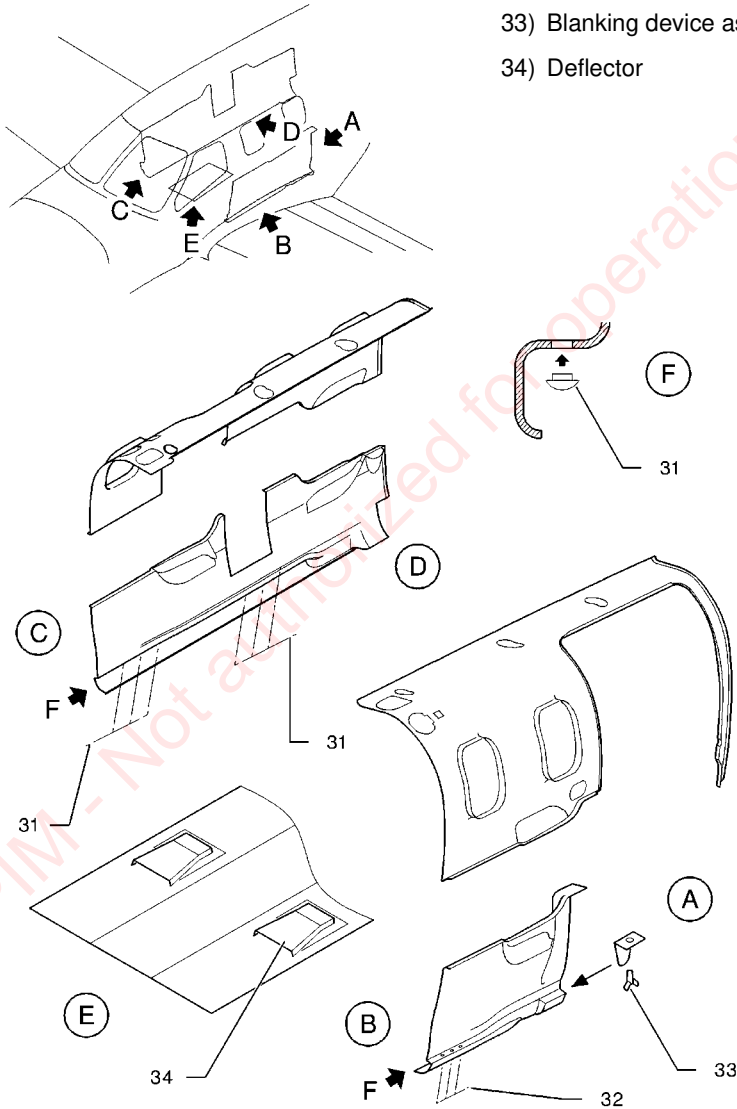
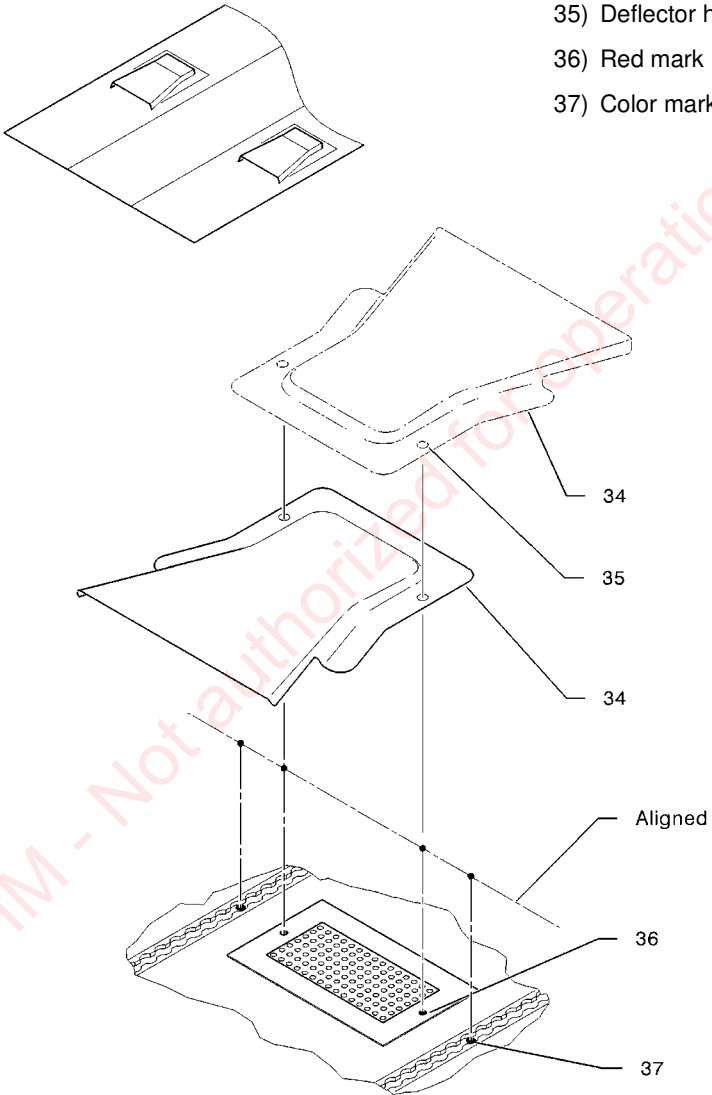


Figure 8.9.3 - Cabin comfort - Installation of blanking plugs and deflector

- 34) Deflector
- 35) Deflector hole
- 36) Red mark
- 37) Color mark



14252101AAAAM/AB200

Figure 8.9.4 - Cabin comfort - Installation of deflector

## 8.10 - Utilization by cold weather (- 0°C to - 25°C) or very cold weather (- 25°C to - 40°C)

• NOTE •

Check pressure values in a hangar heated at about 15°C with control equipment at room temperature.

•

If a landing is foreseen by cold or very cold weather or in case of airplane prolonged operation in such conditions, it is recommended to prepare the airplane as follows :

- 1 - Smear with silicone grease the door and engine cowlings seals, as well as the leading edge deicers.
- 2 - Apply engine oil on the engine cowling latches.
- 3 - Inflate 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 forward landing gear half-fork to reduce shock absorber travel. Refill with hydraulic liquid. Remove the shim and inflate 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 nose tire to 102 psi (7 bars) at a room temperature of 15°C.

• NOTE •

See table 1 hereafter to check pressure values and to inflate tires and shock absorbers.

•

Check pressure values and inflate, if necessary, according to following table 1 during operation in cold weather only :

OAT (°C)		- 40°	- 30°	- 20°	- 10°	+ 15°
P r e s s u r e s	Main landing gear shock absorber	189 (13)	196 (13.5)	203 (14)	218 (15)	247 (17)
	Nose gear shock absorber	102 (7)	109 (7.5)	116 (8)	123 (8.5)	138 (9.5)
	Main landing gear tire	144 (9.96)	144 (9.96)	130 (8.96)	130 (8.96)	130 (8.96)
psi (bars)	Nose gear tire	94 (6.5)	94 (6.5)	102 (7)	102 (7)	102 (7)

Table 1

### List of supplements and validities

Sup. No.	Edit. No.	Description	Airplane type *						
			900 E0	900 E1	910 E0	910 E1	930 E0	930 E1	940 E0
A	5	List of supplements From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
06	3	WX-500 stormscope OPT70-34-056 From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
18	3	Engine fire detection system OPT70-26-002G OPT70-26-002H MOD70-0496-26A From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
45	2	Mexico specifics MOD70-0212-11 From S/N 1000 up to S/N 1269, plus S/N 687	X	X	X	X	X	X	X
45	3	Mexico specifics MOD70-0619-11 Version C From S/N 1270				X			X
47	1	GARMIN GWX70 color weather radar MOD70-0394-34 From S/N 1000 to S/N 1049, plus S/N 687	X						
49	2	GARMIN TAWS System MOD70-0176-00 Version F From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
50	2	GARMIN Synthetic Vision System MOD70-0226-00 From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
* 900 E0 : From S/N 1000 to S/N 1049, plus S/N 687									
900 E1 : From S/N 1050									
910 E0 : From S/N 1170 to 1269									
910 E1 : Airplane equipped with MOD70-0539-00 Version H									
930 E0 : Airplane equipped with MOD70-476-00									
930 E1 : Airplane equipped with MOD70-549-00									
940 E0 : Airplane equipped with MOD70-0649-00 Version A									

Sup. No.	Edit. No.	Description	Airplane type *						
			900 E0	900 E1	910 E0	910 E1	930 E0	930 E1	940 E0
56	3	GARMIN GSR56 weather datalink and satellite phone MOD70-0331-23 From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
57	1	Public transportation for French-registered airplanes MOD70-0352-11 From S/N 1000, plus S/N 687 with MOD70-0176-00	X	X					
58	0	Five-bladed propeller MOD70-0345-61 From S/N 1000 up to S/N 1049, plus S/N 687	X						
59	1	Brazil specifics OPT70-01004 From S/N 1000 up to S/N 1269, plus S/N 687	X	X	X		X	X	
59	3	Brazil specifics MOD70-0619-11 Version B From S/N 1270				X			X
60	1	ADS-B OUT function MOD70-0264-34 MOD70-0542-34 From S/N 1000 up to S/N 1159, plus S/N 687 with MOD70-0176-00	X	X					
62	0	Flight envelope protection MOD70-0423-34 and MOD70-0488-27 From S/N 1000 up to S/N 1169, plus S/N 687 with MOD70-0176-00	X	X					
* 900 E0 : From S/N 1000 to S/N 1049, plus S/N 687 900 E1 : From S/N 1050 910 E0 : From S/N 1170 to 1269 910 E1 : Airplane equipped with MOD70-0539-00 Version H 930 E0 : Airplane equipped with MOD70-476-00 930 E1 : Airplane equipped with MOD70-549-00 940 E0 : Airplane equipped with MOD70-0649-00 Version A									



Pilot's Operating Handbook

Sup. No.	Edit. No.	Description	Airplane type *						
			900 E0	900 E1	910 E0	910 E1	930 E0	930 E1	940 E0
63	1	Lavatory compartment MOD70-0505-25 From S/N 1000, plus S/N 687	X	X	X	X	X	X	X
64	1	Stick Shaker MOD70-0510-27 Version C From S/N 1000 to S/N 1049, plus S/N 687	X						
66	1	GARMIN G1000 NXi retrofit MOD70-0539-00 From S/N 1000 to S/N 1169	X	X					
67	0	Data collection and transmission system (FAST BOX) MOD70-0578-31 Version A From S/N 1000, plus S/N 687	X	X	X		X		
68	0	TBM930 2018 From S/N 1216					X		
69	0	Baro-VNAV approaches MOD70-0636-34 From S/N 1000, plus S/N 687, equipped with G1000 system (MOD70-0176-00) or G1000 NXi system retrofit (MOD70-0539-00 Versions D & E)	X	X	X				
71	0	JCAB Supplement for TBM940 airplane MOD70-0619-11 Version D From S/N 1272							X
72	0	France specifics MOD70-0619-11 Version E From S/N 1270				X			X
* 900 E0 : From S/N 1000 to S/N 1049, plus S/N 687 900 E1 : From S/N 1050 910 E0 : From S/N 1170 to 1269 910 E1 : Airplane equipped with MOD70-0539-00 Version H 930 E0 : Airplane equipped with MOD70-476-00 930 E1 : Airplane equipped with MOD70-549-00 940 E0 : Airplane equipped with MOD70-0649-00 Version A									

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PIM - Not authorized for operation

## SUPPLEMENT

### WX-500 stormscope

#### Table of contents

	Page
1 - General .....	9.6.2
2 - Limitations .....	9.6.2
3 - Emergency procedures .....	9.6.3
4 - Normal procedures .....	9.6.3
5 - Performance .....	9.6.3
6 - Weight and balance .....	9.6.4
7 - Description .....	9.6.4
8 - Handling, Servicing and maintenance .....	9.6.4

## SECTION 1

### General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option WX-500 stormscope.

Whenever this supplement refers to the WX-500 Pilot's Guide, it states the one described in section 2.

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the airplane is equipped with the option WX-500 stormscope.

The WX-500 stormscope systems signal displays are not intended for the purpose of penetrating thunderstorm areas or areas of severe turbulence ; such intentional use is prohibited.

#### • NOTE •

Range selection determines receiver sensitivity and therefore relative range. Displayed range is based on signal strength and is not to be used for accurate determination of thunderstorm location.

•

#### ▲ CAUTION ▲

The stormscope must not be used for thunderstorm penetration.

▲

The WX-500 Pilot's guide, Series II, No. 009-11501-001 and the GARMIN Integrated flight deck pilot's guide, as applicable, at their latest revision shall be readily available to the pilot, whenever the operation of the WX-500 stormscope is predicted.

### **SECTION 3**

#### **Emergency procedures**

Installation and operation of WX-500 stormscope do not change the basic emergency procedures of the airplane described in section 3 Emergency procedures of the basic POH.

### **SECTION 4**

#### **Normal procedures**

Normal operating procedures of the WX-500 stormscope are outlined in the WX-500 Pilot's Guide.

### **SECTION 5**

#### **Performance**

Installation and operation of WX-500 stormscope do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option WX-500 stormscope.

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)
<b>34 - NAVIGATION</b>				
A	34056	Stormscope - shared with the integrated flight deck system	WX-500 4.94 (2.240)	232.28 (5.900)

## SECTION 7

### Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option WX-500 stormscope.

The WX-500 (series II) stormscope, weather mapping system provides a visual screen readout of the electrical discharges associated with thunderstorms. This information with proper interpretation, will allow the pilot to detect severe thunderstorm activity. A series of green dots or of strike points will be displayed on the screen to indicate the electrical discharge areas.

The WX-500 (series II) stormscope, weather mapping system interfaces with the integrated flight deck system.

## SECTION 8

### Handling, servicing and maintenance

Installation and operation of WX-500 stormscope do not change the handling, servicing and maintenance procedures of the airplane described in section 8 Handling, servicing and maintenance of the basic POH.

## SUPPLEMENT

### Engine fire detection system

#### Table of contents

	Page
1 - General .....	9.18.2
2 - Limitations .....	9.18.2
3 - Emergency procedures .....	9.18.3
4 - Normal procedures .....	9.18.5
5 - Performance .....	9.18.5
6 - Weight and balance .....	9.18.6
7 - Description .....	9.18.7
8 - Handling, servicing and maintenance .....	9.18.7

## **SECTION 1**

### **General**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the airplane is equipped with the option Engine fire detection system.

The general hereafter supplement or replace those of the standard airplane described in section 1 General of the basic POH when the airplane is equipped with the option Engine fire detection system.

The fire detection system allows engine fire monitoring and indicating.

## **SECTION 2**

### **Limitations**

Installation and operation of Engine fire detection system do not change the basic limitations of the airplane described in section 2 Limitations of the basic POH.



## SECTION 3

### Emergency procedures

The emergency procedures hereafter supplement or replace those of the standard airplane described in section 3 Emergency procedures of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

#### Engine fire on ground

Symptoms : ITT increasing, **ITT** , **FIRE** , smoke, ...

1 - THROTTLE ..... CUT OFF

>> Airplane with G1000 or G1000 NXi Flight deck (MOD70-0176-00 or MOD70-0539-00)

2 - BLEED switch ..... OFF / RST

>> Airplane with G3000 Flight deck (MOD70-0476-00)

3 - BLEED switch ..... OFF

>> All

4 - A/C switch ..... OFF

5 - Brakes ..... As required

6 - FUEL TANK SLECTOR ..... OFF

7 - Warn ground assistance, if necessary

8 - Crash lever ..... Pull down

► Evacuate as soon as possible ◀

**Engine fire in flight**

Symptoms : **FIRE**

Try to confirm the fire warning by looking for other indications such as ITT increase, **ITT** , smoke from engine cowls or air conditioning system.

▲ **CAUTION** ▲  
No air start attempt after an engine fire.

▲  
▶ Fly the airplane ◀

If the fire warning is not confirmed :

- 1 - Monitor the engine parameters, ITT in particular
- 2 - Look for smoke coming from engine cowls or from air conditioning system

▶ Land as soon as possible ◀

If the fire warning is confirmed :

- 1 - THROTTLE ..... CUT OFF
- 2 - AUX BP switch ..... OFF
- 3 - FUEL TANK SELECTOR ..... OFF
- 4 - Oxygen mask ..... Use

>> Airplane with G1000 or G1000 NXi Flight deck (MOD70-0176-00 or MOD70-0539-00)

- 5 - BLEED switch ..... OFF / RST

>> Airplane with G3000 Flight deck (MOD70-0476-00)

- 6 - BLEED switch ..... OFF

>> All

- 7 - A/C switch ..... OFF

- 8 - If necessary, ..... Emergency descent

- 9 - Perform ..... Forced landing

## SECTION 4

### Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal procedures of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

- Before starting the engine

■ >> *Up to S/N 1105, plus S/N 687, on left side of left instrument panel*

FIRE TEST push-button ..... Press

■ >> *From S/N 1106, on upper panel*

TEST push-button ..... Press

■ >> *All*

**FIRE** lights on and causes the illumination of the MASTER WARNING light.

## SECTION 5

### Performance

Installation and operation of Engine fire detection system do not change the basic performance of the airplane described in section 5 Performance of the basic Pilot's Operating Handbook.

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

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)
<b>26 - Fire protection</b>				
A	26002G or 26002 H	Engine fire detection system L'HOTELLIER (From S/N 1000 to 1105, plus S/N 687)	1.455 (0.660)	96.06 (2.440)
A	0496-26A	Engine fire detection system L'HOTELLIER (From S/N 1106)	1.464 (0.66)	96.06 (2.440)

## SECTION 7

### Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

The engine fire detection system enables the monitoring and indication of a fire in the engine area.

The system includes :

- 7 detectors
- the test push-button
- the integrated flight deck system.

#### Detectors

The 7 detectors are secured on supports positioned in the most sensitive engine areas. They consist of thermal switches detecting a temperature greater than 200°C.

#### Push-button

The push-button enables the pilot to test the detection system by opening the grounding circuit. It is connected in series with the 7 detectors.

>> *Up to S/N 1105, plus S/N 687*

The FIRE TEST push-button is located on left side of left instrument panel.

>> *From S/N 1106*

The TEST push-button is located on upper panel.

#### Display

Refer to the GARMIN Integrated Flight Deck Pilot's Guide, as applicable, at its latest revision.

## SECTION 8

### Handling, servicing and maintenance

Installation and operation of Engine fire detection system do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, Servicing and Maintenance of the basic Pilot's Operating Handbook.

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PIM - Not authorized for operation

## SUPPLEMENT

### Mexico specifics

#### Table of contents

	Page
1 - General .....	9.45.2
2 - Limitations .....	9.45.2
Internal placards .....	9.45.2
External placards .....	9.45.10
3 - Emergency procedures .....	9.45.17
4 - Normal procedures .....	9.45.17
5 - Performance .....	9.45.17
6 - Weight and balance .....	9.45.17
7 - Description .....	9.45.18
8 - Handling, servicing and maintenance .....	9.45.18

## SECTION 1

### General

This supplement is intended to inform the pilot about the airplane specifics, among others those required by the relevant Certification Authorities (limitations, description and operations necessary to the operation of the TBM airplane).

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH.

### 2.9 - Placards

#### Internal placards

- 1 - Rear pressurized baggage compartment (in cabin)  
On partition wall

**MÁXIMO 100 kg - (220 lbs)**

ES RESPONSABILIDAD DEL PILOTO  
COMPROBAR QUE TODO EL EQUIPAJE ESTÁ  
ASEGURADO CORRECTAMENTE.

