



## **TBM 700**

### **Versions A and B**

**equipped with MOD70-0276-00**

# **PILOT'S INFORMATION MANUAL**

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**SOCATA MODIFICATIONS - INDEX****NOTE :**

*The standardized name for SOCATA modifications is MOD70-XXX-XX*

MOD70 No.	SUBJECT	CLASSIF.
001-06	Increase in ramp and max. takeoff weights	Major
002-24	Alternator current output increase	Major
003-28	Unusable fuel updating	minor
004-55	Modification of horn installation on rudder	Major
007-21	Installation of cabin pressure regulating valves	Major
008-32	Nose wheel replacement	Major
010-24	Increase of the inboard generators ratings	minor
011-56	Installation of a bonding plate on de-iced windshield	minor
012-30	Pitch control horn de-icing	Major
013-34	VOR-LOC Glide antenna system - DORNE & MARGOLIN DMN4-17N	Major
015-24	ECE electric power center technical evolution - Bus 4	minor
016-57	Addition of compensating edge on R.H. aileron	minor
017-52	Improvement of passenger door lifting system	minor
018-24	EPC change - Starter priority	Major
019-25	PPI interiors	Major
020-79	Protection of oil cooler	minor
021-32	New A14 landing gear control panel	Major
022-55	Machined parts replaced by castings or drop forgings (in alternate)	Major

MOD70 No.	SUBJECT	CLASSIF.
023-25	Replacement of the ERDA bench by the SOCATA bench	Major
025-21	Cabin air cooling	minor
026-28	Fuel booster pump AIRBORNE 1B9-5	minor
027-32	Modification of the landing gears attaching bolts	Major
029-55	HEXCEL GENIN fibre glass P/N 1581/E536D as a variant	Major
030-28	New fuel pressure sender	minor
031-24	ESS BUS contact gage augmentation	minor
034-24	Strengthening of starter generator mounting clamp	minor
035-30	New windshield de-icing unit	minor
036-57	Flap roller carriage reinforcement	Major
037-21	Cabin air conditioning - Ground ventilation improvement	minor
038-28	Fuel unit INTERTECHNIQUE L88A15-651	minor
039-27	Installation of pitch trim position transmitter	minor
041-71	Reinforcement of NACA air intakes on cabin air conditioning system and engine oil cooling system	minor
042-25	Cabin covering improvement (lower door)	minor
043-32	Increasing in landing gear circuit breaker rating	minor
045-24	Modification of ground power receptacle shunt	minor
046-79	Modification of the oil cooler protecting grid	minor
047-55	Development of the insert potting resins on composite parts	Major

MOD70 No.	SUBJECT	CLASSIF.
049-25	Cabin covering improvement (side window)	minor
050-25	L.H. side lower panel covering between frame 2 and frame 4	minor
051-76	Fuel emergency control lever	minor
052-27	Cable guide bracket on pitch trim pulley	minor
053-24	Horizontal stabilizer and elevator trim tab bonding	minor
054-21	Reinforcement of the ECS exchanger air intake	minor
055-37	New supply/pressure switch S67	minor
057-33	Anticoll. lights, power unit WHELEN "CF"	minor
059-57	Wing flap rails fitting attachments	Major
060-32	Electrohydraulic generator IN-LHC 1118-04	minor
061-27	Elevator trim jack	minor
062-24	Strengthening of AUXILEC starter-generator mounting flange	Major
063-32	Main gear tires	minor
065-32	Removal of the main landing gear inboard doors	Major
066-57	Wing attachment shafts	minor
067-57	Simplification of the main landing gear fairings : standard configuration	minor
068-32	Nose gear tires	minor
069-55	Corrosion on rudder and elevator internal bearings and balancing weights	minor
070-57	Aileron balancing weight protection	minor
071-52	Control fork arm of the front doors	minor

MOD70 No.	SUBJECT	CLASSIF.
073-32	Installation of PACIFIC DIVISION landing gear emergency pump	minor
075-25	Pressurization valve soundproofing	minor
076-25	Pilot's adjustable lap strap	minor
077-55	Rudder horn bonding	minor
078-57	Aileron balancing weight	minor
079-53	Frame 10 reinforcement	Major
080-53	Frame 2 front and rear link fittings	Major
083-52	Lower door handle	minor
084-25	Footstep carpet	minor
087-52	Door microswitch adjustment	minor
088-53	Stringer bracket riveting	minor
089-25	Lowering of pilot's and R.H. front seats	minor
090-32	Landing gear retraction actuators P/N 08 1480	minor
091-52	TBM700B : Access door widening, incorporation of modifications and increase of maximum zero fuel weight	Major
095-71	Engine plenum chamber	minor
096-30	Modification of R.H. wing de-icing hose routing and modification of the stall warning indicator attachment screw length	minor
097-56	Windshield and side windows dry installation	minor
099-35	Modification of the chemical oxygen cylinder opening pin	Major
100-06	Increase of maximum zero fuel weight	Major
102-25	Cabin upholstering materials	minor
103-79	Modification of the oil cooler protecting grid	minor

MOD70 No.	SUBJECT	CLASSIF.
104-28	Fuel tank draining	minor
107-30	Evolution of deicing system in the fuselage	minor
108-57	Creation of a wing as spares	minor
109-53	Cabin draining valve	Major
110-55	External bearing/horizontal stabilizer	Major
111-53	Door maneuvering mechanism - Reinforcement of the pulley attachment at Frame 14	minor
112-21	Cabin air conditioning	minor
113-53	"FIRE-PROOF" treatment of the nose landing gear well	minor
114-25	Shoulder harnesses for pilots and passengers	minor
115-25	FWD baggage compartment panels	minor
116-52	Evolution of stairs hand rail mechanism	minor
117-55	Horizontal stabilizer reinforcement	Major
119-71	Change of location of the oil pump breather outlet	Major
120-55	Horizontal stabilizer outboard hinge fittings	Major
121-76	Thermal protection of JACOTTET propeller control lever	Major
122-57	Flap carriages	Major
123-52	Stairs damping	minor
124-71	Engine drains	minor
126-53	Fuselage structure reinforcement (Aircraft service life changed)	minor
127-55	Material change for vertical stabilizer attachment fittings	minor