PARA INSTRUCCIONES DE CARGA REFIERASE  
A LOS "DATOS DE PESO Y BALANCE"  
DEL MANUAL DE OPERACIÓN DEL PILOTO.

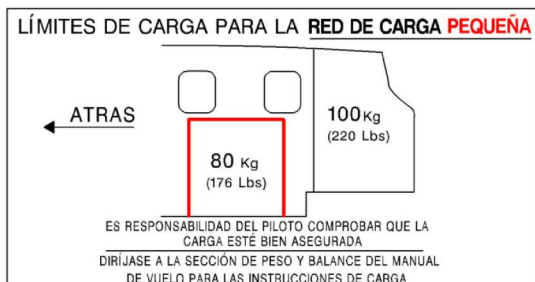
C4113500AACMA8000



Pilot's Operating Handbook

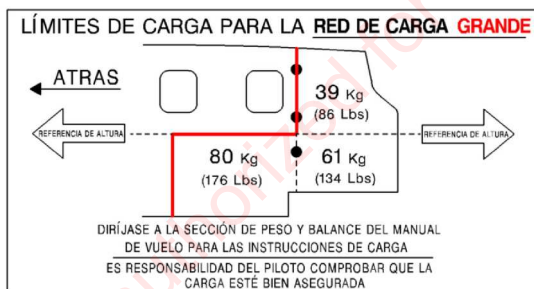
For the small cargo net, on R.H. side lower upholstery panel

I4113500AAABMA8300



For the large cargo net, on R.H. Side upholstery panel, in the rear baggage compartment

I4113500AAABMA8200



2 - Non pressurized FWD baggage compartment

On baggage compartment door frame

**MÁXIMO 50 kg - (110 lbs)**

PARA INSTRUCCIONES DE CARGA REFIERASE A LOS "DATOS DE PESO Y BALANCE" DEL MANUAL DE OPERACIÓN DEL PILOTO.

C4112001AAADMA8000

- 3 - On rear passengers masks containers

I4112003AAAASMA8000

OXYGEN MASKS  
MÁSCARAS DE OXÍGENO

- 4 - On internal face of rear passengers masks containers doors

I4112003AAATMA8000

PULL MASKS FOR  
OXYGEN SUPPLY  
JALE LAS MÁSCARAS  
PARA SUMINISTRO DE  
OXÍGENO

- 5 - On rear passenger's table casing

I4112003AAAUWA8000

TABLE MUST BE STOWED DURING TAKE-OFF AND LANDING  
LA MESA DEBE ESTAR GUARDADA DURANTE EL DESPEGUE Y ATERRIZAJE

Pilot's Operating Handbook

6 - Door internal side

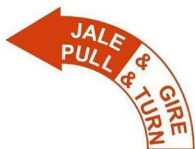
On access door

14112003AAUUA8100



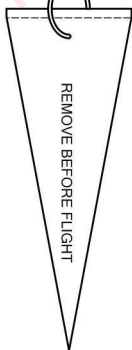
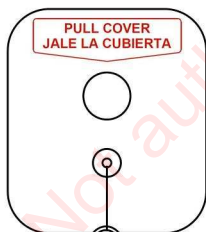
On pilot door, if installed

14112003AAUUA8400



7 - On emergency exit handle

14112003AAUUA8300



8 - Above emergency exit door

C4113300AAAACMA8000



9 - On landing gear emergency control access door

I4112003AAAUMA8200



10 - On cabinet drawer (optional)

I4112003AAA-JMA8000



## Pilot's Operating Handbook

>> *Airplane equipped with coat hanger (Post-MOD70-0557-25B)*

- 11 - On the upper edge of the L.H. Passenger access door panel

I4113200AAAPMA18300

**CAPACIDAD : PESO MÁXIMO 4,5kg - 10 lbs**

>> *Airplane equipped with lavatory compartment (Post-MOD70-0505-25)*

- 12 - On fixed panel, cabin side

I4113200AAQMA8000

**EL DIVISOR DEBE ESTAR ALMACENADO DURANTE EL DESPEGUE Y EL ATERRIZAJE**

- 13 - On fixed panel, toilet side

**EL INODORO NO DEBE  
ESTAR OCUPADO DURANTE EL  
DEPEGUE Y EL ATERRIZAJE  
  
CIERRE Y ASEGURE LA TAPA  
DEL INODORO CUANDO NO ESTÉ EN USO  
  
NO CUELQUE O GUARDE OBJETOS  
EN EL BAÑO O DIVISOR**

**EL DIVISOR DEBE ESTAR ALMACENADO  
DURANTE EL DESPEGUE Y EL ATERRIZAJE**

**USE LOS AURICULARES CUANDO EL  
DIVISOR ESTÉ DESPLEGADO**

I4113200AAQMA8100

- 14 - On access door, cabin side and toilet side

I4113200AAA KMA18300



- 15 - Behind access door, cabin side and toilet side

I4113200AAA RMA8000



Pilot's Operating Handbook

16 - Front face of lavatory compartment, near opening / closing switches

I4113200AAARMA8100



I4113200AAARMA8200



17 - On the magazine rack

I4113200AAARMA8300

1,5 KG (3.3 LBS)

>> All

### External placards

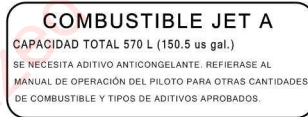
18 - Under engine cowling and under each wing

I4112003AAAHA18300

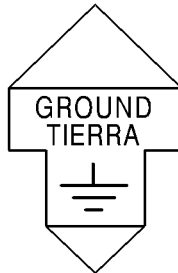


19 - Near fuel tank caps

I4112004AAAFMA8000



I4112003AAAHA8201





## Pilot's Operating Handbook

- 20 - Above brakes hydraulic fluid reservoir against firewall

I4112003AAAHHMA1B101

FRENOS  
MIL - H - 5606  
AIR 3520  
FLUIDO HIDRÁULICO

- 21 - On landing gear hydraulic fluid reservoir

I4112003AAAHHMA1B001

GEARS  
TRENES  
MIL - H - 5606  
AIR 3520  
HYDRAULIC FLUID  
FLUIDO HIDRÁULICO

- 22 - On fuse box in engine cowling

I4113200AAARMA8400

CAJA DE FUSIBLES Y FOCOS

23 - On internal face of L.H. engine cowling

I4112003AAAEMAB300



### OILS - ACEITES

- AEROSHELL 560
- EXXON 2380 OR ESSO 2380 OR BPTO 2380
- MOBIL JET OIL II
- MOBIL JET OIL 254
- AEROSHELL TURBINE OIL 500
- ROYCO TURBINE OIL 500
- CASTROL 5000
- TURBONYCOIL 525-2A

I4112003AAAHHMA8101

24 - On front lower portion of firewall L.H. side

I4112003AAAHHMA8401



## Pilot's Operating Handbook

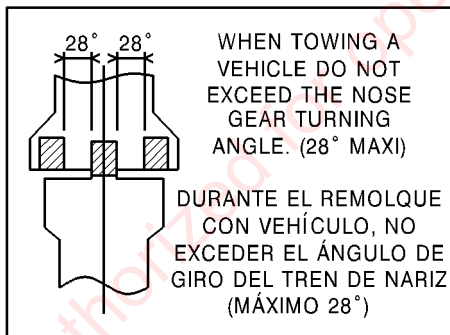
25 - On engine cowling, in front of compartment door

I4112003AAA GMA18500

**ALIMENTACIÓN EXTERNA:  
28 VOLTS C.D. NOMINAL.  
CAPACIDAD MÍNIMA DE ARRANQUE:  
800 AMPS  
NO EXCEDER 1000 AMPS**

26 - On nose gear door

I4112003AAA EMA18101



27 - On nose gear leg

I4112003AAA IMA8200

**TREN DE ATERRIAJE  
DE NARIZ**

**PRESIÓN DE LLANTA: 6,5 bar  
94 psi**

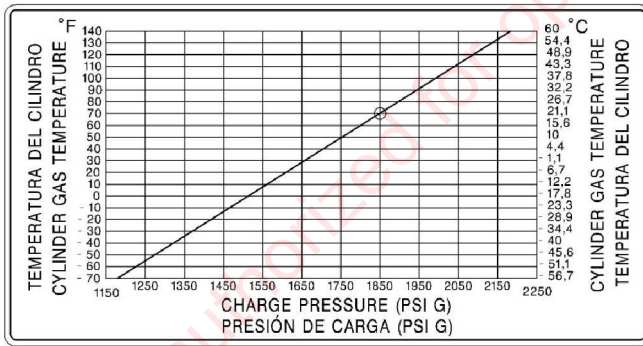
28 - On main gear leg

I4112003AAA IMA 8300

**TREN DE ATERRIZAJE  
PRINCIPAL**  
**PRESIÓN DE LLANTA: 8,96 bar  
130 psi**

29 - On internal face of the oxygen cylinder service door

I4112003AAA FMA 18301



30 - On the oxygen service door

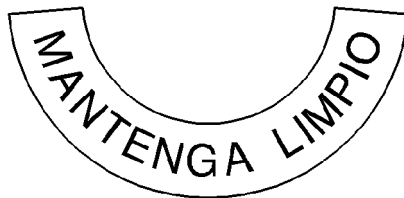
I4112003AAA IMA 18101

**PUNTO DE SERVICIO PARA  
OXÍGENO. NO USAR LUBRICANTES**

Pilot's Operating Handbook

31 - Near air data system port

I4112003AAA HMA8001



32 - On external side of emergency locator transmitter inspection door

I4112003AAA HMA1B400



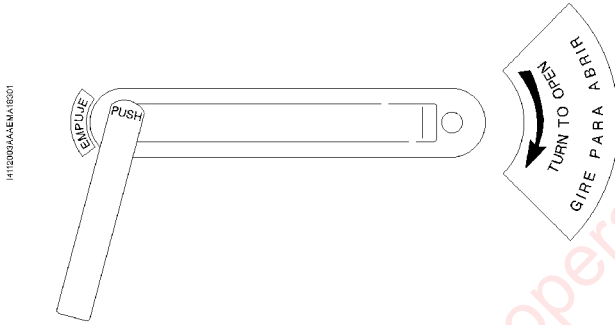
33 - On emergency exit external side

I4112003AAAFMA8500

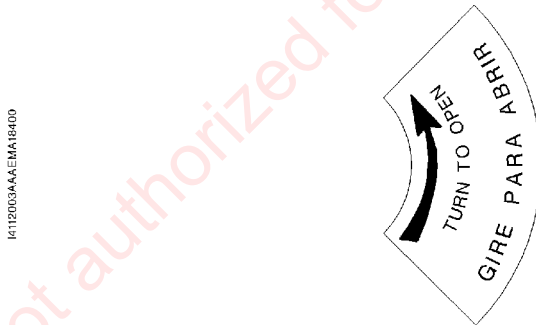


34 - Door external side

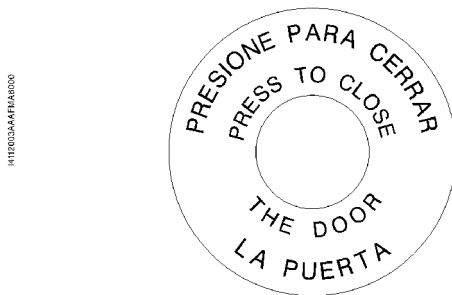
On pilot door



On access door



On outer fuselage skin aft of access door and in the cabin forward of access door



**SECTION 3**  
**Emergency procedures**

No specifics

**SECTION 4**  
**Normal procedures**

No specifics

**SECTION 5**  
**Performance**

No specifics

**SECTION 6**  
**Weight and balance**

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH.

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)
		<b>01 - Specific optional equipment</b>		
S	0619-11C	Mexico certification markings	/	/

## **SECTION 7**

### **Description**

No specifics

## **SECTION 8**

### **Handling, servicing and maintenance**

No specifics

PIM - Not authorized for operation



**SUPPLEMENT**  
**GARMIN TAWS system**  
**Table of contents**

	Page
1 - General .....	9.49.2
2 - Limitations .....	9.49.2
3 - Emergency procedures .....	9.49.3
4 - Normal procedures .....	9.49.4
5 - Performance .....	9.49.6
6 - Weight and balance .....	9.49.6
7 - Description .....	9.49.7
8 - Handling, servicing and maintenance .....	9.49.14

## SECTION 1

### General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the airplane is equipped with the option GARMIN TAWS system.

The TAWS function enables to detect if the airplane path is in compliance with the overflown terrain relief.

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the airplane is equipped with the option GARMIN TAWS system.

The TAWS function provides terrain proximity alerting and detection to the pilot. It must not be used for airplane vertical and horizontal navigation.

AC 2318 recommendation : in order to avoid unwillingly warnings, TAWS function must be inhibited for any landing on a terrain which is not mentioned in the data base.

The use of the terrain awareness warning and terrain display functions is prohibited during QFE (atmospheric pressure at airport elevation) operations.

■ >> *Airplane equipped with GARMIN flight deck as standard*

The GARMIN Integrated Flight Deck Pilot's Guide mentioned in section 2 Limitations of the basic POH, as applicable, or any further edition applicable to the latter, shall be readily available to the pilot, whenever the operation of TAWS system is predicted.

■ >> *Airplane retrofitted with GARMIN G1000 NXi flight deck (MOD70-0539-00)*

The GARMIN G1000 NXi Integrated Flight Deck Pilot's Guide for the TBM850/900 P/N 190-02348-00 or any further edition applicable to the latter, shall be readily available to the pilot, whenever the operation of TAWS system is predicted.

**SECTION 3****Emergency procedures**

The emergency procedures hereafter supplement or replace those of the standard airplane described in section 3 Emergency procedures of the basic POH when the airplane is equipped with the option GARMIN TAWS system.

**TAWS FAIL annunciation**

The TAWS function is not operational.

## SECTION 4

### Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal Procedures of the basic POH when the TBM airplane is equipped with the option GARMIN TAWS system.

#### Before takeoff

- "TAWS System Test OK" voice message ..... Heard  
*End of procedure.*

#### 4.1 - Warnings of the TAWS function

##### "PULL UP" voice alert

**PULL UP** PFD/MFD alert annunciation and **PULL UP** MFD pop-up alert light ON.

- 1 - Level the wings.
- 2 - TRQ ..... Maximum
- 3 - Choose the optimum rate of climb adapted to airplane configuration and speed, until the warning disappears.

*End of procedure.*

##### "Terrain Terrain, Pull up Pull up", "Obstacle Obstacle, Pull up Pull up", voice alerts

**PULL UP** PFD/MFD alert annunciation and **TERRAIN/OBSTACLE - PULL UP** MFD pop-up alert light ON.

- 1 - Adjust airplane path in order to make the warning disappear.

*End of procedure.*

## 4.2 - Cautions of the TAWS function

"Caution terrain", "Caution obstacle",  
"Too low terrain" voice alerts

**TERRAIN** PFD/MFD alert annunciation and **CAUTION TERRAIN/OBSTACLE**  
or **TOO LOW TERRAIN** MFD pop-up alerts light ON.

- 1 - Adjust airplane path in order to make the warning disappear.

*End of procedure.*

"Don't sink" voice alert

**TERRAIN** PFD/MFD alert annunciation and **DON'T SINK** MFD pop-up alert  
light ON.

- 1 - Re-establish a positive rate of climb.

*End of procedure.*

"Sink rate" voice alert

**TERRAIN** PFD/MFD alert annunciation and **SINK RATE** MFD pop-up alert light  
ON.

- 1 - Reduce rate of descent.

*End of procedure.*

## SECTION 5 Performance

Installation and operation of GARMIN TAWS system do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

## SECTION 6 Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option GARMIN TAWS system.

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)
A	0176-00 Version F	<b>34 - Navigation</b>  TAWS system  GARMIN	/	/

## SECTION 7

### Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the TBM airplane is equipped with the option GARMIN TAWS system.

>> *Airplane with G3000 Flight deck (MOD70-0476-00)*

#### **TAWS-B terrain and obstacle alerts**

- Alerts include visual annunciations and voice alerts.
- Alerts are accompanied by visual annunciation on PFD's and pop-up alerts on either Touchscreens Controllers
- Pilot acknowledges the Alert on the Touchscreen Controller

#### **Voice alerts inhibiting**

- TAWS Alerts can be inhibited by the pilot selecting Inhibit TAWS on Touchscreens Controllers
- Discretion should be used when inhibiting alerts and the system should be enabled when appropriate.

>> *All*

The TAWS function has 7 modes.

#### **1. Forward Looking Terrain Avoidance alert**

The Forward Looking Terrain Avoidance (FLTA) alert is used by TAWS and is composed of :

- **Reduced Required Terrain Clearance and Reduced Required Obstacle Clearance**

Reduced Required Terrain Clearance (RTC) and Reduced Required Obstacle Clearance (ROC) alerts are issued when the airplane flight path is above terrain, yet is projected to come within the minimum clearance values in table 9.49.1. When an RTC or ROC alert is issued, a potential impact point is displayed on the TAWS Page.

- **Imminent Terrain Impact and Imminent Obstacle Impact**

Imminent Terrain Impact (ITI) and Imminent Obstacle Impact (IOI) alerts are issued when the airplane is below the elevation of a terrain or obstacle cell in the airplane's projected path. ITI and IOI alerts are accompanied by a potential impact point displayed on the TAWS Page. The alert is annunciated when the projected vertical flight path is calculated to come within minimum clearance altitudes in table 9.49.1.

Phase of flight	Minimum Clearance Altitude Level Flight (ft)	Minimum Clearance Altitude Descending (ft)
Enroute	700	500
Terminal	350	300
Approach	150	100
Departure	100	100

Table 9.49.1 - Minimum Terrain and Obstacle Clearance values for FLTA alerts

During the final approach phase of flight, FLTA alerts are automatically inhibited when the airplane is below 200 feet AGL while within 0.5 Nm of the approach runway or below 125 feet AGL while within 1.0 Nm of the runway threshold.



Pilot's Operating Handbook

The aural/displayed messages associated with the FLTA function are described in the table 9.49.2.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Reduced Required Terrain Clearance Warning (RTC) (Red)	<b>PULL UP</b>	<b>TERRAIN - PULL UP</b>	"Terrain, Terrain ; Pull up, Pull up"
Imminent Terrain Impact Warning (ITI) (Red)	<b>PULL UP</b>	<b>TERRAIN AHEAD - PULL UP</b>	"Terrain Ahead, Pull up ; Terrain Ahead, Pull up"
Reduced Required Obstacle Clearance Warning (ROC) (Red)	<b>PULL UP</b>	<b>OBSTACLE - PULL UP</b>	"Obstacle, Obstacle ; Pull up, Pull up"
Imminent Obstacle Impact Warning (IOI) (Red)	<b>PULL UP</b>	<b>OBSTACLE AHEAD - PULL UP</b>	"Obstacle Ahead, Pull up ; Obstacle Ahead, Pull up"
Reduced Required Terrain Clearance Caution (RTC) (Amber)	<b>TERRAIN</b>	<b>CAUTION - TERRAIN</b>	"Caution, Terrain ; Caution, Terrain"
Imminent Terrain Impact Caution (ITI) (Amber)	<b>TERRAIN</b>	<b>TERRAIN AHEAD</b>	"Terrain Ahead ; Terrain Ahead"
Reduced Required Obstacle Clearance Caution (ROC) (Amber)	<b>TERRAIN</b>	<b>CAUTION - OBSTACLE</b>	"Caution, Obstacle ; Caution, Obstacle"
Imminent Obstacle Impact Caution (IOI) (Amber)	<b>TERRAIN</b>	<b>OBSTACLE AHEAD</b>	"Obstacle Ahead ; Obstacle Ahead"

Table 9.49.2 - FLTA alerts

## 2. Premature descent alerting

A Premature Descent Alert (PDA) is issued when the system detects that the airplane is significantly below the normal approach path to a runway (Figure 9.49.1).