MOD70 No.	SUBJECT	CLASSIF.
128-92	Engine wiring harness	minor
129-53	Material change for empennage attachment fittings on fuselage	minor
130-55	Material change for horizontal stabilizer rib and attachment fittings	minor
132-27	Reinforcement of aileron control stop	minor
135-11	Airplane without finishing paint	Major
144-33	Cabin lighting telebreaker	minor
146-00	Clamp type modification on airspeed indicating system and cabin pressurization regulation system	minor
0150-53	VHF1 antenna support reinforcement - S/N 243 equipped with option OPT70 34061A	minor
0157-21	Evaporator air inlet protection - TBM700A and B equipped with option OPT70 21002	minor
0158-28	Fuel gauging amplifier INTERTECHNIQUE	minor
0161-27	Aileron control emergency stop	minor
0163-77	Torque transducer static port tube	minor
0166-53	Change of glass fiber fabric type on TBM 700 composite floors	minor
0168-57	Modification of TBM 700 internal flap carriage pin definition (external flap carriages are processed by amendment)	minor
0172-57	Replacement on flaps of SHUR LOCK nuts by machined bushings	minor
0173-28	New fuel gauging probes	minor
0175-23	BOSE headset wiring (front and rear)	minor

MOD70 No.	SUBJECT	CLASSIF.
0177-57	Lower attachment fittings of external flap tracks	minor
0183-56	Side windows "generation 2006"	minor
0184-56	Cabin windows "generation 2006"	minor
0186-57	Inserts hot-fitted on flap ribs	minor
0190-32	Reinforcement of main landing gear legs	Major
0191-71	Engine drainage breather pipe modification - TBM 700A, B, C equipped with MOD70-124-71 (engine drainage) and TBM 700N (850)	minor
0194-25	Linings Generation 2005-3	minor
0195-56	Rear cabin window (same as front cabine window)	minor
0201-32	Landing gear actuating cylinder modification	minor
0205-55	Replacement of fin expansion pins	minor
0209-57	Reinforcement of trailing edge omega at rib 7	minor
0213-27	Pitch trim union connector at rear pressure bulkhead	minor
0216-52	TBM 700A door upper mechanism - Airplanes S/N 1 to 9, 11 to 17, 19 to 22, 25 to 27, 29 to 35, 38, 46, 49 not equipped as a retrofit with modification No. MOD70-019-25 and equipped with an interior handle unlocking device through push-button	minor
0217-24	Battery firewall screen	minor
0276-00	G1000 Integrated Flight Deck	Major



MOD70 No.	SUBJECT	CLASSIF.
0335-34	Electronic Standby Instrument ESI-2000 (Version D)	Major
0402-28	Fuel sequencer evolution	minor

**NOTE 1 :**

*Optional modifications are integrated in the list of equipment in Section 6 Weight and Balance (sub-section 6.5) of the POH.*

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## 1.1 - GENERAL

This Handbook contains 9 Sections, and includes the material required by FAR Part 23 to be furnished to the pilot for operation of the TBM 700 airplane equipped with MOD70-276-00. It also contains supplemental data supplied by the manufacturer.

The "GARMIN G1000 Integrated Flight Deck Cockpit Reference Guide for SOCATA TBM 700", P/N 190-01247-00, or any later version as applicable, must be permanently kept in the airplane with the Pilot's Operating Handbook.

### Post-MOD70-0335-34 (ESI-2000)

The Pilot's Guide for the Electronic Standby Indicator MODEL ESI-2000 P/N 0040-32500-01 Rev. E or any later version as applicable, must be permanently kept in the airplane with the Pilot's Operating Handbook.

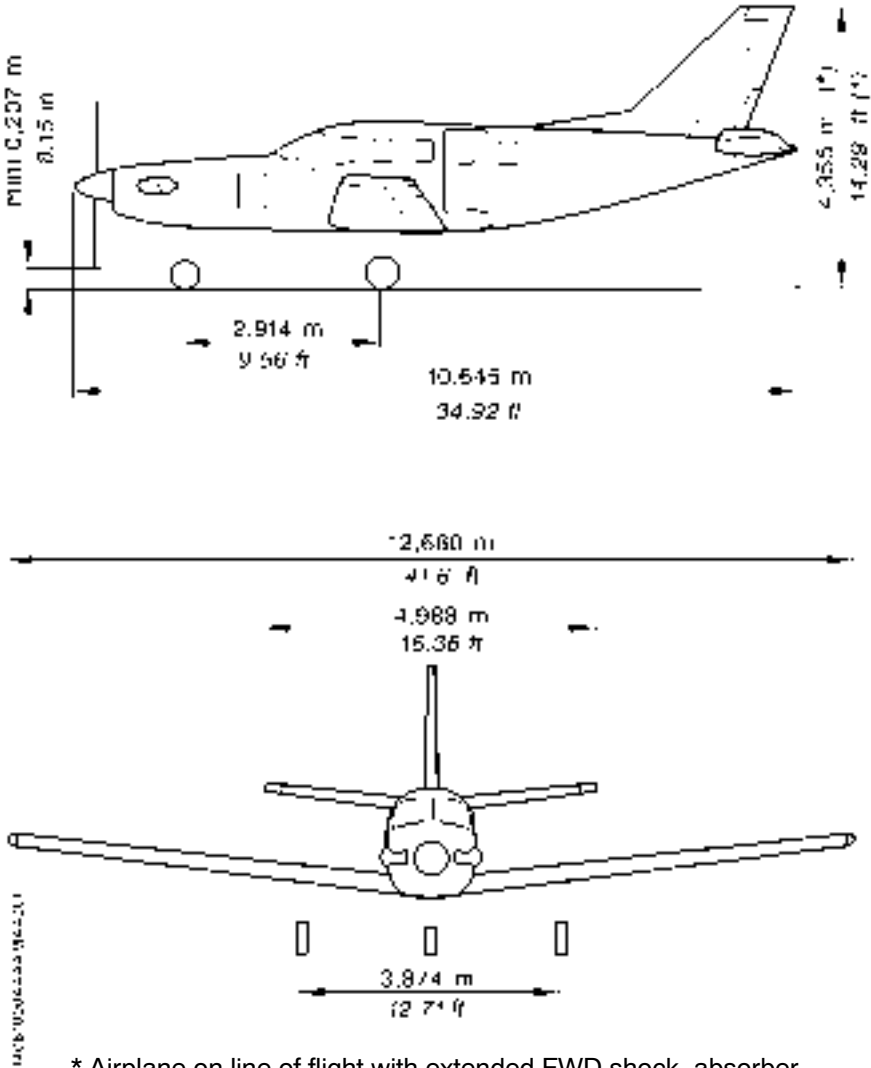
### All

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

The general for complex optional systems are given in Section 9, "Supplements" of the Pilot's Operating Handbook.