PDA alerting begins when the airplane is within 15 Nm of the destination airport. PDA alerting ends when the airplane is either :

- 0.5 Nm from the runway threshold
- or
- at an altitude of 125 feet AGL while within 1.0 Nm of the threshold.

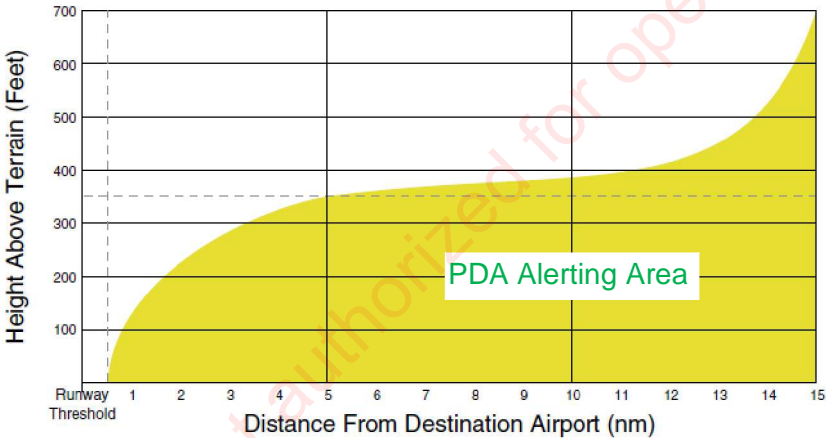


Figure 9.49.1 - PDA alerting threshold

The aural/displayed messages associated with the PDA function are described in the table 9.49.3.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Premature Descent Alert Caution (PDA) (Amber)	<b>TERRAIN</b>	<b>TOO LOW - TERRAIN</b>	"Too low, Terrain"

Table 9.49.3 - PDA alerts

### 3. Excessive descent rate alert

The purpose of the Excessive Descent Rate (EDR) alert is to provide suitable notification when the airplane is determined to be closing (descending) upon terrain at an excessive speed. Figure 9.49.2 shows the parameters for the alert as defined by TSO-C151b.

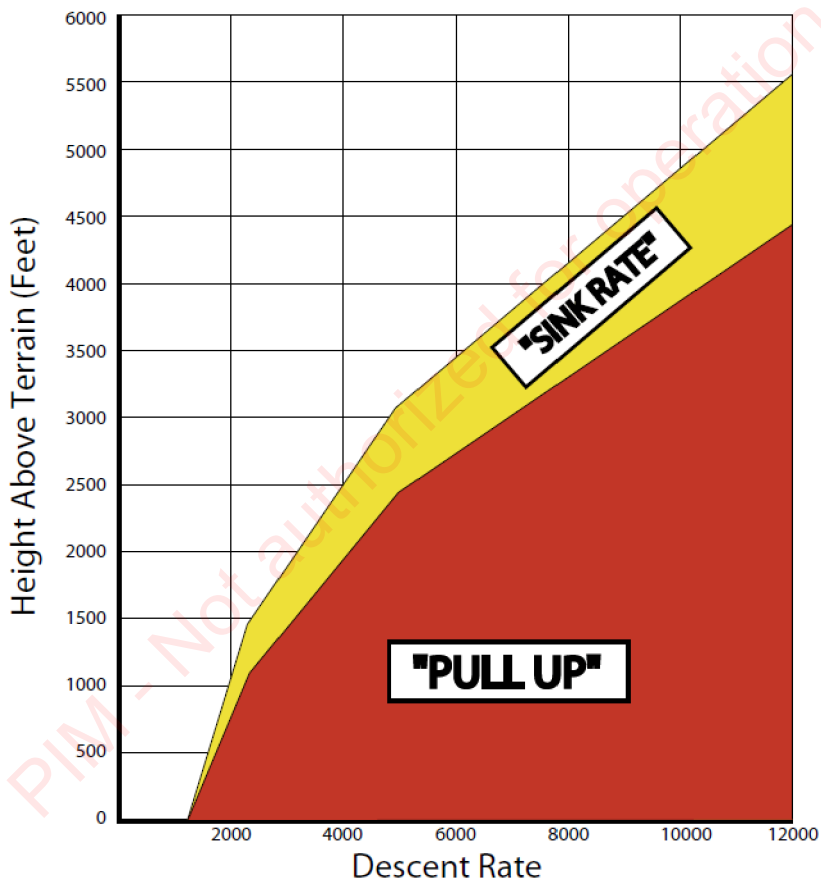


Figure 9.49.2 - Excessive Descent Rate Alert Criteria

The aural/displayed messages associated with the EDR function are described in the table 9.49.4.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Excessive Descent Rate Warning (EDR) (Red)	<b>PULL UP</b>	<b>PULL UP</b>	"Pull up"
Excessive Descent Rate Caution (EDR) (Amber)	<b>TERRAIN</b>	<b>SINK RATE</b>	"Sink rate"

Table 9.49.4 - EDR alerts

#### 4. Negative climb rate after takeoff alert (NCR)

The purpose of the Negative Climb Rate (NCR) After Takeoff alert (also referred to as Altitude Loss After Takeoff) is to provide suitable alerts to the pilot when the system determines that the airplane is losing altitude (closing upon terrain) after takeoff. The aural message "Don't sink" is given for NCR alerts, accompanied by an annunciation and a pop-up terrain alert on the PFD's and Touchscreen Controllers. NCR alerting is only active when departing from an airport and when the following conditions are met :

- The height above the terrain is less than 700 feet.
- The distance from the departure airport is 5 Nm or less.
- The heading change from the heading at the time of departure is less than 110 degrees.

Pilot's Operating Handbook

Figure 9.49.3 shows two figures which illustrate the NCR alerting parameters as defined by TSO-C151b.

The NCR alert is issued when the altitude loss and height are within the range in the first figure, or when the sink rate (negative vertical speed) and height are within the range in the second figure.

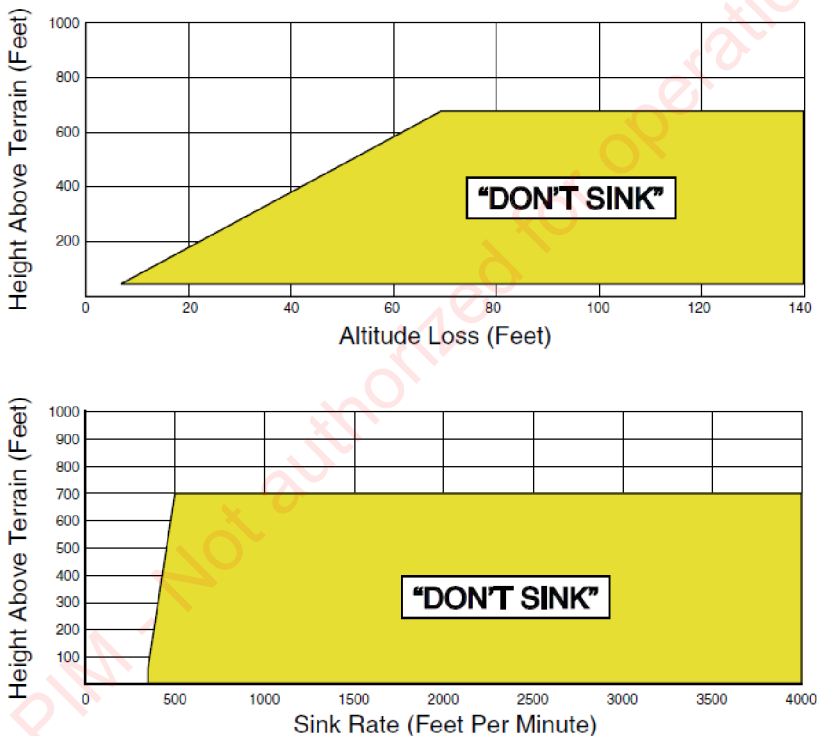


Figure 9.49.3 - Negative Climb Rate (NCR) Alert Criteria

The aural/displayed messages associated with the NCR function are described in the table 9.49.5.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Negative Climb Rate Caution (NCR) (Amber)	<b>TERRAIN</b>	<b>DONT' SINK</b>	"Don't sink"

Table 9.49.5 - NCR alerts

**5. "FIVE-HUNDRED" aural alert, altitude voice callout (VCO)**

The purpose of the aural alert message "Five-Hundred" is to provide an advisory alert to the pilot that the airplane is 500 feet above terrain. When the airplane descends within 500 feet of terrain, the aural message "Five-Hundred" is generated. There are no display annunciations or pop-up alerts that accompany the aural message.

**6. TAWS not available alert**

TAWS requires a 3-D GPS navigation solution along with specific vertical accuracy minimums. Should the navigation solution become degraded or if the airplane is out of the database coverage area, the annunciation TAWS N/A is generated in the annunciation window and on the TAWS Page. The aural message "TAWS Not Available" is generated. When the GPS signal is re-established and the airplane is within the database coverage area, the aural message "TAWS Available" is generated.

**7. TAWS inhibit**

TAWS also has an inhibit mode that deactivates the PDA/FLTA aural and visual alerts. Pilots should use discretion when inhibiting TAWS and always remember to enable the system when appropriate. Only the PDA and FLTA alerts are disabled in the inhibit mode.

**SECTION 8**

**Handling, servicing and maintenance**

Installation and operation of GARMIN TAWS system do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, Servicing and Maintenance of the basic POH.

**SUPPLEMENT**  
**GARMIN Synthetic Vision System**  
**Table of contents**

	Page
1 - General .....	9.50.2
2 - Limitations .....	9.50.2
3 - Emergency procedures .....	9.50.3
4 - Normal procedures .....	9.50.4
5 - Performance .....	9.50.5
6 - Weight and balance .....	9.50.5
7 - Description .....	9.50.5
8 - Handling, servicing and maintenance .....	9.50.6

## SECTION 1

### General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option GARMIN Synthetic Vision System (SVS).

The SVS does not replace and is not intended to be used independently of the TAS and/or TAWS system(s).

The SVS does not replace and is not intended to be used independently of the horizontal and vertical primary flight instruments.

The SVS does not replace and is not intended to be used independently of the Course Deviation Indicator and the Vertical Deviation Indicator.

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the TBM airplane is equipped with the option GARMIN Synthetic Vision System.

The following document, or any further edition applicable to the latter, shall be readily available to the pilot, whenever operation of the SVS is predicted :

>> *Airplane equipped with G1000 Flight deck (MOD70-0176-00)*

- GARMIN Integrated Flight Deck Pilot's Guide, No. 190-00709-05 or its latest revision.

>> *Airplane equipped with G1000 Nxi Flight deck (MOD70-0539-00)*

- GARMIN Integrated Flight Deck Pilot's Guide, No. 190-02218-XX at its latest revision.

>> *Airplane retrofitted with GARMIN G1000 NXi Flight deck (MOD70-0539-00)*

- GARMIN G1000 NXi Integrated Flight Deck Cockpit Pilot's Guide for the TBM850/900 P/N 190-02348-00 or any later revision as applicable.

>> *Airplane equipped with G3000 Flight deck (MOD70-0476-00)*

- GARMIN Integrated Flight Deck Pilot's Guide, No. 190-02046-XX at its latest revision.

The use of the Synthetic Vision System display elements alone for airplane control without reference to the GARMIN system primary flight instruments is prohibited.



The use of the Synthetic Vision System alone for vertical and/or horizontal navigation, or obstacle or terrain avoidance is prohibited.

Pathway boxes must be selected OFF when flying an instrument approach. Turn Pathways OFF when ACTIVATE VECTORS-TO-FINAL, ACTIVATE APPROACH is selected, or the airplane is established on any segment of the approach.

The use of the Synthetic Vision System traffic display alone to avoid other airplane is prohibited.

The Terrain Database has an area of coverage from North 75° latitude to South 60° latitude in all longitudes.

### SECTION 3

#### Emergency procedures

The emergency procedures hereafter supplement or replace those of the standard airplane described in Section 3 Emergency Procedures of the basic Pilot's Operating Handbook when the TBM airplane is equipped with the option GARMIN Synthetic Vision System.

**Inconsistent display between SVS and GARMIN system primary flight instruments**

>> *Airplane with G1000 Flight deck (MOD70-0176-00)*

From PFD display unit

- PFD softkey ..... Press
- SYN VIS softkey ..... Press
- SYN TERR softkey ..... Press to disable
- SVS is removed from the PFD ..... Verify

>> *Airplane with G1000 Nxi Flight deck (MOD70-0539-00)*

From PFD display unit

- PFD OPT softkey ..... Press
- SVT softkey ..... Press
- Terrain softkey ..... Press to disable
- SVS is removed from the PFD ..... Verify

■ >> *Airplane with G3000 Flight deck (MOD70-0476-00)*

From PFD display unit

- PFD Settings softkey ..... Press
- Attitude Overlays softkey ..... Press
- Synthetic Terrain softkey ..... Press to disable
- SVS is removed from the PFD ..... Verify

>> *All*

Use GARMIN system primary displays for navigation and airplane control.

## SECTION 4

### Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal procedures of the basic POH when the TBM airplane is equipped with the option GARMIN Synthetic Vision System.

#### ▲ CAUTION ▲

SVS information is not a substitute for standard course and altitude deviation information provided by the CDI, VSI, VDI and the primary flight instruments, as well as for the Traffic Advisory System (TAS) or the Terrain Awareness Warning System (TAWS).



### SVS activation

Refer to GARMIN Integrated Flight Deck Pilot's Guide, as applicable, listed in section 2 Limitations of this supplement for further information.

## SECTION 5

### Performance

Installation and operation of GARMIN Synthetic Vision System do not change the basic performance of the airplane described in Section 5 Performance of the basic POH.

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in Section 6 Weight and balance of the basic POH when the airplane is equipped with the option GARMIN Synthetic Vision System.

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)
A	0226-00	<b>34 - Navigation</b> Synthetic Vision System	/	/

## SECTION 7

### Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option GARMIN Synthetic Vision System.

SVS provides additional features on the primary flight display (PFD) - refer to GARMIN Integrated Flight Deck Pilot's Guide, as applicable, listed in section 2 Limitations of this supplement for further information.

## **SECTION 8**

### **Handling, servicing and maintenance**

Installation and operation of GARMIN Synthetic Vision System do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, servicing and maintenance of the basic POH.

PIM - Not authorized for operation

**SUPPLEMENT****GARMIN GSR 56 weather datalink and satellite phone****Table of contents**

	Page
1 - General .....	9.56.2
2 - Limitations .....	9.56.2
3 - Emergency procedures .....	9.56.4
4 - Normal procedures .....	9.56.4
5 - Performance .....	9.56.7
6 - Weight and balance .....	9.56.7
7 - Description .....	9.56.8
8 - Handling, servicing and maintenance .....	9.56.9

## SECTION 1

### General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

Unless otherwise mentioned, whenever a G1000 system is called in this supplement it concerns either a G1000 system or a G1000 NXi system.

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the TBM airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

The GARMIN Integrated Flight Deck Pilot's Guide mentioned in section 2 Limitations of the basic POH (G1000 or G3000 as standard) or of the POH supplement (G1000 NXi retrofit), as applicable, or any further applicable edition, shall be readily available to the pilot, whenever the operation of GARMIN GSR 56 weather datalink and satellite phone is predicted.

#### Satellite phone functions

### ▲ WARNING ▲

#### Use of phone by PIC prohibited during all airplane operations

>> *Airplane with G1000 Flight deck*

- It is forbidden to activate Pilot In Command on-side GMA TEL button as long as the airplane is in the air or moving on the ground.
- Only the Pilot In Command cross side GMA TEL input can be activated at all time of flight for the front passenger and passengers to have the GSR 56 telephone audio functions.

>> *Airplane with G3000 Flight deck*

- It is forbidden to activate TEL button on Pilot Tab (located in NAV COM/Audio & Radios page) on GTC Touchscreen Controllers as long as the airplane is in the air or moving on the ground.

- Only the TEL button, on Copilot and Pass Tabs (located in NAV COM/Audio & Radios page) on GTC Touchscreen Controllers can be activated at all time of flight for the front passenger and passengers to have the GSR 56 telephone audio functions.

>> All

### **Weather datalink functions**

- The GSR 56 weather datalink is only an advisory weather source, it does not relieve the pilot to comply with the applicable operational regulation in terms of flight preparation especially with regard to the use of an approved weather and NOTAM sources during flight planning.

### **International telecommunication regulation**

The GSR 56 is a telecommunication device approved under FCC ID Q639522B and registered by the ITU (International Telecommunication Union) for international use according to the GMPCS-MoU.

The receiver transmitter RF module embedded in the GSR 56 is a 9522 B manufactured by Iridium Satellite LLC.

Terms of use are subject to changes and are available from the ITU website.

## **2.1 - Placards**

Under L.H. front side window, under instruction plate

USE OF PHONE BY PIC PROHIBITED DURING ALL AIRCRAFT OPERATIONS

## **SECTION 3**

### **Emergency procedures**

Installation and operation of GARMIN GSR 56 weather datalink and satellite phone do not change the basic emergency procedures of the airplane described in section 3 Emergency procedures of the basic POH.

## **SECTION 4**

### **Normal procedures**

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal Procedures of the basic POH when the TBM airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

Normal operating procedures of the GARMIN GSR 56 weather datalink and satellite phone system are outlined in the GARMIN Integrated Flight Deck Pilot's Guide.



■ >> *Airplane with G1000 Flight deck***Before starting engine**

On L.H. GMA audio panel

- 1 - TEL button ..... OFF

*End of procedure.***Before starting a phone call in flight**

On L.H. GMA audio panel

- 1 - TEL button ..... OFF

*If rear passengers intend to take part in a phone call :*

- 2 - CABIN button or PASS ICS button ..... OFF
- 
- 2 types of wording may exist for the same button

*If front passenger intends to take part in a phone call :*

- 3 - INTRCOM button or CREW ICS button ..... OFF
- 
- 2 types of wording may exist for the same button

On R.H. GMA audio panel

- 4 - TEL button ..... ON

*If rear passengers intend to take part in a phone call :*

- 5 - CABIN button or PASS ICS button ..... ON
- 
- 2 types of wording may exist for the same button

*End of procedure.*

>> *Airplane with G3000 Flight deck*

**Before starting engine**

- In one of the GTC's NAV COM / Audio & Radios / pilot Tab
  - 1 - TEL button ..... OFF
- End of procedure.*

**Before starting a phone call in flight**

- In one of the GTC's NAV COM / Audio & Radios / pilot Tab
  - 1 - TEL button ..... OFF
- If passengers intend to take part into a phone call :*
- In one of the GTC's NAV COM / Intercom Page
  - 2 - Pilot/Passenger Link Arrow ..... OFF
- If front passenger intends to take part into a phone call :*
- In one of the GTC's NAV COM / Intercom Page
  - 3 - Pilot/Copilot Link Arrow ..... OFF
- In one of the GTC's NAV COM / Audio & Radios / copilot Tab
- 4 - TEL button ..... ON
- if necessary, switch off Sync to Pilot function*
- If passengers intend to take part into a phone call :*
- In one of the GTC's NAV COM / Audio & Radios / Pass Tab
  - 5 - TEL button ..... ON
- if necessary, switch off Sync to Pilot function*
- End of procedure.*

## SECTION 5

### Performance

Installation and operation of GARMIN GSR 56 weather datalink and satellite phone. do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

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)
<b>23 - Communication</b>				
A	0331-23	Weather datalink and satellite phone system GSR 56	GARMIN 3.82 (1.736)	58.03 (1.474)

## SECTION 7

### Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

GARMIN GSR 56 weather datalink and satellite phone system provides airborne low speed datalink and voice communication capability to Integrated Flight Deck system excluding any voice mail function. GSR 56 weather datalink and satellite phone system contains a transceiver that operates on the Iridium Satellite network.

The weather information are displayed on the MFD maps and on the PFD inset map.

#### ■ >> *Airplane with G1000 Flight deck*

The satellite phone interface is embedded in the MFD : Phone communication and SMS can be received and sent through the dedicated pages on the MFD.

The controls for the MFD are located on both the MFD bezel and the MFD control unit.

The telephone audio including the incoming call ringing is controlled by the TEL button on the GMA audio panels and can be played in the pilot, front passenger and passengers headphones.

#### ■ >> *Airplane with G3000 Flight deck*

■ The satellite phone interface is embedded in the Touchscreen Controllers : Phone communication and SMS can be received and sent through the dedicated pages on the Touchscreen Controllers.

■ The telephone audio including the incoming call ringing is controlled by the Touchscreen controllers & GMA audio processor and can be played in the pilot, front passenger and passengers headphones.

#### ■ >> *All*

Although it is possible to leave a message when calling the airplane, as voice mail communication is not supported by the GSR 56 :

- it is not possible to access the GSR 56 voice mail from the airplane
- there is no indication on the Integrated Flight Deck system when a new message has been left on the GSR 56 voice mail.

## SECTION 8

### Handling, servicing and maintenance

Installation and operation of GARMIN GSR 56 weather datalink and satellite phone. do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, Servicing and Maintenance of the basic POH.

PIM - Not authorized for operation

Intentionally left blank

PIM - Not authorized for operation

**SUPPLEMENT**  
**Brazil specifics**  
**Table of contents**

	Page
1 - General .....	9.59.2
2 - Limitations .....	9.59.2
3 - Emergency procedures .....	9.59.12
4 - Normal procedures .....	9.59.12
5 - Performance .....	9.59.12
6 - Weight and balance .....	9.59.13
7 - Description .....	9.59.13
8 - Handling, servicing and maintenance .....	9.59.13

## SECTION 1

### General

This supplement is intended to inform the pilot about the airplane specifics, among others those required by the relevant Certification Authorities (limitations, description and operations necessary to the operation of the TBM airplane).

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH.

### 2.5 - Weight and C.G. limits

#### Weight limits

>> *With 4-seat accommodation*

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

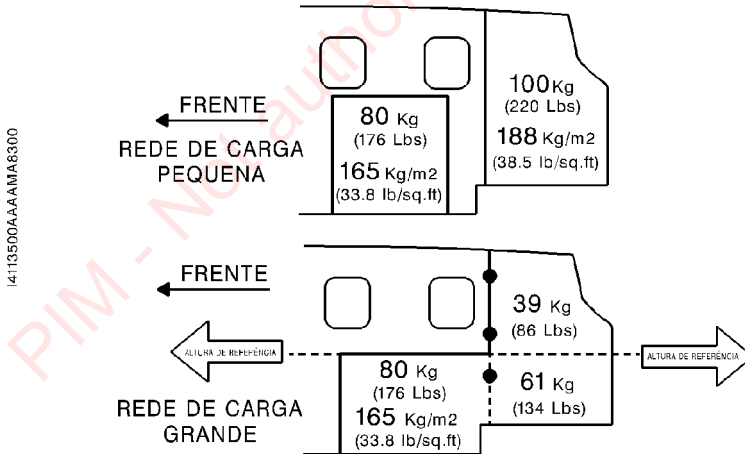


Figure 2.5.1 - Baggage limits



## 2.6 - Operation limits

When operating the VHF-COMM system in Brazilian air space, the selection of 8.33 kHz in the channels spacing can cause the loss of communication with the Air Traffic Control (ATC).

## GNSS (GPS/SBAS) navigation system limitations

In accordance with Brazilian IS 21-013A, use of GNSS/GPS is prohibited under IFR unless other means of navigation, suitable and approved for the intended route, are installed and operational. It must be possible - at any point along the route - to navigate to the destination or alternate, using such means.

The SBAS functionality is not available in Brazil, therefore operations that require such functionality, such as GNSS vertical navigation modes, are prohibited in Brazilian airspace.

## 2.9 - Placards

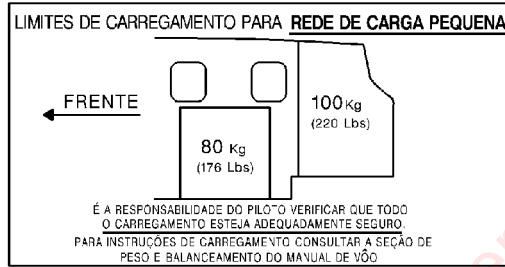
On pressurized baggage compartment partition wall

I4113500AAACMA8000

**100 kg MÁXIMO****É DE RESPONSABILIDADE DO PILOTO  
CHECAR SE TODA BAGAGEM ESTÁ  
ADEQUADAMENTE SEGURA.****PARA INSTRUÇÕES DE CARREGAMENTO  
CONSULTAR A SEÇÃO DE PESO E  
BALANCEAMENTO DO MANUAL DE VÔO.**

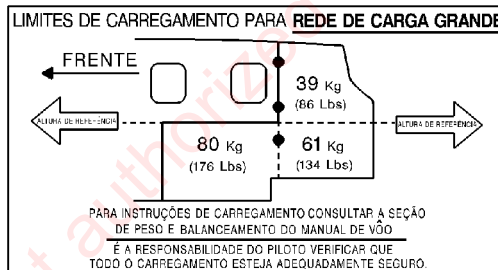
For the small cargo net, on frame C13bis

I4113500AAAIVAB400



For the large cargo net, on R.H. side upholstery panel, in the rear baggage compartment

I4113500AAAAMA18400



On FWD baggage compartment door frame, non pressurized

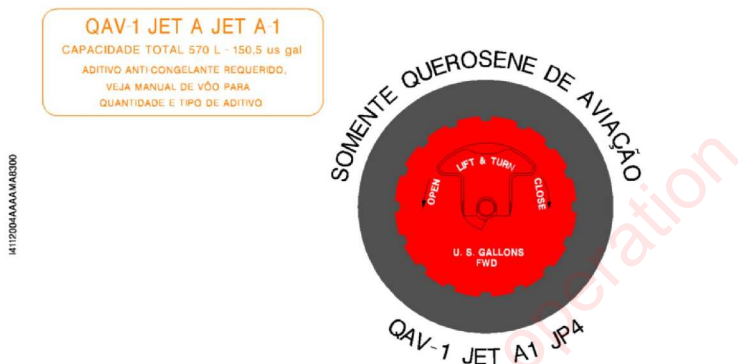
I4113500AAAACMA8100

**50 kg MÁXIMO**

**PARA INSTRUÇÕES DE CARREGAMENTO  
CONSULTAR A SEÇÃO DE PESO E  
BALANCEAMENTO DO MANUAL DE VÔO.**

## Pilot's Operating Handbook

Near fuel tank caps



On internal face of L.H. engine cowling



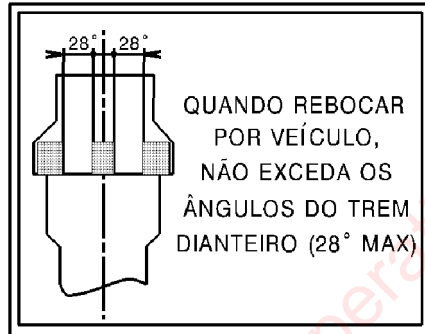
Above passenger's table

I4113500AAACMA8200

**A MESA DEVERÁ ESTAR RECOLHIDA PARA DECOLAGEM E POUSO**

On nose gear door

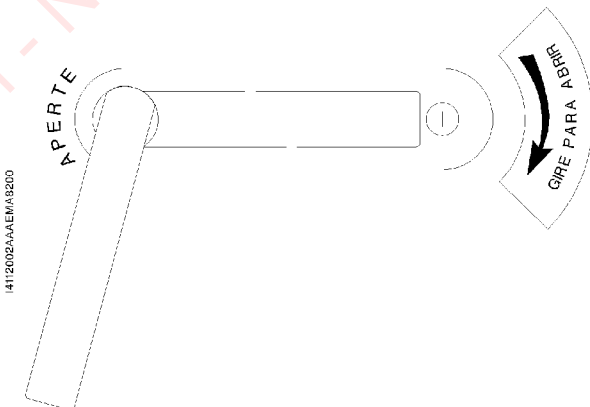
I4112001AAAACMA8100



On engine cowling, in front of compartment door

**- TOMADA EXTERNA  
- 28 VOLTS D.C. NOMINAL  
- 800 AMPS  
CAPACIDADE MÍNIMA PARA PARTIDA  
- NÃO EXCEDA 1000 AMPS**

On pilot door - External side, if installed



I4112002AAAAMEMA8200

Pilot's Operating Handbook

On access door - External side

I4112002AAAE1MA8300



On outer fuselage skin aft of access door

I4112002AAAD1MA8400



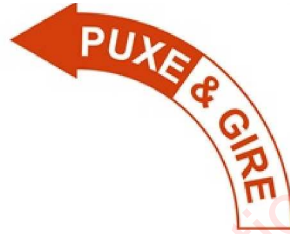
In the cabin forward of access door

I4113500AAAC1MA8300



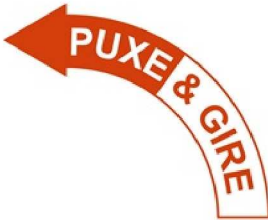
On access door - Internal side

I4113500AAACMA8400



On pilot door - Internal side, if installed

I4113500AAACMA8500

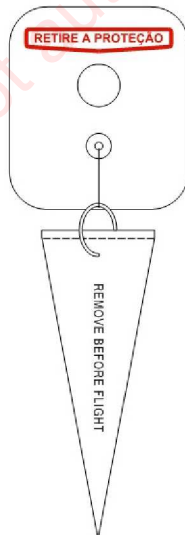


On emergency exit handle

Marking on cover

Marking on handle

I41133000AAAHHMA8100



## Pilot's Operating Handbook

Above emergency exit door

I41133000AAAHMA8000



On rear passengers masks containers

I41134000AAALEMA8000

**MÁSCARAS DE OXIGÊNIO**

On the oxygen service door

I41124000AAABMA8000

**ABASTECIMENTO DE OXIGÊNIO  
NÃO USE LUBRIFICANTES**>> *Airplanes equipped with Lavatory compartment (Post-MOD70-0505-25)*

On fixed panel, cabin side

I41132000AAAPMA8000

**A DIVISÓRIA DEVE ESTAR RECOLHIDA DURANTE A DECOLAGEM E O POUSO**

On fixed panel, toilet side

I4113200AAAPMA8100

**O ASSENTO DO SANITÁRIO NÃO DEVE  
ESTAR OCUPADO DURANTE  
A DECOLAGEM E O POUSO**

**FECHE E TRAVE A TAMPA DO SANITÁRIO  
QUANDO NÃO ESTIVER EM USO**

**NÃO PENDURE OU MANTENHA OBJETOS  
SOBRE O SANITÁRIO OU NA DIVISÓRIA**

**A DIVISÓRIA DEVE ESTAR RECOLHIDA DURANTE  
A DECOLAGEM E O POUSO**

**OS FONES DE OUVIDO DEVEM SER UTILIZADOS  
QUANDO A DIVISÓRIA ESTIVER ESTENDIDA**

On access door, cabin side and toilet side

I4113200AAAPMA8200

**COMPARTIMENTO  
DE EMERGÊNCIA**

**REMOVA A  
TAMPA**



Pilot's Operating Handbook

Behind access door, cabin side

I4113200AAAPMA8400



Behind access door, toilet side

I4113200AAAPMA8300



Front face of lavatory compartment, near opening / closing switches

I41132000AAPMA18000



I4113200AAAAPMA18100



On the magazine rack and on side wall of storage volume

I4113200AAA1MA8300

1,5 kg - 3.3 lbs

>> *Airplanes equipped with Coat hanger (Post-MOD70-0557-25)*

On the L.H. rear cargo compartment panel upper door

I4113200AAPMA18200

**CAPACIDADE DE PESO MÁXIMA 4,5kg - 10 lbs**

### SECTION 3

#### Emergency procedures

No specifics

### SECTION 4

#### Normal procedures

No specifics

### SECTION 5

#### Performance

No specifics

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH.

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)
<b>01 - Specific optional equipment</b>				
S	0619-11B	Brazil certification markings	/	/

## SECTION 7

### Description

No specifics

## SECTION 8

### Handling, servicing and maintenance

No specifics

Intentionally left blank

PIM - Not authorized for operation

**SUPPLEMENT**  
**Lavatory compartment**  
**Table of contents**

	Page
1 - General .....	9.63.2
2 - Limitations .....	9.63.2
3 - Emergency procedures .....	9.63.7
4 - Normal procedures .....	9.63.8
5 - Performance .....	9.63.8
6 - Weight and balance .....	9.63.8
7 - Description .....	9.63.19
8 - Handling, servicing and maintenance .....	9.63.23

## SECTION 1

### General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option lavatory compartment.

## SECTION 2

### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the TBM airplane is equipped with the option lavatory compartment.

- toilet seat must not be occupied during take-off and landing
- divider must be stowed during take-off and landing
- headset shall be worn at all time when seat is occupied

■ >> *From S/N 1000 to S/N 1269*

### 2.9 - Placards

On fixed panel, cabin side

DIVIDER MUST BE STOWED DURING TAKE-OFF AND LANDING

14113200AAAHMA8300

Pilot's Operating Handbook

On fixed panel, toilet side

I4113200AAAHMA18000

TOILET SEAT MUST NOT  
BE OCCUPIED DURING  
TAKE-OFF AND LANDING  
CLOSE AND LOCK TOILET COVER  
WHEN NOT IN USE  
DO NOT HANG OR STORE ITEMS  
ON TOILET OR DIVIDER  
DIVIDER MUST BE STOWED DURING  
TAKE-OFF AND LANDING  
HEADSET MUST BE USED WHEN  
DIVIDER IS DEPLOYED

On access door, cabin side and toilet side

I4113200AAAHMA8000

EMERGENCY  
STOWAGE  
REMOVE  
COVER

Behind access door, cabin side and toilet side

I4113200AAAHMA18100

PUSH TO STOW

Inner face of toilet cover

I4113200AAA1MA18200



Front face of lavatory compartment, near opening/closing switches

I4113200AAA1MA8100



I4113200AAA1MA8200



On the magazine rack

I4113200AAA1MA8000

3.3 LBS (1,5 KG)



&gt;&gt; From S/N 1270

**2.9 - Placards**

On fixed panel, cabin side

I4113200AAANMIA8200

DIVIDER MUST BE STOWED DURING TAKE-OFF AND LANDING

On fixed panel, toilet side

I4113200AAANMIA8300

TOILET SEAT MUST NOT TO BE  
OCCUPIED DURING TAKE-OFF  
AND LANDINGCLOSE AND LOCK TOILET COVER  
WHEN NOT IN USEDO NOT HANG OR STORE ITEMS  
ON TOILET OR DIVIDERDIVIDER MUST BE STOWED DURING  
TAKE-OFF AND LANDINGHEADSET MUST BE USED WHEN  
DIVIDER IS DEPLOYED

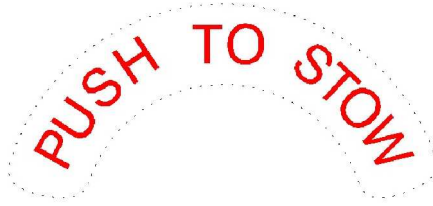
On access door, cabin side and toilet side

I4113200AAANMIA8100

**EMERGENCY  
STOWAGE****REMOVE  
COVER**

Behind access door, cabin side and toilet side

I4113200AAAANMA8000



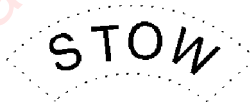
Inner face of toilet cover

I4113300AAAAAAMA8400



Front face of lavatory compartment, near opening/closing switches

I4113200AAAAMA8400



I4113200AAAAMA18000



On the magazine rack

14113200AA/IMA/8300

1,5 kg - 3.3 lbs

## SECTION 3

### Emergency procedures

The emergency procedures hereafter supplement those of the standard airplane described in section 3 Emergency procedures of the basic POH.

#### 3.10 - Pressurization and air conditioning

>> *Without v15 GARMIN software (Pre-MOD70-0407-00)*

**CABIN ALTITUDE**

Inform passengers to use emergency stowing of the divider and oxygen mask.

>> *With v15 GARMIN software (Post-MOD70-0407-00) or airplane with G3000 Flight deck (MOD70-0476-00)*

**CABIN ALTITUDE** and **USE OXYGEN MASK**

or

**CABIN ALTITUDE** and **USE OXYGEN MASK** and **EDM**

Inform passengers to use emergency stowing of the divider and oxygen mask.

Other procedures in the basic POH are unchanged.

## SECTION 4

### Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal procedures of the basic POH when the TBM airplane is equipped with the option lavatory compartment.

#### **BRIEFING to passengers to be performed before entering the airplane**

Normal and Emergency stowing operations of the divider.

In case of depressurization : emergency stowing of the divider, use oxygen mask, and remain seated unless otherwise instructed by the crew.

The headset must be used when the divider is deployed to allow communication with the crew in case of emergency.

## SECTION 5

### Performance

Installation and operation of Lavatory compartment do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option lavatory compartment.

#### **6.1 - General**

This paragraph is intended to provide the pilot with a simple and rapid means of determining weight and balance of the airplane when equipped with the lavatory compartment option.

#### **▲ WARNING ▲**

**It is the pilot's responsibility to ensure that the airplane is properly loaded and the weight and balance limits are adhered to.**



## 6.4 - Determining the new airplane empty weight and balance after the application of the lavatory compartment option

• NOTE •

The new empty weight determination after lavatory compartment installation shall be performed from the 6-seat configuration airplane characteristics

- 1) Record the basic empty weight (1a) and moment (1b) and CG (MAC %) (1c) from the last Weight and Balance Report in 6-seat configuration (see samples Figures 6.4.1 and 6.4.2 of the basic Pilot's Operating Handbook).
- 2) Compute the new empty weight (2a) and moment (2b) as sum of all above weights (1a) [removed equipment + installed equipment] and associated moments (1b) [removed equipment + installed equipment]
- 3) Compute the new empty weight arm (3) and CG (MAC %) (3c) using given formulas.
- 4) Report the new empty weight arm (3) and CG (MAC %) (3c) into the WEIGHT AND BALANCE FORM AND DIAGRAM of the airplane loading form in order to perform the weight and balance determination with the lavatory compartment installed.