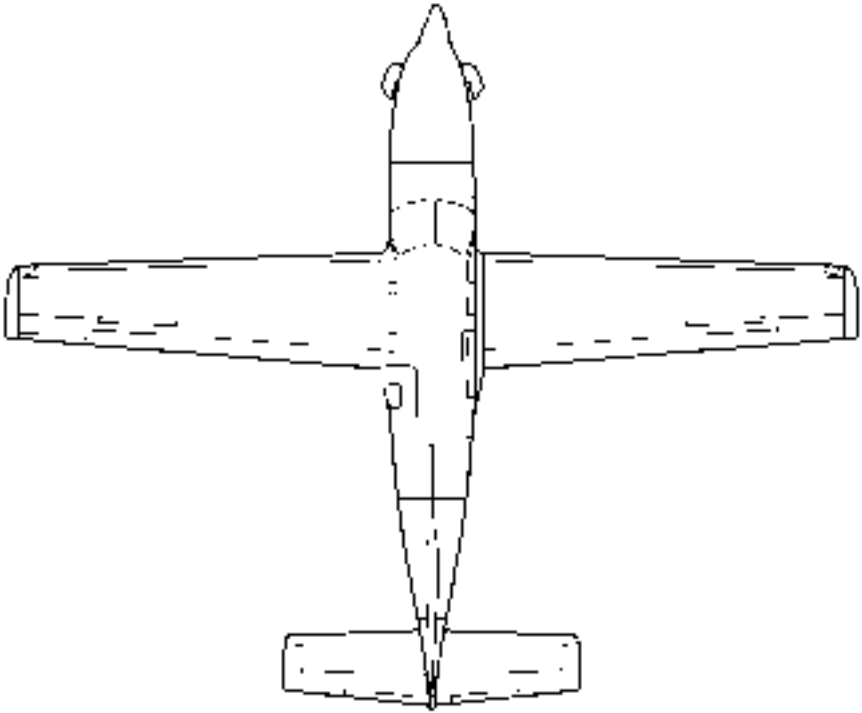
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## 1.2 - THREE VIEW DRAWING



\* Airplane on line of flight with extended FWD shock-absorber

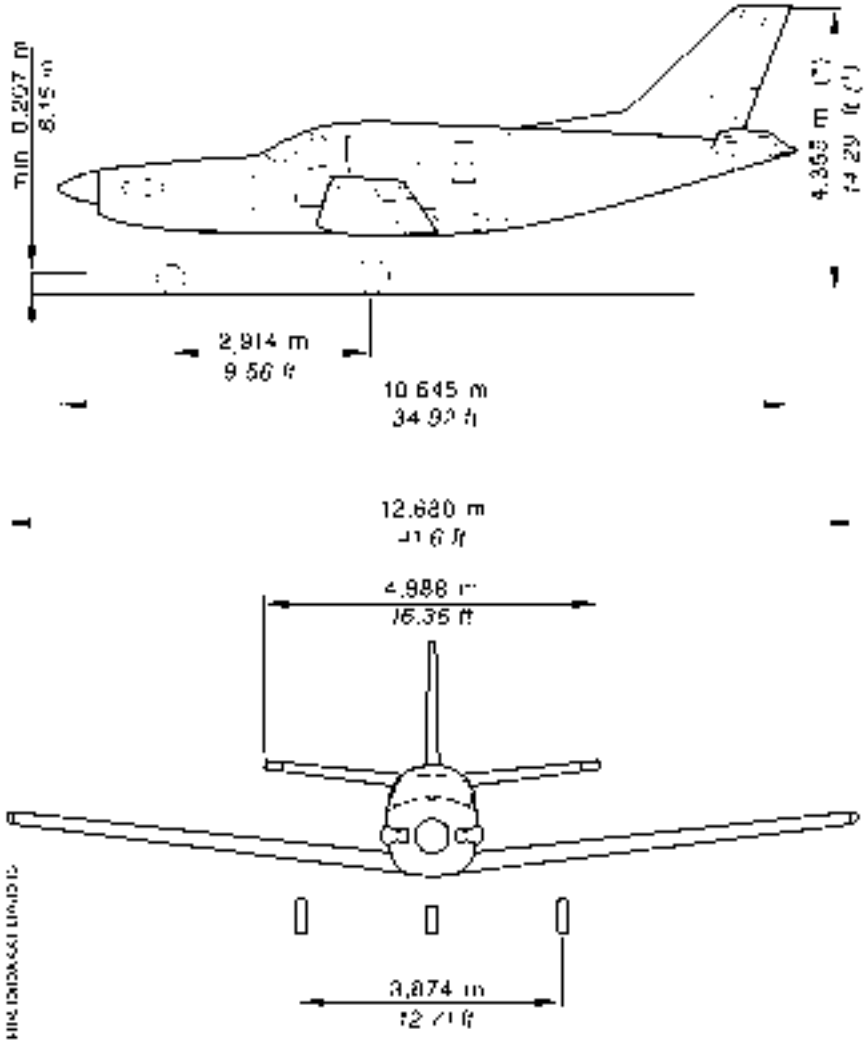
Figure 1.2.1 (1 / 2) - THREE VIEW DRAWING  
**TBM700A**



11/30/10 10:00 AM

Figure 1.2.1 (2 / 2) - THREE VIEW DRAWING  
**TBM700A**





\* Airplane on line of flight with extended FWD shock-absorber

Figure 1.2.1A (1 / 2) - THREE VIEW DRAWING  
**TBM700B**



## 1.3 - DESCRIPTIVE DATA

### ENGINE

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 64

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 : 700 SHP at 2000 RPM

### PROPELLER

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-E4N-3 / E9083S (K)

Number of blades : 4

Propeller diameter :  
Minimum : 90 inches (2.286 m)  
Maximum : 91 inches (2.311 m)

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

Propeller blade setting at 30 inches station

Low pitch : 21°  
Feathering : 86°  
Maximum reverse : - 11°

Propeller governor : 8210.007 WOODWARD

**FUEL**

Total capacity : 290.6 us gal (1100 Litres)  
 Total capacity each tank : 145.3 us gal (550 Litres)  
 Total usable : 281.6 us gal (1066 Litres)

**CAUTION**

**THE USED FUEL 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 consumption in 10 hour period : 0.14 qt / hr (0.13 l / hr)  
[0.3 lb/hr (0.136 kg/h)]

### CAUTION

#### DO NOT MIX DIFFERENT BRANDS OR TYPES

Nominal Viscosity	US Specification (US)	French Specification (FR)	English Specification (UK)	NATO Code
Type 5cSt	MIL-L-23699C Amdt1	MIL-L-23699C Amdt1	DERD 2499 Issue 1	O.156

Figure 1.3.2 - RECOMMENDED ENGINE OIL TYPES  
(Reference : Service Bulletin P & W - C. No. 14001)

## MAXIMUM CERTIFICATED WEIGHTS

Ramp : 6614 lbs (3000 kg)

Takeoff : 6579 lbs (2984 kg)

Landing : 6250 lbs (2835 kg)

Baggage weight (refer to Section 6 for cargo loading instructions) :

In FWD compartment (non pressurized) : 110 lbs (50 kg)

In aft compartment (pressurized) : 220 lbs (100 kg)

## STANDARD AIRPLANE WEIGHTS

### TBM700A :

Standard empty weight : 4050 lbs (1837 kg)

Maximum useful load : 2564 lbs (1163 kg)

TBM700B :

Standard empty weight : 4167 lbs (1890 kg)  
Maximum useful load : 2447 lbs (1110 kg)

**CABIN AND ENTRY DIMENSIONS**

Maximum cabin width : 3' 11.64" (1.21 m)  
Maximum cabin length : 13' 3.45" (4.05 m)  
Maximum cabin height : 4' (1.22 m)

TBM700A :

Number of cabin entries : 1  
Entry width : 2' 1.59" (0.65 m)  
Entry height : 3' 10.85" (1.19 m)

TBM700B :

Number of cabin entries : 1  
Entry width : 3' 6.52" (1.08 m)  
Entry height : 3' 10.85" (1.19 m)

**BAGGAGE SPACE ENTRY DIMENSIONS (NON PRESSURIZED)**

Access by L.H. side door  
Entry width : 1' 2.57" (0.37 m)  
Entry height : 1' 8.08" (0.51 m)

**SPECIFIC LOADINGS**

Wing loading : 34 lbs / sq.ft (165.8 kg / m<sup>2</sup>)  
Power loading : 9.4 lbs / SHP (4.26 kg / SHP)

## 1.4 - ABBREVIATIONS AND TERMINOLOGY

### METEOROLOGICAL TERMINOLOGY

- ISA** : *International standard atmosphere*
- OAT** : *Outside air temperature* is the free air static temperature. It is expressed in either degrees Celsius or degrees Fahrenheit.
- SAT** : *Static air temperature*
- QFE** : Atmospheric pressure at the airport reference point.
- QNH** : QFE value corrected according to the airport altitude.

*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

- KCAS** : *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.
- KIAS** : *Knots Indicated Airspeed* is the speed shown on the airspeed indicator and expressed in knots.
- KTAS** : *Knots True Airspeed* is the airspeed expressed in knots relative to undisturbed air which is KCAS corrected for altitude and temperature.

- $V_A$  : **Maneuvering Speed** is the maximum speed at which full or abrupt control movements may be used.
- $V_{FE}$  : **Maximum Flap Extended Speed** is the highest speed permissible with wing flaps in a prescribed extended position.
- $V_{LE}$  : **Maximum Landing Gear Extended Speed** is the maximum speed at which an airplane can be safely flown with the landing gear extended.
- $V_{LO}$  : **Maximum Landing Gear Operating Speed** is the maximum speed at which the landing gear can be safely extended or retracted.
- $V_{MO}$  : **Maximum Operating Speed** is the speed limit that may not be deliberately exceeded in normal flight operations.
- $V_R$  : **Rotation Speed** is the speed at which rotation is initiated during takeoff to achieve takeoff safety speed at screen height.
- $V_{SO}$  : **Stalling Speed or the minimum steady flight speed** at which the airplane is controllable in the landing configuration.
- $V_{S1}$  : **Stalling Speed or the minimum steady flight speed** obtained in a specific configuration.
- $V_x$  : **Best Angle of Climb Speed** is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.
- $V_y$  : **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>ADC</b>	: Air Data Computer
<b>AGL</b>	: Above ground level
<b>ALT. SEL.</b>	: Altitude selector
<b>ALTI</b>	: Altimeter
<b>AMP.</b>	: Ampere
<b>AP</b>	: Autopilot
<b>AUTO SEL</b>	: Automatic selector
<b>AUX BP</b>	: Auxiliary boost pump
<b>BAT</b>	: Battery
<b>BAT OVERHEAT</b>	: Battery overheat (only with cadmium–nickel battery)
<b>BRT</b>	: Brightness
<b>CAS</b>	: Crew Alerting System
<b>°C</b>	: Celsius degree
<b>CHiPS</b>	: Cable Harness Protection System
<b>CONT.</b>	: Control
<b>DIEGME</b>	: Diethylene glycol monomethyl ether
<b>DISC</b>	: Disconnect
<b>DN</b>	: Down
<b>ECS</b>	: Environmental control system
<b>EGME</b>	: Ethylene glycol monomethyl ether
<b>EMER</b>	: Emergency
<b>ENCOD. ALTI</b>	: Encoding altimeter
<b>ESHHP</b>	: Estimated shaft horsepower
<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>FIRE EXTING</b>	: Fire extinguisher
<b>FL</b>	: Flight level
<b>FPL</b>	: Flight Plan
<b>FOB</b>	: Fuel On Board
<b>ft</b>	: Feet
<b>ft/min</b>	: Feet per minute
<b>G</b>	: Green
<b>HI</b>	: High
<b>HP</b>	: High pressure
<b>hPa</b>	: Hectopascal
<b>hr</b>	: Hour

<b>HTR</b>	: Heater
<b>IGNIT</b>	: Ignition
<b>in</b>	: Inch
<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</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>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.</b>	: Mean aerodynamic chord
<b>MAIN GEN</b>	: Main generation
<b>MAN</b>	: Manual
<b>MAN OVRD</b>	: Manual override
<b>MAX RPM</b>	: Maximum revolutions per minute
<b>MFD</b>	: Multi-function Display
<b>MIN</b>	: Minimum
<b>min</b>	: Minute
<b>MLW</b>	: Maximum Landing Weight
<b>mm</b>	: Millimetre
<b>MRW</b>	: Maximum Ramp Weight
<b>MTOW</b>	: Max. Take Off Weight
<b>MXCR</b>	: Maximum cruise
<b>MZFW</b>	: Max. 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>qt</b>	: Quart (¼ us gal)
<b>QTY</b>	: Quantity
<b>R</b>	: Red or Right
<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>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>us gal</b>	: Gallon U.S
<b>V</b>	: Volt
<b>WARN</b>	: Warning
<b>W / S</b>	: Windshield