■ >> From S/N 1000 to S/N 1159

Moment = Weight x Arm  $CG (MAC \%) = \frac{(Arm (m) - 4.392)}{1.51} \times 100$

Item	Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty Weight (kg)	(1a)		(1b)	(1c)
Weight and moment variation after lavatory compartment option installation	+ 12		+ 86	
New empty weight (ready for cargo preparation)	(2a)	(3)	(2b)	(3c)

Moment = Weight x Arm  $CG (MAC \%) = \frac{(Arm (in) - 172.93)}{59.45} \times 100$

Item	Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty Weight (lbs)	(1a)		(1b)	(1c)
Weight and moment variation after lavatory compartment option installation	+ 27		+ 7530	
New empty weight (ready for cargo preparation)	(2a)	(3)	(2b)	(3c)

Pilot's Operating Handbook

>> From S/N 1160

Moment = Weight x Arm  $CG (MAC \%) = \frac{(Arm (m) - 4.392)}{1.51} \times 100$

Item	Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty Weight (kg)	(1a)		(1b)	(1c)
Weight and moment variation after lavatory compartment option installation without seat heating system	+ 19		+ 134	
or				
Weight and moment variation after lavatory compartment option installation with seat heating system	+ 18		+ 127	
New empty weight (ready for cargo preparation)	(2a)	(3)	(2b)	(3c)

Moment = Weight x Arm  $CG (MAC \%) = \frac{(Arm (in) - 172.93)}{59.45} \times 100$

Item	Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty Weight (lbs)	(1a)		(1b)	(1c)
Weight and moment variation after lavatory compartment option installation without seat heating system	+ 42		+ 11643	
or				
Weight and moment variation after lavatory compartment option installation with seat heating system	+ 40		+ 11056	
New empty weight (ready for cargo preparation)	(2a)	(3)	(2b)	(3c)

### Using the weight and balance form

**▲ CAUTION ▲**

Empty weight, arm and CG % position to be considered are the ones from the last weight and balance report issued after the lavatory compartment option installation.



Refer to POH section 6.4 using the weight and balance form procedure to determine the weight and balance of the airplane equipped with the lavatory compartment option together with the use of the loading form hereafter.

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)
		<b>25 - Equipment and furnishings</b>		
O	0505-25C	Lavatory compartment	138.9 (63)	267.7 (6.799)
		Lavatory compartment carpet	28.7 (13)	211.4 (5.370)



## Weight and balance form and diagram (m, kg) - only applicable if lavatory compartment is installed

■ >> From S/N 1000 to S/N 1159

$$\text{Moment} = \text{Weight} \times \text{Arm} \qquad \text{CG (MAC \%)} = \frac{(\text{Arm (m)} - 4.392)}{1.51} \times 100$$

Item	Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty Weight (kg)				
Baggage FWD (< 50 kg)		3.250		
Front Seats (kg)		4.534		
Inter. Seats	-17 kg per seat removed	5.710		
	Pax			
Baggage AFT (< 100 kg)		7.695		
Zero Fuel Weight (< 2 736 kg)				
Fuel (kg)		4.820		
Ramp Weight (< 3 370 kg)				
Taxi Fuel (kg)		4.820		
Takeoff Weight (< 3 354 kg)				
Trip Fuel (kg)		4.820		
Landing Weight (< 3 186 kg)				

>> From S/N 1160

Moment = Weight x Arm  $CG (MAC \%) = \frac{(Arm (m) - 4.392)}{1.51} \times 100$

Item	Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty Weight (kg)				
Baggage FWD (< 50 kg)		3.250		
Front Seats (kg)		4.534		
Inter. Seats	-15 kg per seat removed *	5.710		
	Pax			
Baggage AFT (< 100 kg)		7.695		
Zero Fuel Weight (< 2 736 kg)				
Fuel (kg)		4.820		
Ramp Weight (< 3 370 kg)				
Taxi Fuel (kg)		4.820		
Takeoff Weight (< 3 354 kg)				
Trip Fuel (kg)		4.820		
Landing Weight (< 3 186 kg)				

\* Seats weights do not include seat heating system weight

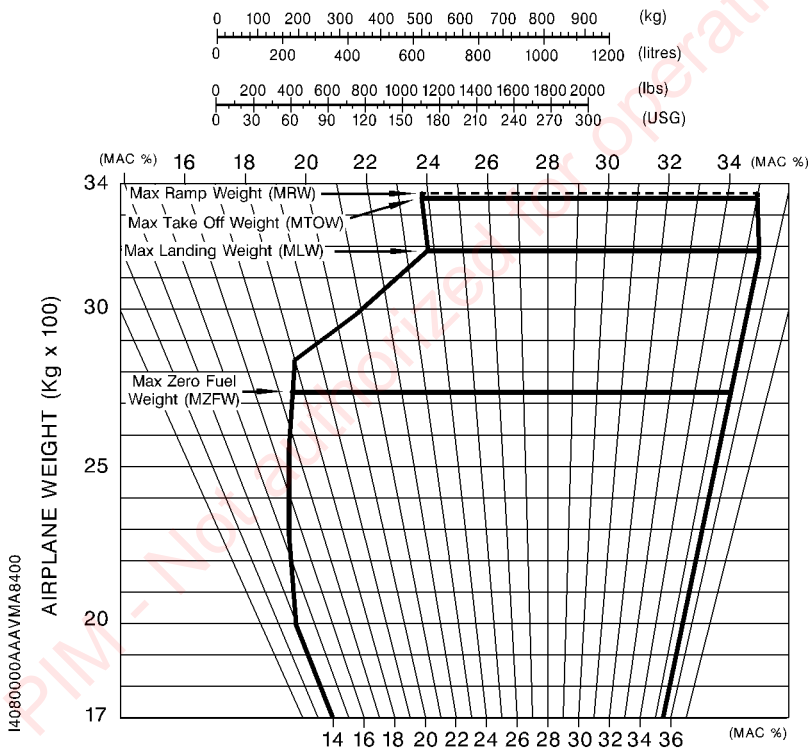


Figure 9.63.1 – Weight and Balance diagram

**Weight and balance form and diagram (in, lbs) - only applicable if lavatory compartment is installed**

>> From S/N 1000 to S/N 1159

Moment = Weight x Arm  $CG (MAC\%) = \frac{(Arm (in) - 172.93)}{59.45} \times 100$

Item	Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty Weight (lbs)				
Baggage FWD (< 110 lbs)		128.0		
Front Seats (lbs)		178.5		
Inter. Seats	-37.5 lbs per seat removed	224.8		
	Pax			
Baggage AFT (< 220 lbs)		303.0		
Zero Fuel Weight (< 6 032 lbs)				
Fuel (lbs)		189.8		
Ramp Weight (< 7 430 lbs)				
Taxi Fuel (lbs)		189.8		
Takeoff Weight (< 7 394 lbs)				
Trip Fuel (kg)		189.8		
Landing Weight (< 7 024 lbs)				

Pilot's Operating Handbook

>> From S/N 1160

$$\text{Moment} = \text{Weight} \times \text{Arm} \qquad \text{CG (MAC \%)} = \frac{(\text{Arm (in)} - 172.93)}{59.45} \times 100$$

Item	Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty Weight (lbs)				
Baggage FWD (< 110 lbs)		128.0		
Front Seats (lbs)		178.5		
Inter. Seats	-33.1 lbs per seat removed *	224.8		
	Pax			
Baggage AFT (< 220 lbs)		303.0		
Zero Fuel Weight (< 6 032 lbs)				
Fuel (lbs)		189.8		
Ramp Weight (< 7 430 lbs)				
Taxi Fuel (lbs)		189.8		
Takeoff Weight (< 7 394 lbs)				
Trip Fuel (kg)		189.8		
Landing Weight (< 7 024 lbs)				

\* Seats weights do not include seat heating system weight

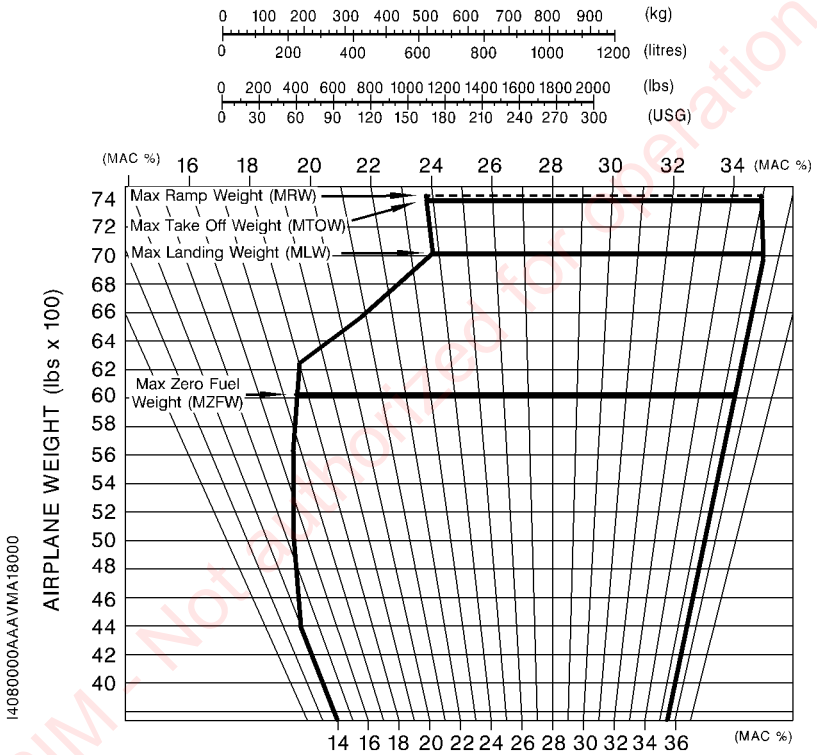


Figure 9.63.2 - Weight and Balance diagram

## SECTION 7

### Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option Lavatory compartment.

For operation, refer to equipment User's Guide.

The lavatory compartment is installed against right interior upholstery panel, facing large door. The lavatory compartment is installed at the place of the rear seats, removed to allow this installation. It is attached to the fuselage structure on the cabin floor, using the seats tracks with four pads and screws.

The lavatory compartment structure is made of composite panels.

The lavatory compartment assembly is composed of :

- A chemical toilet,
- Electrically deployable separating panels (divider),
- Two (2) actuating switches (DEPLOY, STOW),
- Two (2) emergency stowing buttons (PUSH TO STOW), accessible from inside or outside the lavatory compartment,
- One (1) mirror,
- One (1) electric power plug,
- One (1) headset allowing communication between the passenger and the crew.

When the lavatory compartment is not occupied, the divider is stored unfolded in the lavatory compartment structure.

A breaker integrated into the lavatory compartment structure protects its electrical system. The circuit breaker is only accessible when the lavatory compartment is removed.

Two (2) switches, located on the seat front face, left side, hidden when latching strap snap fastener is locked, control the deployment/stowing of the moveable parts of the divider.

Two (2) access doors (Velcro tape attached), located on each side of the fixed part of the divider, give access to the emergency stowing push button, allowing the emergency (manual) retraction of the divider, using the application of a vertical force (by hand) on the upper edge of the divider.

Electric connection of the system is performed via a power plug :

>> Without optional 12V power plugs (Pre-MOD70-0174-25)

- 28 volts

>> With optional 12V power plugs (Post-MOD70-0174-25)

- 12 volts

>> All

The power plug is located on the right hand side upholstery panel. Connection is only accessible when the lavatory compartment structure is unscrewed from the floor and moved slightly aside to access the plug.

Mirror is automatically illuminated during the deployment of the divider.

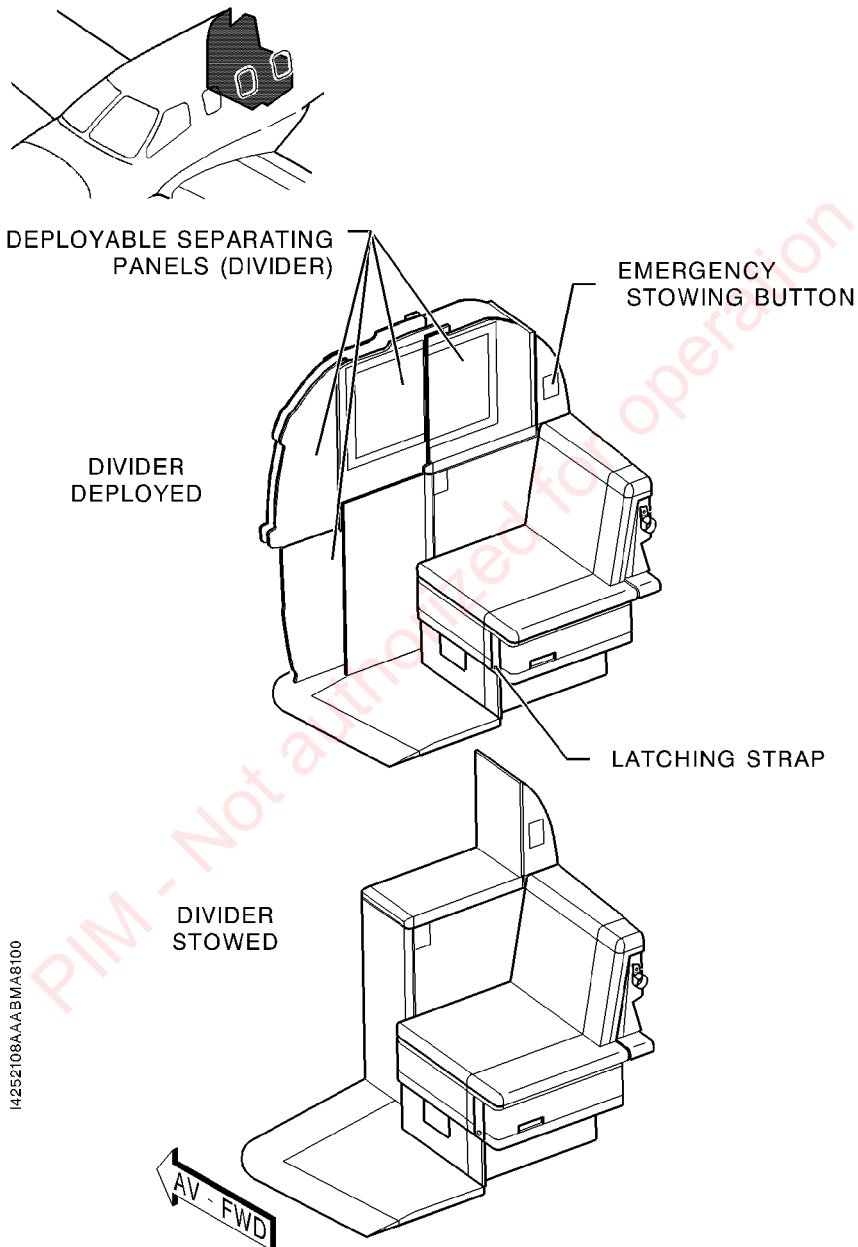
A safety anti pinching sensor stops the deployment of the divider in case an interference is detected.

To remove the chemical toilet system from the lavatory compartment structure, it is necessary to unlatch the toilet cover, remove the top frame, if installed then lift upward the forward face of the structure and pull out the toilet from the structure.

A storage volume on the left side of the toilet is accessible when toilet cover is up.

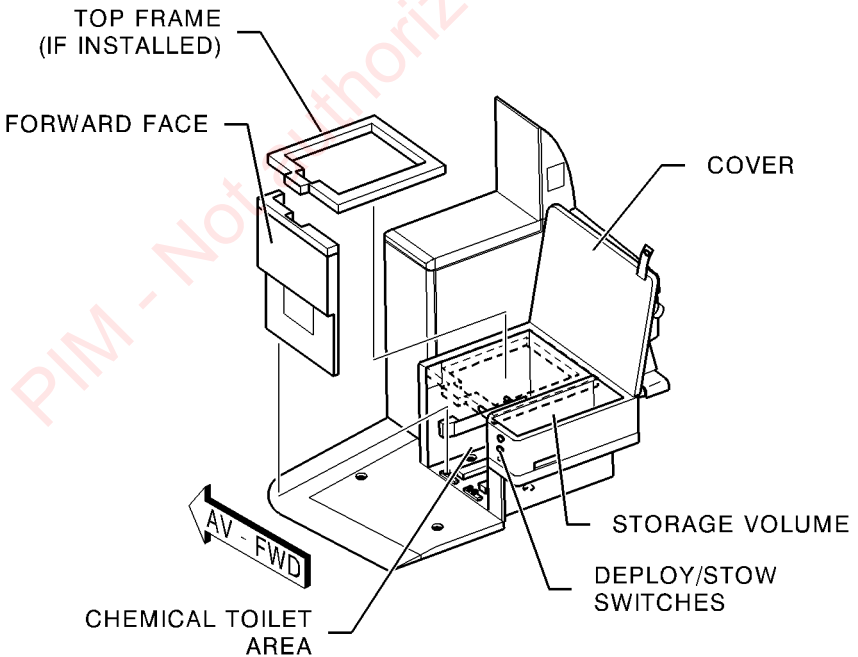
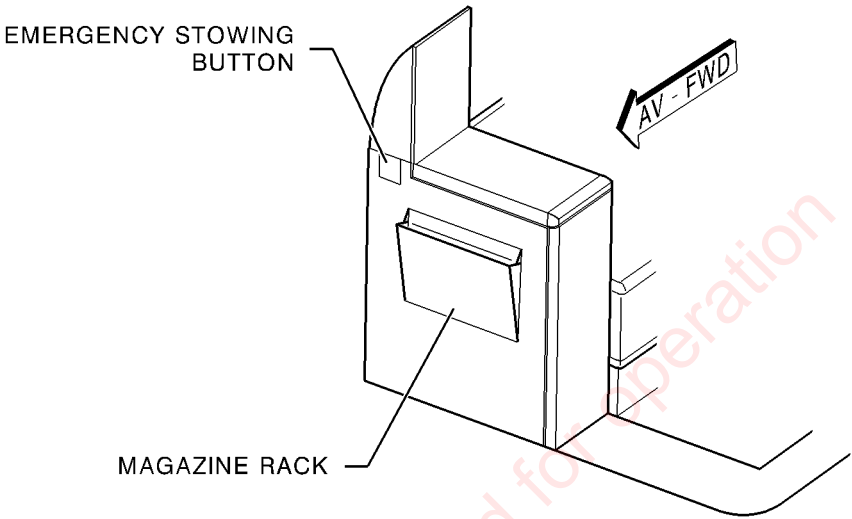
A magazine rack is located on the forward side of the fixed part of the divider.





14252108AAABMA8100

Figure 9.63.3 (1/2) - Lavatory compartment



14252108AA.ABMA8200

Figure 9.63.3 (2/2) - Lavatory compartment

**SECTION 8****Handling, servicing and maintenance**

Installation and operation of Lavatory compartment do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, servicing and maintenance of the basic POH.

PIM - Not authorized for operation

Intentionally left blank

PIM - Not authorized for operation

**SUPPLEMENT**  
**JCAB Supplement for TBM940 airplane**  
**Table of contents**

	Page
1 - General .....	9.71.2
2 - Limitations .....	9.71.4
3 - Emergency procedures .....	9.71.13
4 - Normal procedures .....	9.71.13
5 - Performance .....	9.71.14
6 - Weight and balance .....	9.71.17
7 - Description .....	9.71.17
8 - Handling, servicing and maintenance .....	9.71.17
Appendix A .....	9.71.18
Appendix B .....	9.71.19
Appendix C .....	9.71.22
Appendix D .....	9.71.13

## SECTION 1

### General

This Pilot's Operating Handbook supplement applies for the Japanese Registered Airplanes which have the Japanese Type Certificate in accordance with Civil Aeronautics Act 12.