**RADIO - NAVIGATION ABBREVIATIONS**

<b>ADF</b>	: Automatic Direction Finder System
<b>ADI</b>	: Attitude Director Indicator
<b>AFCS</b>	: Automated Flight Control System
<b>AHRS</b>	: Attitude and Heading Reference System
<b>ATC</b>	: Transponder
<b>B RNAV</b>	: Basic aRea NAVigation
<b>CDI</b>	: Course Deviation Indicator
<b>COM</b>	: Communications Transceivers
<b>DME</b>	: Distance Measuring Equipment
<b>ELT</b>	: Emergency Locator Transmitter
<b>FMS</b>	: Flight Management System
<b>GPS</b>	: Ground 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>R NAV</b>	: Area NAVigation
<b>RNP</b>	: Required Navigation Performance
<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>WXR</b>	: Weather surveillance radar
<b>XPDR</b>	: Transponder



**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
us gal	3.785	Litre	Litre	0.264	us gal
lb	0.45359	kg	kg	2.2046	lb

Figure 1.5.1 - IMPERIAL AND U.S UNITS TO METRIC UNITS

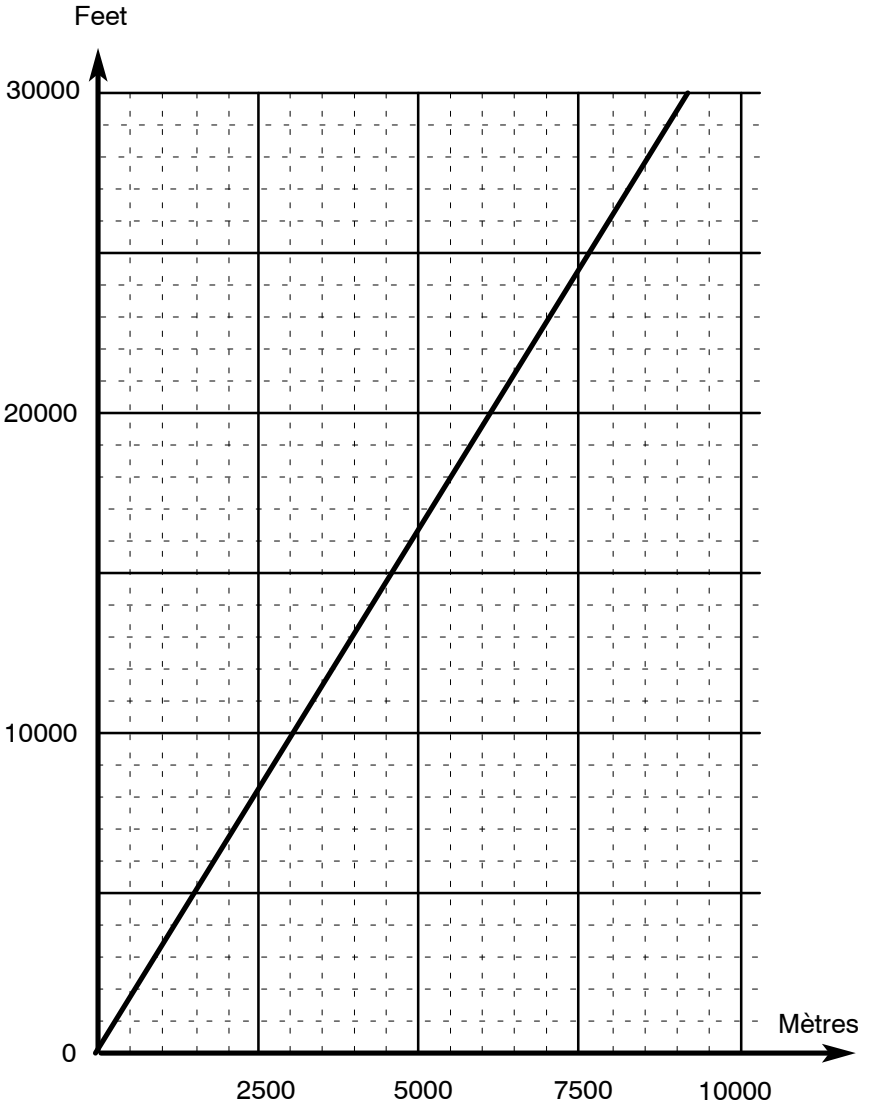


Figure 1.5.2 - FEET VERSUS METRES

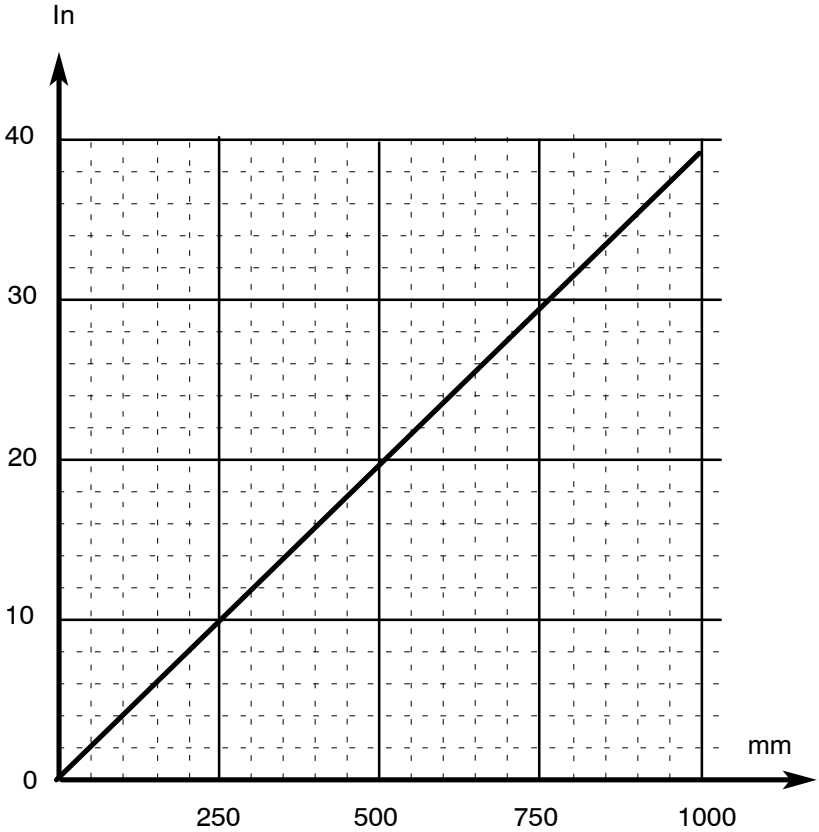


Figure 1.5.3 - INCHES VERSUS MILLIMETRES

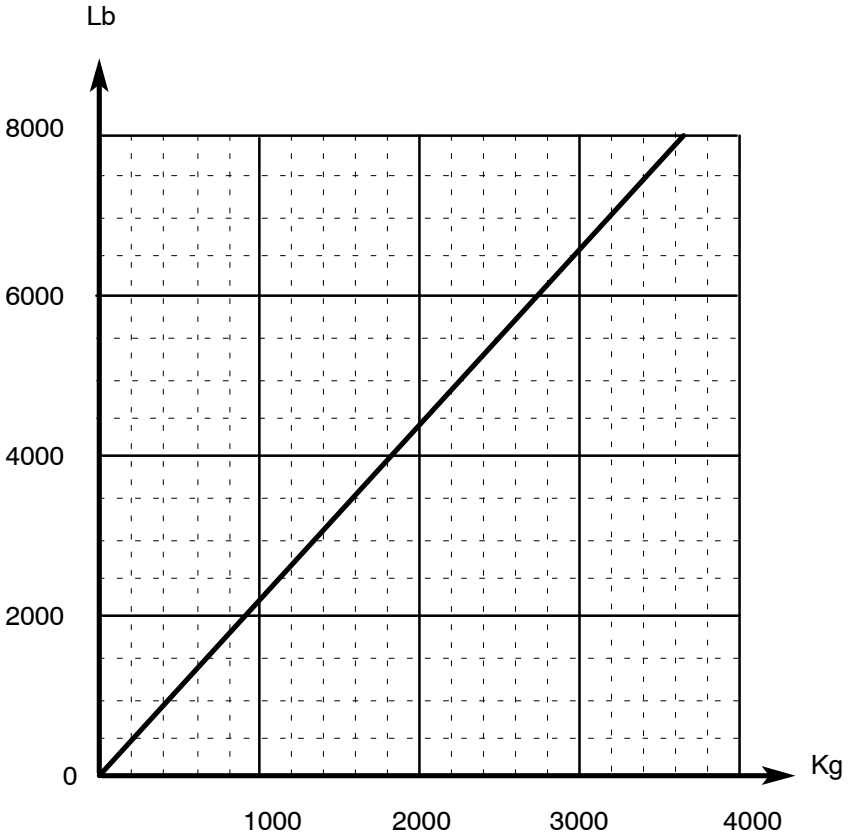


Figure 1.5.4 - POUNDS VERSUS KILOGRAMS

## 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

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

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## 2.1 - GENERAL

The TBM 700 airplane 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 Pilot's Operating Handbook.

The "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 700, No. 190-01247-00, or any later version as applicable, must be readily available to the pilot.

### Post-MOD70-0335-34 (ESI-2000)

The Pilot's Guide for the Electronic Standby Indicator MODEL ESI-2000 P/N 0040-32500-01 Rev. E or any later version as applicable, must be permanently kept in the airplane with the Pilot's Operating Handbook.

Departure into IMC is not authorized if the battery symbol is present with an amber battery symbol (less than 1 hour remaining), or an amber or red "X" over the battery symbol or a "CAL DUE" message by the battery symbol.

### All

This Section of the airplane Pilot's Operating Handbook 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 power plant and installed equipment.

The limitations for optional systems are given in Section 9, "Supplements" of the Pilot's Operating Handbook.

## 2.1A - GENERAL

TBM 700 airplane is certificated 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 Pilot's Operating Handbook.

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### All

This Section of the airplane Pilot's Operating Handbook 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 power plant 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 optional systems are given in Section 9, "Supplements" of the Pilot's Operating Handbook.

TBM 700 airplane is certificated under FAA Type Certificate N° A60 EU.