• NOTE •

The basic Pilot's Operating Handbook shall be applied, except for matters revised or supplemented by this Supplement.

•

Model	Basic Pilot's Operating Handbook
TBM940 From S/N 1272	Doc No. DMKFM00EEN

Table 1 - Applicable coverage

### TC Holder

DAHER AEROSPACE  
23 Route de Tours  
41400 SAINT-JULIEN-DE-CHEDON  
FRANCE

(Refer to the JCAB TCDS No. 99 for details.)

### Aircraft Manufacturer

COMPAGNIE DAHER  
35, Cours Pierre Puget  
13006 MARSEILLE  
FRANCE

(Refer to the JCAB TCDS No. 99 for details.)

### Kind and Class of Aircraft

Kind: Aeroplane

Class: Single-Engine Turbine

### Airworthiness Category

Airplane Normal

## **Type and Number of Engine, Propeller**

Make/Manufacturer: Pratt & Whitney Canada

Model: PT6A - 66D

Number: One (1)

Type of Propeller: HARTZELL, HC-E5N-3C / NC8834K, 5 blades

## **Dimensions**

Length: 10.736 m

Width: 12.833 m

Height: 4.355 m

Refer to the Pilot's Operating Handbook for TBM940 airplane, Doc. No DMKFM00EEN for details.

## **Weight and Center of Gravity**

Maximum certified weight and center of gravity range:

Refer to the JCAB-TCDS No. 99 and Pilot's Operating Handbook for TBM940 airplane, Doc. No DMKFM00EEN for details.

## **Fuel tanks / Oil tank Capacity**

MAX Oil Level (FULL line): 12.7 quarts (6 quarts usable, 6.7 quarts unusable)

Refer to the JCAB-TCDS No. 99 and Pilot's Operating Handbook for TBM940 airplane, Doc. No DMKFM00EEN for details.

## **JCAB Approved Pilot's Operating Handbook List**

Refer to Appendix A, "JCAB Approved Pilot's Operating Handbook List for TBM940 airplane."

## SECTION 2 Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH.

### General

The limitations are the same as those in the basic EASA Approved Pilot's Operating Handbook except:

### Japanese Placards

- (1) On pressurized baggage compartment partition wall

C4113500AAAMA8000

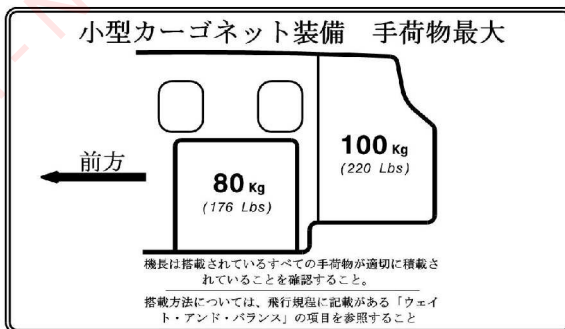
#### 手荷物最大 **100kg - (220lbs)**

機長は搭載されているすべての手荷物が適切に積載されていることを確認すること。

搭載方法については、飛行規程に記載がある「ウェイト・アンド・バランス」の項目を参照すること

- (1)a For the small cargo net, on R.H. side lower upholstery panel

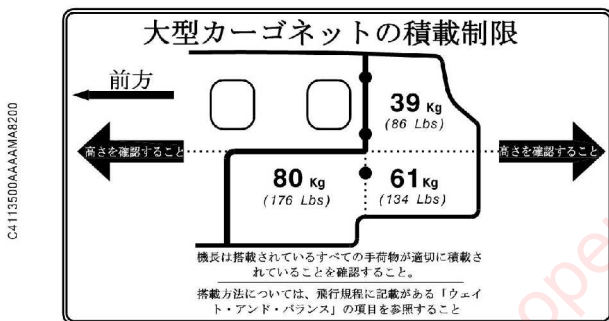
C4113500AAAMA8100





Pilot's Operating Handbook

- (1)b For the large cargo net, on R.H. side upholstery panel, in the rear baggage compartment



- (1)c On FWD baggage compartment door frame (non pressurized)

C-4113400AAAAA8000

**手荷物最大 50kg - (110lbs)**

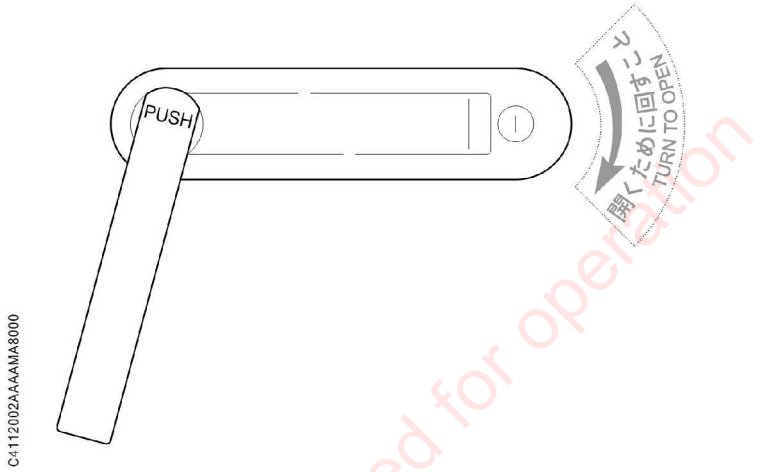
搭載方法については、飛行規程に記載がある「ウェイト・アンド・バランス」の項目を参照すること

- (2) Above passenger's table

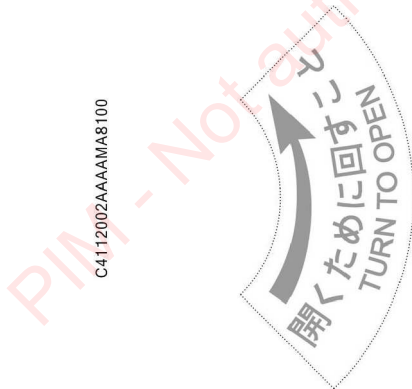
C-4113400AAAAA8000

テーブルは、離陸中と着陸中は収納すること  
**TABLE MUST BE STOWED DURING TAKE-OFF AND LANDING**

- (3) On pilot door - External side, if installed



- (4) On access door - External side



Pilot's Operating Handbook

- (5) On outer fuselage skin aft of access door



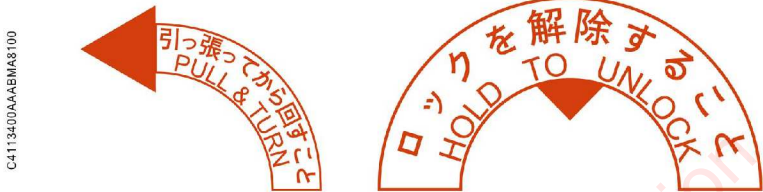
- (6) In the cabin forward of access door



- (7) On access door - Internal side



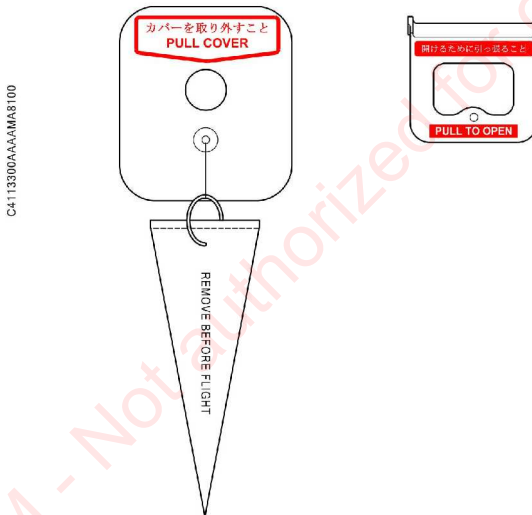
- (8) On pilot door - Internal side, if installed



- (9) On emergency exit handle

Marking on cover

Marking on handle



- (10) Above emergency exit door



## Pilot's Operating Handbook

- (11) On rear passengers masks containers

C4113400AAAABMA8200

酸素マスク  
**OXYGEN MASKS**

>> Aircraft equipped with coat hanger (MOD70-0557-25)

- (12) On the L.H. Rear cargo compartment panel upper edge

C4113200AAAAMA8000

最大搭載重量 **4.5kg - 10lbs**

## Occupants limits

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.

Refer to the Pilot's Operating Handbook for TBM940 airplane, Doc. No DMKFM00EEN for details.

## Operating limitations

This airplane may be operated in the following kinds of operations when appropriate equipment is installed.

• NOTE •

Refer to the Appendix B, "Judgement table for operating method limitation."

•

- Flight under instrument flight rules (Flight under instruction of air traffic control all times)
- Instrument flight (Flight in the instrument meteorological condition)
- Flight under instrumental navigation (Flight over cloud or over water beyond the distance and time specified in Article 66 of the Regulations under visual meteorological condition)
- Visual flight other than flight under instrumental navigation
- Night operations
- Day operations
- Flight under icing meteorological condition (as approved in type certification)
- High altitude operations (above 3,000 meters of altitude)

## Operational capabilities

• NOTE •

The following capabilities do not constitute operational approval. The operator must be authorized by the JCAB to conduct these operations.

•

### Category I operations

The installed equipment for Category I operations complies with the equipment requirements described in the Appendix 2 of the JCAB Circular No.5-001, "Criteria for approval of Category I operations and Evaluation guideline of Category I operations."

## Pilot's Operating Handbook

**Category II operations**

The installed equipment for Category II operations complies with the equipment requirements described in the Appendix 2 of the JCAB Circular No.5-002, "Criteria for approval of Category II operations and Evaluation guideline of Category II operations."

**RVSM operation**

The installed equipment for RVSM operation complies with the equipment requirements described in the JCAB Circular No.5-004, "Criteria for approval of RVSM operations and Evaluation guideline of RVSM operations."

**GPS (Operational Implementation Standards using GPS for the Instrumental Flight Method)**

The installed GPS complies with the equipment requirements described in the JCAB Circular No.5-005, "Operational Implementation Standards using GPS for the Instrumental Flight Method", Chapters 3-1, 4-1, and 5-1.

- The installed Garmin G3000 system is compliant with AC 20-138D.
- The GDU1250W is compliant with TSO-C146d Class 3.
- The GIA64W is compliant with TSO-C145d Class 3.
  - Section 2 - Limitations  
No Change
  - Section 3 - Emergency Procedures  
No Change
  - Section 4 - Normal Procedures  
No Change

**Category III operations**

The installed equipment for Category III operations complies with the equipment requirements described in the Appendix 2 of the JCAB Circular No.5-013, "Criteria for approval of Category III operations and Evaluation guideline of Category III operations."

### **ADS-B (Automatic Dependent Surveillance-Broadcast)**

The installed ADS-B OUT complies with the equipment requirements described in the JCAB Circular No.5-019, "Implementation Approval Criteria using ADS-B OUT", Chapter 3.

- The installed ADS-B OUT system is compliant with 14 CFR 91.225 and 91.227, CS ACNS.D.ADSB (1090 MHz Extended Squitter ADS-B Out), and CS ACNS.D.ELS/EHS (Mode S Elementary/Enhanced Surveillance).
- The standard GTX 345R is compliant with TSO-C112e.
- The optional GTX 33DES is compliant with TSO-C112d.

### **MMEL/MEL**

Instructions for "MMEL / MEL" in this Pilot's Operating Handbook can be followed only when the Minimum Equipment List (MEL) is specified in the Operation Manual and/or Maintenance Manual created by domestic aircarrier and is approved by the Minister of Land, Infrastructure, Transport and Tourism.



### **SECTION 3**

#### **Emergency procedures**

No specifics

### **SECTION 4**

#### **Normal procedures**

No specifics

PIM - Not authorized for operation

## **SECTION 5**

### **Performance**

#### **Noise levels**

This aircraft complies with the requirements of Civil Aeronautics Regulations, Annex 2, "Aircraft Noise Standard" and ICAO Annex 16, Volume I, Appendix 2, Amendment 7, Aircraft Noise, Chapter 4 (effective March 21, 2002)

This Noise Document is made pursuant to Annex 16, Volume I, Attachment G to the Convention on International Civil Aviation (hereinafter referred to as "ICAO Format") and approved as a part of the Pilot's Operating Handbook.

In Japan, Compliance to the Noise Requirement is certified as a part of Airworthiness Certification. Noise Certificate is not issued and Noise Characteristics are described in Pilot's Operating Handbook. Therefore, Japan determined to incorporate this Noise Document into the Pilot's Operating Handbook.

Accordingly, Item 18 "Statement of Compliance", Item 19 "Date of Issuance" and Item 20 "Signature", which are parts of "ICAO Format" but not appropriate for inclusion in the Pilot's Operating Handbook, are deleted.

In respect of the Pilot's Operating Handbook which is published and managed by Aircraft Type, it may be a case that Item 4 "Nationality and Registration Marks" and Item 6 "Aircraft Serial Number" are blank.

Pilot's Operating Handbook

1. State of Registry:  JAPAN		3. Document Number: (if necessary)		
2. Noise Document				
4. Nationality and registration marks: (if necessary)		5. Manufacturer and manufacturer's designation of aircraft:  DAHER AEROSPACE TBM940 airplane		6. Aircraft serial number
7. Engine  Pratt & Whitney Canada, PT6A-66D			8. Propeller: *  HARTZELL HC-E5N-3C / NC8834K	
9. Maximum takeoff mass:  3354 kg (7394 lbs)		10. Maximum landing mass:  3186 kg (7024 lbs)	11. Noise certification standard:  Chapter 10	
12. Additional modifications incorporated for the purpose of compliance with the applicable noise certification standards:  None				
13. Lateral/full-power noise level:*	14. Approach noise level:*	15. Flyover noise level:*	16. Overflight noise level:*	17. Takeoff noise level:*
NA	NA	NA	NA	76.4 dB see POH 5.2 Noise level
Remarks:				

\* These boxes may be omitted depending on noise certification standard.

Table 2 - Noise levels (ICAO Format)

## **Engine emissions**

### **Fuel venting**

This aircraft complies with the requirements of Civil Aeronautics Regulations, Annex 3, Chapter 1.

• NOTE •

The fuel venting has been demonstrated under the ICAO Annex 16, Volume II, Third Edition, Part II, Chapter 2.

•

### **Exhaust emissions**

This aircraft complies with the requirements of Civil Aeronautics Regulations, Annex 3, Chapter 2.

PIM - Not authorized for operation

## SECTION 6

### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH.

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)
<b>01 - Specific optional equipment</b>				
S	0619-11D	Japan certification markings	/	/

## SECTION 7

### Description

No specifics

## SECTION 8

### Handling, servicing and maintenance

No specifics

## APPENDIX A

### JCAB Approved Pilot's Operating Handbook List for TBM940 airplane

Pilot's Operating Handbook (Basic) and Pilot's Operating Handbook Supplement(s) approved by JCAB are as below.

Pilot's Operating Handbook Doc. No.	Pilot's Operating Handbook Title	Certifying Authority approval date and Current Revision	JCAB approval date
DMKFM00EEN	Pilot's Operating Handbook (Basic)	Sep. 23, 2019 Edit. 0 Rev 1	Dec. 19, 2019
DMJFM06EEN	POH Supplement 6 WX-500 stormscope	Feb. 26, 2018 Edit. 3 Rev 2	Aug. 08, 2019
DMJFM18EEN	POH Supplement 18 Engine fire detection system	Feb. 27, 2018 Edit. 3 Rev 2	Aug. 08, 2019
DMJFM49EEN	POH Supplement 49 GARMIN TAWS system	Feb. 26, 2018 Edit. 2 Rev 2	Aug. 08, 2019
DMJFM50EEN	POH Supplement 50 GARMIN Synthetic Vision System	Feb. 28, 2018 Edit. 2 Rev 2	Aug. 08, 2019
DMKFM71EJP	POH Supplement 71 JCAB Supplement for TBM940 airplane	Dec. 19, 2019 Edit. 0 Rev 1	Dec. 19, 2019

Table 3 - JCAB Approved Pilot's Operating Handbook (Basic and Supplements)

## APPENDIX B

### Judgement table for operating method limitation (Required equipment, etc on each operating method)

Equipment, etc	Mini. Qty	Operating method							
		A	B	C	D	E	F	G	H
Gyroscopic attitude indicator	1 (Note 2)	○	○						
Gyroscopic directional indicator	1	○	○						
Gyroscopic turn indicator	1 (Note 3)	○	○						
Slip indicator	1	○	○						
Precision altimeter	1 (Note 2)	○	○						(Note 8) ○
Rate of climb indicator	1	○	○						
Airspeed indicator with anti-icing device	1 (Note 2)	○	○						
Ambient air temperature indicator	1	○	○	○					
Clock with second indication	1	○	○	○					
Airborne DME	1 (Note 4)	○	○	○					
Direction finder, VOR receiver Airborne TACAN receiver	1 (Note 2)	(Note 5) ○	(Note 6) ○	(Note 6) ○					
Navigation lights						○			
Anti-collision lights						(Note 7) ○			
Anti-icing device								○	
Oxygen supply system (Note 1)									○

In addition to the equipment, etc. listed above, it shall be necessary to obey the requirements for equipment specified in the Civil Aeronautics Regulations, etc

Table 4 - Judgement table for operating method limitation (1/3)

Category of Operating Methods

- A Flight under instrument flight rules (Flight under instruction of air traffic control all times)
- B Instrument flight (Flight in the instrument meteorological condition)
- C Flight under instrumental navigation (Flight over cloud or over water beyond the distance and time specified in Article 66 of the Regulations under visual meteorological condition)
- D Visual flight other than flight under instrumental navigation
- E Night operations
- F Day operations
- G Flight under icing meteorological condition (as approved in type certification)
- H High altitude operations (above 3,000 meters of altitude)

(Note 1) Oxygen supply system with following capacity

(1) Aircraft without cabin pressurization system

- (a) When flight is conducted at altitude between 3,000 and 4,000 meters, necessary oxygen quantity shall be as much as for all occupants to use for the flight time equal to flight time related to the said flight minus 30 minutes.
- (b) When flight is conducted at altitude beyond 4,000 meters, necessary oxygen quantity shall be as much as for all occupants to use for flight time related to the said flight.

(2) Aircraft with cabin pressurization system

As long as flight is conducted at altitude beyond 3,000 meters, necessary oxygen quantity shall be as much as for all occupants to use for flight time which takes from maximum planned altitude related to the flight to altitude of 3,000 meter. (If flight must be continued at altitude beyond 4,000 meters for safe flight, necessary oxygen quantity shall be total amount of above quantity added as much as for all occupants to use for flight time of the flight continued beyond 4,000 meters.)

(Note 2) Minimum quantity on aircraft for air transport use, of which maximum takeoff gross weight is more than 5,700 kg shall be two.

(Note 3) Aircraft equipped with gyroscopic attitude indicator which is able to indicate every attitude of aircraft may not be equipped.

(Note 4) Aircraft other than the aircraft for air transport use, of which maximum takeoff gross weight is more than 5,700 kg (limited to the aircraft which must be equipped with VOR receiver) may not be equipped

Table 4 - Judgement table for operating method limitation (2/3)



## Pilot's Operating Handbook

- (Note 5) Either of direction finder, VOR receiver, onboard TACAN equipment will receive radio signals which are dependent on air route related to the flight from NDB, VOR or TACAN stations which exist compose air route. However, direction finder can be substituted with GNSS receiver.
- (Note 6) Either of direction finder, VOR receiver, onboard TACAN receiver be able to receive radio signals all through the flight from NDB, VOR or TACAN stations. However, direction finder can be substituted with GNSS receiver.
- (Note 7) Aircraft of which maximum takeoff weight is equal and more than 5,700 kg, and aircraft of which maximum takeoff gross weight is less than 5,700 kg and obtains initial airworthiness certification after January 17, 2003 must be equipped.
- (Note 8) Required for the flight at altitude of 16,000 ft or more under the Notice of the Director-General of Civil Aviation Bureau, KUUKOU No.551 dated December 9 of 1971, "Specification of Altimeters."

Table 4 - Judgement table for operating method limitation (3/3)



**APPENDIX D**

**Table of Supplemental Pilot's Operating Handbook (Template)**

様式 I-2-5 (Form I-2-5)

			☆☆☆☆式○○○○型 (Name of manufacturer) (Name of type)	
追加飛行規程一覽表 Table of Supplemental Flight Manual JA◇◇◇◇ Registration mark				
番号 No.	表 Title	題 Title	装着年月日 Date of installation	確認印 Signature

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PIM - Not authorized for operation

## SUPPLEMENT

### France specifics

#### Table of contents

	Page
1 - General .....	9.72.2
2 - Limitations .....	9.72.2
3 - Emergency procedures .....	9.72.6
4 - Normal procedures .....	9.72.6
5 - Performance .....	9.72.6
6 - Weight and balance .....	9.72.6
7 - Description .....	9.72.6
8 - Handling, servicing and maintenance .....	9.72.6

## SECTION 1

### General

This supplement is intended to inform the pilot about the airplane specifics, among others those required by the relevant Certification Authorities (limitations, description and operations necessary to the operation of the French registered TBM airplane).

## SECTION 2

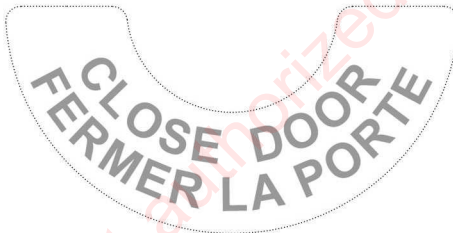
### Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH.

#### 2.9 - Placards

- 1 - In the cabin forward of access door

C4113500AAABMA8000



- 2 - On access door - Internal side

C4113500AAABMA8100



Pilot's Operating Handbook

3 - On pilot door - Internal side, if installed

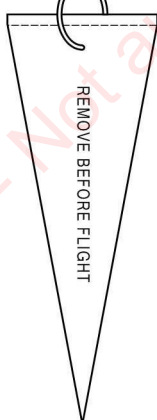
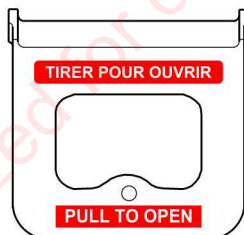
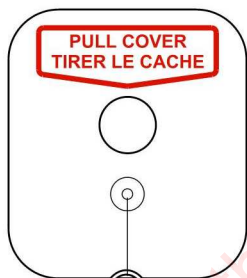
C4113500AAABMA8200



4 - On emergency exit handle

Marking on cover

Marking on handle



C4113300AAAEIMA8000

- 5 - Above emergency exit door

C4113300AAAEMA8100



- 6 - On rear passengers masks containers

C4113400AACMA8000

**OXYGEN MASKS  
MASQUES A OXYGENE**

- 7 - On internal face of rear passengers masks containers doors

C4112400AAAAAMA8000

**PULL MASKS FOR  
OXYGEN SUPPLY.  
TIRER LE MASQUE  
POUR ENCLENCHER  
L'OXYGENE.**



## Pilot's Operating Handbook

>> *Airplane equipped with lavatory compartment (Post-MOD70-0505-25)*

8 - On access door, cabin side and toilet side



4113400AAADMA8000

9 - Behind access door, cabin side and toilet side



C4113400AAADMA8100

### SECTION 3

#### Emergency procedures

No specifics

### SECTION 4

#### Normal procedures

No specifics

### SECTION 5

#### Performance

No specifics

### SECTION 6

#### Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH.

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)
		<b>01 - Specific optional equipment</b>		
S	0619-11E	France certification markings	/	/

### SECTION 7

#### Description

No specifics

**SECTION 8**  
**Handling, servicing and maintenance**

No specifics

PIM - Not authorized for operation

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## **TBM 940**

**With MOD70-0649-00 Version A**

# **List of equipment**

**Report reference NAV No. 34/90-RJ-App 8**

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## **DAHER AEROSPACE**

Customer Care  
65921 TARBES CEDEX 9  
FRANCE

*Printed in FRANCE*

**List of effective pages and validities****Edition 0 of March 05, 2019****Airplane equipped with MOD70-0649-00 version A**

<b>Page No.</b>	<b>Edit./Rev. No.</b>	<b>Rev. Date</b>	<b>Page No.</b>	<b>Edit./Rev. No.</b>	<b>Rev. Date</b>
Title	0-0	MAR 19	19	0-0	MAR 19
			20	0-0	MAR 19
0A	0-0	MAR 19	21	0-0	MAR 19
0B	0-0	MAR 19	22	0-0	MAR 19
0C	0-0	MAR 19	23	0-0	MAR 19
0D	0-0	MAR 19	24	0-0	MAR 19
			25	0-0	MAR 19
1	0-0	MAR 19	26	0-0	MAR 19
2	0-0	MAR 19	27	0-0	MAR 19
3	0-0	MAR 19	28	0-0	MAR 19
4	0-0	MAR 19	29	0-0	MAR 19
5	0-0	MAR 19	30	0-0	MAR 19
6	0-0	MAR 19	31	0-0	MAR 19
7	0-0	MAR 19	32	0-0	MAR 19
8	0-0	MAR 19	33	0-0	MAR 19
9	0-0	MAR 19	34	0-0	MAR 19
10	0-0	MAR 19	35	0-0	MAR 19
11	0-0	MAR 19	36	0-0	MAR 19
12	0-0	MAR 19	37	0-0	MAR 19
13	0-0	MAR 19	38	0-0	MAR 19
14	0-0	MAR 19	39	0-0	MAR 19
15	0-0	MAR 19	40	0-0	MAR 19
16	0-0	MAR 19	41	0-0	MAR 19
17	0-0	MAR 19	42	0-0	MAR 19
18	0-0	MAR 19			

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**List of amendments**

Revision 0 dated March 05, 2019

Pages	Description
All pages	Creation

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## Table of contents

	Page
ATA 01 - Specific optional equipment .....	4
ATA 21 - Environmental system .....	5
ATA 22 - Auto flight .....	8
ATA 23 - Communications .....	9
ATA 24 - Electrical power .....	12
ATA 25 - Equipment and furnishings .....	13
ATA 26 - Fire protection .....	16
ATA 27 - Flight controls .....	17
ATA 28 - Fuel system .....	18
ATA 30 - Ice and rain protection .....	19
ATA 31 - Indicating / recording systems .....	21
ATA 32 - Landing gears .....	22
ATA 33 - Lights .....	24
ATA 34 - Navigation .....	26
ATA 35 - Oxygen .....	32
ATA 37 - Vacuum .....	33
ATA 46 - Information systems .....	34
ATA 52 - Doors .....	35
ATA 56 - Windows .....	36
ATA 57 - Wings .....	37
ATA 61 - Propeller .....	38
ATA 71 - Power plant .....	39
ATA 77 - Engine indicating .....	40
ATA 79 - Lubrication .....	41

The following list contains standard equipment installed on each airplane and available optional equipment.

A separate list of equipment of items installed at the factory in your specific airplane is provided in your airplane file.

Columns showing weight (in pounds) and arm (in inches) provide the weight and center of gravity location for the equipment.

In the list of Required, Standard or Optional equipment (not restrictive), a letter "R", "S", "O" or "A" allows classifying the equipment :

- "R" : equipment items required for certification
- "S" : standard equipment items
- "A" : optional equipment items which are in addition to required or standard items
- "O" : optional equipment items replacing required or standard items

## Pilot's Operating Handbook

## List of critical RVSM equipment

Equipment listed hereafter, or later approved versions, is required for RVSM operation.

Equipment	*	**	P/N
Barometric altimeter :			
- GDC72B (Air data computer)	2	2	P/N 011-03734-40
- GDU1250W (Display)	3	2	P/N 011-04186-00
Autopilot Altitude Hold function :			
- GMC710 (AFCS mode controller)	1	1	P/N 011-01020-10
- GIA64W (Integrated Avionics Computer)	2	2	P/N 011-03711-01
- GRS79	2	2	P/N 011-03732-00
ATC transponder :			
- Altitude reporting transponder	1	1	TSO C-74c

(\*) Quantity installed

(\*\*) Quantity required

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)
<b>01 - Specific optional equipment</b>				
S	01026A	Flight ceiling at 31000 ft	/	/

PIM - Not authorized for operation

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)
		<b>21 - Environmental system</b>		
S	0454-21A	General Air System Controller (GASC) 82024A040701	1.98 (0.900)	311.02 (7.900)
		<b>21-20 - Distribution</b>		
S		Mixing unit 9723A010001	0.53 (0.240)	151.57 (3.850)
S		Hot Air Distributor 6044A010001	4.06 (0.840)	153.54 (3.900)
S		Bleed temperature switch 92244B010002	0.13 (0.060)	153.54 (3.900)
		<b>21-30 - Pressurization control</b>		
S		Cabin altitude warn switch 214 C40.3.261	0.077 (0.035)	153.94 (3.910)
S		Cabin differential pressure warn switch 17-600-01	0.143 (0.065)	139.76 (3.550)
S	0448-21	Outflow valve 81144A010101	2.976 (1.350)	317.32 (8.060)
S	0448-21	Safety valve 81145A010101	2.337 (1.060)	317.32 (8.060)
		<b>21-50 - Temperature conditioning system</b>		
S		Flow control shut-off valve 6784A010001	4.74 (2.500)	114.17 (2.900)
S		Non-return valve 7085A010002	0.11 (0.050)	102.36 (2.600)

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)
S		Shut-off valve 4589A010001	2.37 (1.075)	114.17 (2.900)
S		Intermediate pressure sensor 93557A010001	0.33 (0.150)	110.24 (2.800)
S		Overheat thermal switch A042010300-5	0.18 (0.080)	110.24 (2.800)
S		Main heat exchanger 81249A010001	7.72 (3.500)	108.27 (2.750)
S		Non-return valve 52704A010001	0.66 (0.300)	118.11 (3.000)
S		Ground Fan 8031A020	3.95 (1.790)	90.55 (2.300)
S		Ground Fan 8031A030	3.95 (1.790)	90.55 (2.300)
		<b>21-55 - Vapor cycle cooling system</b>		
S		Compressor 1377A010001	14.77 (6.700)	98.43 (2.500)
S		Cockpit Evaporator Assembly 14720A010001	9.06 (4.111)	200.79 (5.100)
S		Cabin Evaporator Assembly 14719A010001	12.90 (5.850)	311.02 (7.900)
S		Condenser Assembly 81250A010001	24.80 (11.250)	330.71 (8.400)
		<b>21-60 - Temperature regulation</b>		
S		By-pass valve 6043A010001	3.31 (1.500)	106.30 (2.700)
S		Bleed differential pressure sensor 93558A010001	0.44 (0.200)	114.17 (2.900)

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)
S		Inlet temperature sensor 93276A010001	0.11 (0.050)	153.54 (3.900)
S		Cockpit ventilated sensor 92279A010002	0.18 (0.080)	182.09 (4.625)
S		Cabin ventilated sensor 92279A010002	0.18 (0.080)	250.00 (6.350)

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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)
<b>22 - Auto flight</b>				
S	0305-22	Upgrading of AFCS GFC 700 composed of :  - Pitch servo GSA 81 + Servo mount GSM 86  - Roll servo GSA 81 + Servo mount GSM 86  - Yaw servo GSA 81 + Servo mount GSM 86  - Pitch trim servo GSA 81+ Servo mount GSM 86  - Trim adapter GTA 82	  4.08 (1.85)  4.08 (1.85)  4.08 (1.85)  4.14 (1.88)  1.30 (0.59)	  247.40 (6.284)  231.10 (5.870)  253.70 (6.444)  157.87 (4.010)  240.87 (6.118)
S	0550-00	Auto-throttle, installation mainly composed of :  - Version A : new AFCS Control Unit : GMC 711AT  - Version B : modification of power lever and adding of GSA87 servo-actuator  - Version C : SD-card (new protection functions)	  15.67 (7.11)  3.04 (1.38)  /	  155.40 (3.947)  151.50 (3.847)  /

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)
<b>23 - Communications</b>				
O	0633-34A	Antenna CI105-16	0.397 (0.180)	237.32 (6.028) or 155.94 (3.961) or 161.33 (4.098)
S		Static dischargers 2-31 SCY (Qty: 2)	Neglig.	/
S	0526-23A	Static dischargers on flaps	Neglig.	/
		- Static dischargers 2-5 SCY (Qty : 2)	Neglig.	/
O	0287-23A	Radio stereo-headset A20 with bluetooth	Neglig.	/
O	0487-23A	Radio stereo-headset A20	Neglig.	/
O	0331-23L	Weather Data Link and Satellite Phone GSR 56		
		- Version L : with antenna CI 490-490 (GSR unit support pre-installed and no antenna support)	3.44 (1.561)	58.00 (1.474)

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)
A	0410-23B	HF Communication System KHF1050 of which	38.03 (17.250)	302.70 (7.689)
		- Control Display unit	1.56 (0.707)	155.43 (3.948)
		- Receiver/Exciter	5.90 (2.676)	123.07 (3.126)
		- Antenna coupler	16.20 (7.348)	342.28 (8.694)
		- Power amplifier	8.40 (3.810)	342.83 (8.708)
		- HF Antenna kit	1.74 (0.790)	324.80 (8.250)
A	0458-23B	GDL 69A SXM - XM Generation 4 interfaced with G3000 system	1.41 (0.640)	163.46 (4.152)
S	0563-23A	Dual audio system with integrated Marker Beacon Receiver # 1 GMA 36B	2.80 (1.27)	148.90 (3.782)
S	0563-23A	Dual audio system with integrated Marker Beacon Receiver # 2 GMA 36B	2.80 (1.27)	148.90 (3.782)
S	0564-31A	G3000 COM # 1 system		
		- Transceiver (integrated in GIA 64W Integrated Avionics Unit # 1 - refer to ATA 34-28)		
		- VHF antenna (under fuselage) 16-21B-P3	0.86 (0.390)	271.65 (6.900)

Pilot's Operating Handbook

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)
S	0564-31A	G3000 COM # 2 system  - Transceiver (integrated in GIA 64W Integrated Avionics Unit # 2 - refer to ATA 34-28)  - VHF antenna (above fuselage) 16-21B-P3	0.86 (0.390)	271.65 (6.900)
S	0564-31C	G3000 COM # 1 system  - .Transceiver (integrated in GIA 64W Integrated Avionics Unit # 1 - refer to ATA 34-28)  - VHF antenna (under fuselage) 16-21B-P3	/	/
S	0564-31C	G3000 COM # 2 system  . Transceiver (integrated in GIA 64W Integrated Avionics Unit # 2 - refer to ATA 34-28)  . VHF antenna (above fuselage) 16-21B-P3	/	/
			0.86 (0.390)	271.65 (6.900)

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)
		<b>24 - Electrical power</b>		
		<b>24-30 - DC generation</b>		
R	0234-24	Electric power system (EPS) 1408-1-1	14.330 (6.500)	128.15 (3.255)
R		Stand-by alternator ES10024B-5	13.000 (5.897)	104.84 (2.663)
R		Starter generator MG94K-1	31.989 (14.510)	118.83 (2.815)
S	24002A	Lead-acid battery RG-380E/44	85.979 (39.000)	112.20 (2.850)
A	0538-24B	Capability to connect a battery charger	0.396 (0.180)	137.00 (3.495)
		<b>24-40 - External power supply</b>		
S		Ground power receptacle MS 3506-1	0.794 (0.360)	114.17 (2.900)

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)
<b>25 - Equipment and furnishings</b>				
A	0505-25C	Installation of the lavatory compartment, of which:	$\Delta + 33.07$ $(\Delta + 15.00)$	269.45 (6.844)
		- Specific carpet replacing standard carpet	11.82 (5.36)	/
<b>25-11 - Furnishings - Flight compartment</b>				
A	25032	Front seats ease covers	2.756 (1.250)	183.78 (4.668)
A	0417-25	Support device for document on yoke (one on each control wheel):	/	/
		- Version A: Paper clips	Neglig.	166.00 (4.220)
		- Version B: Mechanical provision for mounting device dedicated to digital tablet	1.984 (0.900)	166.00 (4.220)
<b>25-21 - Furnishings - Passengers compartment</b>				
O	0515-25	One piece cabin floor protection	$\Delta 0$	/
S	0557-25B	Coat hanger	0.28 (0.130)	287.91 (7.313)
S	0641-25A	Upholstery Version 2019, of which:	$\Delta$ Neglig.	/
		- Carpets for 6-place configuration	26.68 (12.100)	/
		- Carpets for 4-place configuration	20.59 (9.340)	/

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)
S	0530-25A	Hi-power USB servicing plugs, of which :  - one 5 VDC servicing single plug (USB type) 6430202-9 - on instrument panel, pilot side  - one 5 VDC servicing double plug unit (USB type) 6430202-5 - on instrument panel, front R.H.seat side  - two 5 VDC servicing double plug units (USB type) 6430202-5 - in the cabin (R.H. and L.H. Intermediate seats)	0.33 (0.15)  /  /  /  /	188.00 (4.775)  /  /  /
S	0531-25A	13.8 VDC servicing plug unit, of which :  - 28-12 VDC converter 6430120-1  - 13-8 VDC servicing plug 77 00 808 844 - in the cabin (R.H. Rear seat)	0.74 (0.334)  0.360 (0.270)  0.14 (0.064)	193.00 (4.900)  193.00 (4.900)  288.00 (7.310)
S	0574-25B	Pilot door thermal insulation  <b>Seats - Belts</b>  <b>Belts</b>	0.55 (0.250)	172.05 (4.370)
O	0388-25B	Airbag seat belts (pilot's and R.H. front seats) (improved comfort)	15.08 6.840	189.11 4.803
S	0516-25A	Pilot's and passengers' seat belts	10.24 (4.640)	/
S	0568-25A	Airbag capability	1.43 (0.647)	166.85 (4.238)

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)
<b>Seats</b>				
S	0588-25A	Pilot's seat T700J2500005 with seat heaters system	49.98 (22.67)	185.86 (4.721)
S	0588-25A	Front R.H. seat T700J2500005 with seat heaters system	49.98 (22.67)	185.86 (4.721)
<b>25-60 - Emergency equipment</b>				
S		Smoke goggles MXP 210	0.855 (0.388)	200.00 (5.080)
<b>25-61 - Emergency locator transmitter</b>				
A	0437-25B	Emergency locator transmitter ELT 1000 (airplanes equipped with reinforcement), of which	2.385 (1.082)	340.91 (8.659)
		- ELT 1000 with base	1.764 (0.800)	354.72 (9.010)
		- Antenna 110-338	0.449 (0.204)	318.70 (8.095)



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)
<b>26 - Fire protection</b>				
A	0391-26	Portable fire extinguisher unit 74-00  - Version A (on R.H. Station R.H. Upholstering)	4.89 (2.220)	170.11 (4.321)
A	0496-26A	Engine fire detection system	1.464 (0.664)	96.06 (2.440)