## 2.2 - AIRSPEED LIMITATIONS

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

	SPEED	KCAS	KIAS	REMARKS
$V_{MO}$	Maximum operating speed	271	266	Do not intentionally exceed this speed in normal flight category
$V_A$	Maneuvering speed	160	158	Do not make abrupt or full control movements above this speed
$V_{FE}$	Maximum flaps extended speed : landing configuration takeoff configuration	120 180	122 178	Do not exceed these speeds depending on flaps position
$V_{LO}$	Maximum landing gear operating speed : extension retraction	180 130	178 128	Do not extend or retract landing gear above this speed
$V_{LE}$	Maximum landing gear extended speed	180	178	Do not exceed this speed with landing gear extended
	Maximum inertial separator operating speed	205	200	No limitation when inertial separator is in fixed position

Figure 2.2.1 - AIRSPEED LIMITATIONS

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**2.3 - POWERPLANT LIMITATIONS****ENGINE**

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 64

Engine operating limits for takeoff and continuous operations :

Maximum power :

- 700 SHP : MAX TRQ 100 % at Np = 2000 RPM  
MAX TRQ 110 % at Np = 1800 RPM

Maximum power :

- Ng : 104.1 %
- Np : 2000 RPM

ITT :

- Anytime during engine operation :
  - . continuous : 800°C
- During start : 870°C for 20 seconds max.  
1000°C for 5 seconds max.

**CAUTION**

**WHEN NORMALLY OPERATING, REFER TO CHAPTER 5.7  
"ENGINE OPERATION" TABLES**

**OIL****CAUTION**

**DO NOT MIX DIFFERENT BRANDS OR TYPES OF OIL**

Maximum oil temperature : 104 °C

Oil pressure :

- Minimum : 60 psi
- Maximum : 135 psi

Oil capacity :

- System total capacity : 12.7 Quarts (12 Litres) (Oil cooler included)
- Usable capacity : 6 Quarts (5.7 Litres)

Oil grade (Specification) :

Nominal viscosity	US specification (US)	French specification (FR)	English specification (UK)	NATO code
Type 5cSt	MIL-L-23699C Amdt 1	MIL-L-23699C Amdt 1	DERD 2499 Issue 1	O.156

Figure 2.3.1 – ENGINE OIL RECOMMENDED TYPE  
(Reference : Service Bulletin P & W – C. No. 14001)

## FUEL

Fuel pressure :

- Minimum : 10 psi
- Maximum : 50 psi

Fuel limitations :

- 2 tanks : 145.3 us gal (550 Litres) each
- Total fuel : 290.6 us gal (1100 Litres)
- Usable fuel : 281.6 us gal (1066 Litres)
- Unusable fuel : 9 us gal (34 Litres)
- Maximum fuel unbalance : 25 us gal (95 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.*

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 2.3.2 - RECOMMENDED FUEL TYPES  
(Reference : Service Bulletin P & W - C. No. 14004)

## PROPELLER

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-E4N-3 / E9083S (K)

Propeller diameter :

Minimum : 90 inches (2.286 m)

Maximum : 91 inches (2.311 m)

Propeller blade setting at 30 inches station :

Low pitch : 21°

Feathering : 86°

Maximum reverse : - 11°

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## 2.4 - STARTER OPERATION LIMITS

Starter operation sequence is limited as follows :

if  $N_g \leq 30\%$  ..... 30 seconds

if  $N_g > 30\%$  ..... 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

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## 2.5 - WEIGHT AND C.G. LIMITS

### WEIGHT LIMITS

Maximum ramp weight (MRW) : 6614 lbs (3000 kg)

Maximum takeoff weight (MTOW) : 6579 lbs (2984 kg)

Maximum landing weight (MLW) : 6250 lbs (2835 kg)

Maximum zero fuel weight in wings (MZFW) : 6001 lbs (2722 kg)

Maximum baggage weight in FWD compartment (non pressurized) :  
110 lbs (50 kg)

Maximum baggage weight in aft compartment (pressurized) :  
220 lbs (100 kg)

### C.G. LIMITS - see Figure 6.4.2

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

Forward limits :

181.3 inches (4.604 m) aft of datum at 4409 lbs (2000 kg) or less (14 % of m.a.c)

183.6 inches (4.664 m) aft of datum at 6250 lbs (2835 kg) (18 % of m.a.c)

184.8 inches (4.694 m) aft of datum at 6579 lbs (2984 kg) (20 % of m.a.c)

Aft limits :

194.9 inches (4.951 m) aft of datum at all weights below 6250 lbs (2835 kg)  
(37 % of m.a.c.)

194.3 inches (4.936 m) aft of datum at 6579 lbs (2984 kg) (36 % of m.a.c.)

Reference datum : 118.1 inches (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.*

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## 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°.

**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) at 30000 ft pressure altitude  
Linear decrease between 8000 and 30000 ft

Battery operation limit : 70°C (158°F) corresponding to "BAT OVERHEAT" warning CAS MESSAGE appears (if Cadmium-Nickel battery installed)

### FLIGHT LOAD FACTOR LIMITS

Flaps up : - 1.5 ≤ n ≤ + 3.8 g  
Flaps down : - 0 ≤ n ≤ + 2.0 g

### CAUTION

**INTENTIONAL NEGATIVE LOAD FACTORS PROHIBITED**

## **GFC 700 AUTOPILOT LIMITS**

- During autopilot operation, a pilot with seat belt fastened must be seated at the left pilot position.
- The autopilot and yaw damper must be OFF during takeoff and landing.
- Do not engage autopilot below 1000 ft (300 m) above ground level in cruise or climb.
- Do not use autopilot in approach under 200 ft (60 m).
- Do not use autopilot for airspeeds below 85 KIAS.

### **NOTE :**

*Do not use the autopilot in descent below 2000 ft (600 m) AGL with a vertical speed in excess of 2000 ft/mn.*

## **G1000 GNSS (GPS/SBAS) NAVIGATION EQUIPMENT APPROVALS**

The Garmin GNSS navigation system installed in this aircraft is a GPS system with a Satellite Based Augmentation System (SBAS) comprised of two TSO-C145a Class 3 approved Garmin GIA 63Ws, TSO-C146a Class 3 approved Garmin GDU 1XXX Display Units, Garmin GA36 and GA37 antennas, and GPS software version 3.2 or later approved version. The Garmin GNSS navigation system in this aircraft is installed in accordance with AC 20-138A

The Garmin GNSS navigation system as installed in this aircraft complies with the requirements of AC 20-138A and AMC 20-28, is approved for navigation using GPS and SBAS (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) for IFR en route, terminal area, and non-precision approach operations (including those approaches titled "GPS", "or GPS", and "RNAV (GPS)" approaches). The Garmin GNSS navigation system installed in this aircraft is approved for approach procedures with vertical guidance including "LPV" (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) and "LNAV/VNAV", within the U.S. National Airspace System.

The aircraft is approved for Enroute and Terminal operations including RNAV5 / BRNAV and RNAV1 / PRNAV in accordance with JAA TGL--10, provided the FMS is receiving usable navigation information from one or more GPS receivers.

**G1000 GNSS (GPS/SBAS) NAVIGATION SYSTEM LIMITATIONS****NOTE :**

*Limitations are in bolded text for this section only.*

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

Navigation database is expected to be current for the duration of the flight.

**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 aircraft 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.

**For flight planning purposes, in areas where SBAS coverage is not available, the pilot must check RAIM availability.**

Within the United States, RAIM availability can be determined using the G1000 WFDE Prediction program, part number 006-A0154-01 (010-G1000-00) or later approved version with GARMIN GA36 and GA37 antennas selected, or 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, RAIM availability can be determined using the G1000 WFDE Prediction program or Europe's AUGER GPS RAIM Prediction Tool at <http://augur.ecacnav.com/augur/app/home>.

For other areas, use the G1000 WFDE Prediction program.

This requirement is not necessary if SBAS coverage is confirmed to be available along the entire route of flight.

The route planning and WFDE prediction program may be downloaded from the GARMIN G1000 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'.

**For flight planning purposes, operations within the U.S. National Airspace System on RNP and RNAV procedures when SBAS signals are not available, 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 for operations within European B-RNAV and P-RNAV airspace, if more than one satellite is scheduled to be out of service, then the availability of GPS integrity RAIM shall be confirmed for the intended flight (route and time).**

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

**For flight planning purposes, operations where the route requires Class II navigation the aircraft's operator or pilot-in-command must use the G1000 WFDE Prediction program to demonstrate that there are no outages on the specified route that would prevent the G1000 to provide primary means of Class II navigation in oceanic and remote areas of operation that requires (RNP-10 or RNP-4) capability.**

If the G1000 WFDE Prediction program indicates fault exclusion (FDE) availability will exceed 34 minutes in accordance with FAA Order 8400.12A for RNP-10 requirements, or 25 minutes in accordance with FAA Order 8400.33 for RNP-4 requirements, then the operation must be rescheduled when FDE is available.



**Both GPS navigation receivers must be operating and providing GPS navigation guidance to their respective PFD for operations requiring RNP-4 performance.**

North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace operations per AC 91-49 and AC 120-33 require both GPS/SBAS receivers to be operating and receiving usable signals except for routes requiring only one Long Range Navigation sensor. Each display computes an independent navigation solution based on the on-side GPS sensor. However, either display will automatically revert to the cross-side sensor if the on-side sensor fails or if the cross-side sensor is determined to be more accurate. A "BOTH ON GPS1" or "BOTH ON GPS2" message does not necessarily mean that one GPS has failed. Refer to the MFD AUX-GPS STATUS page to determine the state of the unused GPS.

**Manual entry of waypoints using latitude/longitude or place/bearing is prohibited.**

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.

**"GPS", "or GPS", and "RNAV (GPS)" instrument approaches using the G1000 System 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.**

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 G1000 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 are used.