PIM - Not authorized for operation

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)
		<b>27 - Flight controls</b>		
		<b>27-10 - Roll control</b>		
R		Roll trim actuator 145700.02	1.543 (0.700)	212.60 (5.400)
		<b>27-20 - Yaw control</b>		
R		Rudder trim actuator 145700.02	1.543 (0.700)	395.27 (10.040)
S	0348-27	New control wheels		
S		- L.H. equipped control wheel 83912112	2.535 (1.150)	157.48 (4.000)
S		- R.H. equipped control wheel 83912113	2.535 (1.150)	157.48 (4.000)
		<b>27-30 - Pitch control</b>		
S		Pitch trim actuator 145400-02	1.213 (0.550)	425.20 (10.800)
S	0510-27D	Stick shaker C-101702-1	1.053 (0.477)	144.00 (3.658)
		<b>27-50 - Wing flaps (control)</b>		
R		Flap control including :	15.520 (7.040)	218.50 (5.550)
		- Flap motor 6157-1	2.866 (1.300)	216.54 (5.500)
		- Flap actuator 1-5297 / 2-5297	1.830 (0.830)	220.47 (5.600)

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)
		<b>28 - Fuel system</b>		
		<b>28-20 - Fuel supply</b>		
R		Electric boost pump 1B9-5	4.409 (2.000)	129.92 (3.300)
R		Engine driven fuel pump 1127-02	1.543 (0.700)	110.24 (2.800)
R		Fuel unit L88A15-651	4.586 (2.080)	133.07 (3.380)
R		A35 fuel sequencer unit	1.102 (0.500)	125.98 (3.200)
		<b>28-40 - Fuel indication</b>		
R	0158-28C	Fuel gage amplifier (in us gal) 738574-1-0	1.08 (0.49)	278.74 (7.080)
R		Inboard L.H. Gage 762 438.1.0	0.331 (0.150)	183.07 (4.650)
R		Inboard R.H. Gage 762 439.1.0	0.331 (0.150)	183.07 (4.650)
R		Intermediate gage 762 440.1.0	0.220 (0.100)	190.94 (4.850)
R		Outboard gage 762 441.1.0	0.220 (0.100)	190.94 (4.850)
R	0427-28A	Low level sensor 747-971-1-0	0.143 (0.065)	185.28 (4.706)

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)
<b>30 - Ice and rain protection</b>				
S		Deicer T700A3013003000, L.H. horizontal stabilizer	4.189 (1.900)	398.42 (10.120)
S		Deicer T700A3013003001, R.H. horizontal stabilizer	4.189 (1.900)	398.42 (10.120)
S		Deicer T700A3014003000, vertical stabilizer	3.968 (1.800)	374.02 (9.500)
S		Deicer T700A3010001002, inboard L.H. wing	5.732 (2.600)	173.23 (4.400)
S		Deicer T700A3010001003, inboard R.H. wing	5.732 (2.600)	173.23 (4.400)
S		Deicer T700A3010001004, middle L.H. wing	3.748 (1.700)	173.23 (4.400)
S		Deicer T700A3010001005, middle R.H. wing	3.748 (1.700)	173.23 (4.400)
S		Deicer T700A3010012000, outboard L.H. wing	2.65 (1.200)	173.23 (4.400)
S		Deicer T700A3010001007, outboard R.H. wing	3.307 (1.500)	173.23 (4.400)
S		Dual port distribution valve 1532-10C	2.425 (1.100)	125.98 (3.200)
S		Timer 42E25-2A	0.772 (0.350)	177.17 (4.500)
S		Water separator and filter 44E21-2A	1.102 (0.500)	125.98 (3.200)
S	0570-30	Automatic advisory in flight ice detection system	1.55 (0.91)	407.50 (10.350)

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)
S		<b>30-40 - Windshield deicing</b>  Windshield heater controllers (Qty 2 : L.H. + R.H.) TWH 93-01	1.984 (0.900)	149.61 (3.800)
S		<b>30-60 - Propeller deicing</b>  Timer 3E2311-4	0.44 (0.200)	200.79 (5.100)

PIM - Not authorized for operation

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)
		<b>31 - Indicating/recording systems</b>		
		<b>31-30 - Recorders</b>		
S	0455-31D	Light weight Flight Data Recorder (ADRS - CARS), of which :	5.659 (2.567)	256.50 (6.515)
		- Light Data Recorder	4.982 (2.260)	260.63 (6.620)
		- MK170 microphone	0.198 (0.090)	153.54 (3.900)
		- Support (pre-installed)	0.478 (0.217)	260.63 (6.620)
S	0533-31A	Digital hourmeter (flying time)	0.412 (0.187)	148.62 (3.775)
S	0564-31A	Avionics processing Unit # 1 GIA 64W	7.50 (3.40)	147.8 (3.753)
S	0564-31A	Avionics processing Unit # 2 GIA 64W	7.50 (3.40)	147.8 (3.753)
A	0578-31B	Data collection and transmission system	3.62 (1.64)	125.2 (3.180)

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)
		<b>32 - Landing gears</b>		
		<b>32-10 - Main landing gear</b>		
R	0190-32	L.H. main landing gear D23767001	53.79 (24.400)	200.39 (5.090)
R	0190-32	R.H. main landing gear D23768001	53.79 (24.400)	200.39 (5.090)
		<b>32-20 - Nose landing gear</b>		
R	0134-32	Nose gear D23766000	53.57 (24.300)	93.70 (2.380)
		<b>32-30 - Extension and retraction</b>		
O	0334-32	Main locking actuator VSTS 083560	13.228 (6.000)	208.07 (5.285)
O	0334-32	Nose locking actuator VSTS 083560	13.228 (6.000)	110.24 (2.800)
R		Hand pump 914-8D27	2.326 (1.055)	181.10 (4.600)
		<b>32-35 - Hydraulic generation</b>		
R	060-32	Hydraulic power pack 1118-04	10.362 (4.700)	84.65 (2.150)

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)
<b>32-40 - Wheels and brakes</b>				
O	0606-32	Brake assembly 30-311	14.991 (6.800)	204.33 (5.190)
R		Main tire 18x5.5-10PR	13.50 (6.123)	204.33 (5.190)
R	0409-32	Main tire 18x5.5-10PR	14.396 (6.530)	204.33 (5.190)
R		Master cylinder 010-07802	0.882 (0.400)	145.67 (3.700)
O	0643-32	Nose tire 070-310-0	5.709 (2.590)	98.18 (2.494)
R		Nose tire 5.00-5-10PR TL MICHELIN	5.600 (2.540)	89.57 (2.275)
		GOOD YEAR	6.300 (2.858)	89.57 (2.275)
R	0408-32	Nose tire 5.00-5-10PR	6.834 (3.100)	89.57 (2.275)
R		Nose wheel 40-262A	2.976 (1.350)	89.57 (2.275)
R		Main wheel (Model 40-434)	11.28 (5.120)	204.33 (5.190)
O	0606-32	Main wheel (Model 40-489)	11.28 (5.120)	204.33 (5.190)
R		Parking brake valve T700A3240010 or T700B3240001	0.331 (0.150)	157.48 (4.000)



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)
		<b>33 - Lights</b>		
		<b>33-10 - Instrument panel lighting</b>		
S		Instruments emergency lighting 2240-3	0.110 (0.050)	181.10 (4.600)
S	0322-00	PULSELITE unit	Neglig.	/
		<b>33-40 - External lighting</b>		
S	0509-33	Leading edge ice detection LED light 01-0771904-00	0.25 (0.113)	172.00 (4.371)
S	0322-00	LED L.H. taxi and landing lights 01-0771674-01	1.400 (0.635)	181.10 (4.600)
S	0322-00	LED R.H. taxi and landing lights 01-0771674-01	1.400 (0.635)	181.10 (4.600)
S	0322-00	NAV/Anticollision system (LED lights) :		
S		Central units :		
S		- L.H. strobe light power supply 01-0771234-07	0.609 (0.277)	191.38 (4.861)
S		- R.H. strobe light power supply 01-0771234-07	0.609 (0.277)	191.38 (4.861)
S		- Rear strobe light power supply	0.609 (0.277)	397.87 (10.106)

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)
S		Lights :		
S		- L.H. navigation/strobe/recognition lights 01-0771170-02	0.499 (0.227)	184.29 (4.681)
S		- R.H. navigation/strobe/recognition lights 01-0771170-01	0.499 (0.227)	184.29 (4.681)
S		- Rear tail navigation/strobe lights 01-0790667-00	0.499 (0.227)	444.21 (11.283)

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)
		<b>34 - Navigation</b>		
		<b>34-11 - Air data systems</b>		
S		Pitot L heated probe AN 5812-1	0.750 (0.340)	200.79 (5.100)
S		Pitot R heated probe AN 5812-1	0.750 (0.340)	200.79 (5.100)
R		Static reference plug T700A3415017	Neglig.	/
S		Static reference selector TB30 77010000	0.220 (0.100)	157.48 (4.000)
S	0160-34A	Authorization to operate in RVSM area	/	/
S	0423-34A	Lift transducer and AoA computer installation, of which :	1.66 (0.752)	242.01 (6.147)
R		- Lift transducer P/N C-101-707-1 or P/N C-101-707-2	0.50 (0.226)	173.23 (4.400)
S		- AoA computer P/N C-101-706-1	0.74 (0.336)	273.62 (6.950)
S		- K59 and K590 relays	0.25 (0.115)	265.55 (6.745)
S	0462-34B	Standby Attitude Module MD302	1.61 (0.730)	154.53 (3.925)
S	0544-34B	Air Data Computer # 1 GDC 72B	1.83 (0.83)	151.10 (3.838)
S	0544-34B	Air Data Computer # 2 GDC 72B	1.83 (0.83)	151.10 (3.838)

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)
<b>34-21 - Heading reference system</b>				
S	0543-34B	Attitude and Heading Reference System # 1 GRS 79	3.20 (1.45)	171.77 (4.363)
S	0543-34B	Attitude and Heading Reference System # 2 GRS 79	3.20 (1.45)	171.77 (4.363)
<b>34-28 - Electronic flight instrumentation system</b>				
A	0226-00C	Synthetic Vision System	/	/
S	0549-00A	Integrated Flight Deck System G3000 composed of :		
		- PFD1 GDU 1250W	5.49 (2.49)	154.88 (3.934)
		- PFD2 GDU 1250W	5.49 (2.49)	154.88 (3.934)
		- MFD GDU 1250W	5.49 (2.49)	154.88 (3.934)
	0565-77A	- Engine/Airframe Interface Unit # 1 GEA 71B	2.65 (1.20)	148.30 (3.766)
	0565-77A	- Engine/Airframe Interface Unit # 2 GEA 71B	2.65 (1.20)	148.30 (3.766)
	0564-31A	- Integrated Avionics Unit # 1 GIA 64W	7.50 (3.19)	147.80 (3.753)
	0564-31A	- Integrated Avionics Unit # 2 GIA 64W	7.50 (3.19)	147.80 (3.753)
	0563-23A	- Audio box GMA 36B	2.80 (1.27)	148.90 (3.782)

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)
S	0585-34	- Touch Controller Unit # 1 GTC 585 and	3.99 (1.81)	156.69 (3.980)
		- Touch Controller Unit # 2 GTC 585	3.99 (1.81)	156.69 (3.980)
		<b>34-30 - Landing and taxiing aids</b>		
A	0566-34A	- Surface watch unlock card	Neglig.	/
		<b>34-31 - Marker</b>		
O	0541-23A	MARKER antenna 6216-82-00	0.990 (0.450)	121.00 (3.065)
		<b>34-41 - Stormscope</b>		
A	34056F	Stormscope WX 500, G3000 coupled :	4.94 (2.24)	232.28 (5.900)
		- Antenna NY163	0.84 (0.38)	311.02 (7.900)
		- Processor WX500	2.27 (1.03)	255.91 (6.500)
		<b>34-42 - Weather radar</b>		
S	0394-34C	Weather radar GWX 70, of which	10.35 (4.47)	169.10 (4.295)
		- SAINT-GOBAIN radome 4906-100-V2	2.82 (1.280)	169.10 (4.295)
S	0430-34A	New SAINT-GOBAIN radome 4906-100-V2	2.82 (1.280)	169.10 (4.295)
O	573-34A	Ressourcing radome	2,87 (1.300)	162.99 (4.140)

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)
<b>34-43 - Radioaltimeter</b>				
A	0451-34D	GRA 55 radar altimeter, of which :	4.127 (1.872)	220.47 (5.600)
		- Transceiver	3.527 (1.600)	228.82 (5.812)
		- Transmitting antenna S67-2002	0.300 (0.136)	182.09 (4.625)
		and		
		- Receiving antenna S67-2002	0.300 (0.136)	205.83 (5.228)
<b>34-44 - Traffic advisory system</b>				
A	0176-00F	TAWS system	Neglig.	/
A	0258-00G	TAS system GTS 820, G3000 coupled, of which :	22.53 (10.220)	177.68 (4.513)
		- Processor GTS 820	9.92 (4.500)	143.11 (3.635)
		- Power amplifier/low noise amplifier GPA 65	1.90 (0.860)	221.42 (5.624)
		- Antenna GA 58 (above fuselage)	0.79 (0.360)	230.71 (5.860)
		- Antenna GA 58 (under fuselage)	0.79 (0.360)	260.63 (6.620)

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)
<b>34-51 - NAV 1 installation</b>				
S		VHF GS-NAV antenna DM N4-17N	3.307 (1.500)	401.57 (10.200)
S		Receiver (integrated in the MOD70-0564-31A GIA 64W Integrated Avionics Unit # 1 : refer to ATA 34-28)	/	/
<b>34-52 - NAV 2 installation</b>				
S		Receiver (integrated in the MOD70-0564-31A GIA 64W Integrated Avionics Unit # 2 : refer to ATA 34-28)	/	/
<b>34-53 - Transponder</b>				
A	0475-34D	Transponder # 1 GTX 33D - Mode S with antenna diversity and extended squitter	3.39 (1.54)	147.68 (3.751)
		+ Antenna KA 61 (under fuselage)	0.40 (0.18)	150.08 (3.812)
		+ Antenna KA 61 (above fuselage)	0.40 (0.18)	193.22 (4.908)
O	0542-34P	Transponder # 2 GTX 345R - full Mode S enhanced surveillance capability, without antenna diversity, with extended squitter and ADS-B IN acquisition (with ethernet connection)	2.90 (1.32)	147.20 (3.738)
		+ Antenna KA 61	0.40 (0.18)	150.08 (3.812)
O	0542-34Q	Transponder # 1 GTX 345R - full Mode S enhanced surveillance capability, without antenna diversity, with extended squitter and ADS-B IN acquisition (with ethernet connection)	2.90 (1.32)	147.20 (3.738)
		+ Antenna KA 61	0.40 (0.18)	150.08 (3.812)

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)
O	0542-34R	Transponder # 2 GTX 345R - full Mode S enhanced surveillance capability, without antenna diversity, with extended squitter and ADS-B IN acquisition (without ethernet connection)	2.90 (1.32)	147.20 (3.738)
		<b>34-57 - Global Positioning System (GPS)</b>		
S	0476-00A	GPS/WAAS Antenna GA 36	0.48 (0.22)	204.84 (5.203)
S	0476-00A	GPS/WAAS and Datalink Antenna GA 37	0.55 (0.25)	204.84 (5.203)
		<b>34-62 - Multifunction display</b>		
A	0176-00G	Chartview function	Neglig.	/



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)
		<b>35 - Oxygen</b>		
S	0207-00	Gaseous oxygen system with ZODIAC oxygen masks	22.73 (10.31)	226.77 (5.760)
O	0597-35A	MC10 Smartmike oxygen masks (pilot and front passenger)	1.290 (0.59)	188.98 (4.800)

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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)
		<b>37 - Vacuum</b>		
S		Air ejector valve 19E17-5A	0.661 (0.300)	116.14 (2.950)
S		Regulator and relief valve 38E-96-2D	1.323 (0.600)	116.14 (2.950)
S		Vacuum relief valve 691-21A	0.331 (0.150)	139.76 (3.550)
S		Valve 557-18 E	0.353 (0.160)	118.11 (3.000)

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)
<b>46 - Information system</b>				
S	0545-46A	Pdf viewer installation (SD card)	Neglig.	/
S	0547-46C	Flight stream transceiver FS510 (SD card)	Neglig.	/

PIM - Not authorized for operation

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)
		<b>52 - Doors</b>		
O	0320-52B	New "Pilot" door	45.607 (20.687)	173.23 (4.400)
S	0342-52	Additional landing gear doors	6.613 (3.000)	204.33 (5.190)

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)
		<b>56 - Windows</b>		
S	56001A	Deiced R.H. windshield	Δ1.764 (Δ 0.800)	158.27 (4.020)

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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)
		<b>57 - Wings</b>		
S	57001A	Utilization on runways covered with melting snow	Δ- 7.716 (Δ- 3.500)	200.00 (5.080)

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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)
		<b>61 - Propeller</b>		
		<b>61-10 - Propeller assembly</b>		
S	0345-61	Propeller (5-blade) HC-E5N-3C / NC 8834 K + spinner 104552P	171.08 (77.60)	43.11 (1.095)
		<b>61-20 - Controls</b>		
S		Propeller governor 8210.007	2.646 (1.200)	59.06 (1.500)
R	0445-72	Overspeed governor 1439292	2.535 (1.200)	52.38 (1.330)

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)
		<b>71 - Power plant</b>		
R		Turboprop engine PT6 A-66D	497.30 (226.00)	79.72 (2.025)
S		Top silentblocks 95007-16 (Qty 2)	2.647 (1.201)	79.72 (2.025)
S		Bottom silentblocks 95007-19 (Qty 2)	2.654 (1.204)	79.72 (2.025)
		<b>71-60 - Air inlet</b>		
R	0359-71	Inertial separator actuator JA23372-1000-1	2.156 (0.978)	62.99 (1.600)



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)
		<b>77 - Engine indicating</b>		
R		Compressor turbine tacho-generator (Ng) MIL-G-26611 GEU-7/A / 32005-007	0.981 (0.445)	108.27 (2.750)
R		Power turbine tacho-generator (Np) MIL-G-26611 GEU-7/A / 32005-007	0.981 (0.445)	55.12 (1.400)
R	0328-77	Torque transducer APTE-438-1000-75D	0.473 (0.215)	54.84 (1.393)
S	0565-77	Engine/Airframe Interface Units GEA 71B installation and Sandia conditioner and low pass filter removal, of which:		
		- Version A : Unit # 1 GEA 71B installation	2.65 (1.20)	148.30 (3.766)
		Unit # 2 GEA 71B installation	2.65 (1.20)	148.30 (3.766)
		- Version B Sandia conditioner and low pass filter removal	- 0.76 (- 0.34)	148.30 (3.768)
		- Version C Sandia conditioner and low pass filter removal	- 0.76 (- 0.34)	148.30 (3.768)
		<b>77-12 - Fuel management</b>		
S		Fuel flow transmitter 660 526AS	0.683 (0.310)	110.20 (2.799)

Pilot's Operating Handbook

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)
		<b>79 - Lubrication</b>		
		<b>79-20 - Distribution</b>		
R		Oil cooler L8538233	10.472 (4.750)	90.55 (2.300)
		<b>79-30 - Indicating</b>		
R	0327-79A	Oil pressure transmitter APT-369A-1000-150G (5 VDC)	0.337 (0.153)	105.35 (2.676)
S	0512-79	Chip detector monitoring	Neglig.	/

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