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

**Pilots planning on flying an RNAV instrument approach must ensure that the Navigation database contains the planned RNAV Instrument Approach Procedure and that approach procedure must be loaded from the Navigation database into the FMS flight plan by its name.**

**IFR non-precision approach approval using the GPS/SBAS sensor is limited to published approaches within the U.S. National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.**

The navigation equipment required to join and fly an instrument approach procedure is indicated by the title of the procedure and notes on the IAP chart.

**Use of the GARMIN G1000 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 G1000 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.**

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.

## **SID/STAR**

The use of SIDs and STARs stored in GPS data base is only authorized, if the pilot has checked that GPS procedure corresponds to the one given in the official documentation (coordinates of various points and paths between points).

## **Instrument approach (Non precision approach)**

Use of the GPS to perform an instrument approach is possible, as long as this use is approved by the air navigation local authority for the approach in question.

Instrument approaches performed with the GPS must be executed according to approved approach procedures given in the GPS data base. The data base must be kept up to date and base data accuracy checked with regard to the official documentation, preferably before the flight.

- a) GPS/RNAV instrument approaches must be performed in GPS approach mode and the RAIM must be available at the final approach fix (FAF).
- b) Precision approaches (ILS, LOC, LOC-BC, MLS ...) must not be performed with the GPS.

Instrument approaches can only be performed, as long as used point coordinates are referenced with regard to WGS 84 system or an equivalent system.

## **SEVERE ICING CONDITIONS**

### **WARNING**

**SEVERE ICING MAY RESULT FROM ENVIRONMENTAL CONDITIONS OUTSIDE OF THOSE FOR WHICH THE AIRCRAFT 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 AIRCRAFT**

During flight, severe icing conditions that exceed those for which the aircraft 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 aircraft is in icing conditions.

Refer to the list of "Equipment required depending on type of operation" in this same chapter.

In any case of icing conditions, first refer to particular procedures described in Chapter 4.5 (normal procedures) and in case of unforeseen icing conditions, refer in addition to the emergency procedure described in Chapter 3.13.

## ■ 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.

## 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.**

### NOTE :

*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
  - Magnetic compass with built-in compensator
- 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 overheat (only with cadmium-nickel battery)
  - 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)
- Fuel pressure indicator
- 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
- Manual 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**

- Cabin altimeter
- Cabin vertical speed indication
- Cabin differential pressure indication
- Pressurization control valve
- Safety valve
- Pressurization control
- Maximum cabin altitude and pressure warning light

### **Flight into icing conditions**

- All equipment required for IFR flight
- Propeller deicing
- L.H. windshield deicing
- Airframe, stabilizer and elevator horn deicing
- Wing leading edge inspection light (if night flight)
- Stall warning deicing
- Inertial separator

### **ALTITUDE OPERATING LIMITS**

Maximum altitude : 30000 ft (9145 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 (refer to Section "List of equipment", § "List of critical RVSM equipment") is maintained in accordance with the airplane Maintenance Manual.

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

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

Moreover, the 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 CIRCUIT BREAKER USE LIMITS**

A tripped circuit 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.

## 2.7 - MISCELLANEOUS LIMITS

### SEATING LIMITS C.G.

#### From 1 to 6 seats :

- 2 seats at 180.5 inches (4.585 m) }
- 2 seats at 219.1 inches (5.565 m) } see NOTE 1
- 2 seats at 259.3 inches (6.585 m) }
  
- 2 seats at 180.5 inches (4.585 m) }
- 2 seats at 222.1 inches (5.641 m) } see NOTE 2
- 2 seats at 272.3 inches (6.916 m) }

### BAGGAGE LIMITS

- Front baggage at 128 inches (3.250 m)
- Rear baggage at 297.6 inches (7.560 m) } see NOTE 1
- Rear baggage at 303 inches (7.695 m) } see NOTE 2

#### NOTE 1 :

Valid S / N 1 to 23, 25, 28, 33 and 35, except airplanes equipped as a retrofit with modification Nr MOD 70-019-25.

#### NOTE 2 :

Valid S / N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes equipped as a retrofit with modification Nr MOD 70-019-25.

### MINIMUM CREW

- One pilot

### MAXIMUM OCCUPANCY

The number of persons on board is limited by approved seating configuration installed (6 or 7 seats) but must not exceed seven, including the pilot.

### USE OF DOORS

Flight with door open or ajar is prohibited.

### CHEMICAL TOILET CABINET (if installed)

The cabinet must be stowed during take-off and landing. No baggage on the top of the cabinet for the whole flight.

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## 2.8 - MARKINGS

■ Pre-MOD70-0335-34 (ESI-2000)

### AIRSPEED INDICATOR

Airspeed indicator markings and their color code significance are shown in Figure 2.8.1.

MARKING	KIAS (Value or range)	SIGNIFICANCE
Red line	Below 60	/
White line	60 - 122	Full Flap Operating Range Lower limit is maximum weight V <sub>SO</sub> in landing configuration.
Red sector	Above 266	266 = VMO

Figure 2.8.1 - AIRSPEED INDICATOR MARKINGS

Post-MOD70-0335-34 (ESI-2000)

### INDICATED AIRSPEED

Indicated airspeed markings and their color code significance are shown in Figure 2.8.1A.

MARKING	KIAS (Value or range)	SIGNIFICANCE
Red line	Below 60	/
White line	60 - 122	Full Flap Operating Range Lower limit is maximum weight V <sub>SO</sub> in landing configuration.
Green line	Above 122	Normal operating airspeed range
Red line	Above 266	266 = VMO

Figure 2.8.2 - IAS AWARENESS BAR CUES

■ All

**PRESSURIZATION**

MARKING	VALUE	SIGNIFICANCE
Red line	6.2 psi	Cabin $\Delta$ P limit

Figure 2.8.3 - PRESSURIZATION MARKING

## ENGINE INSTRUMENTS

Engine instrument markings and their color code significance are shown in Figure 2.8.4.

INSTRUMENT	Red Line or arc ----- Minimum Limit	Yellow Line or Arc ----- Caution Range	Green 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 100 psi	100 to 135 psi	135 psi
Fuel pressure	0 to 5 psi	---	10 to 50 psi	50 psi
Generator RPM (Ng)	---	---	51 to 104 %	104 %
Propeller RPM (Np)	---	450 to 1000 RPM	1600 to 2000 RPM	2000 RPM
ITT	---	800 to 1090 °C (1470 to 1992 °F)	400 to 800 °C (750 to 1470 °F)	800 °C (1490 °F) normal limit ----- 1090 °C (1992 °F) (red triangle) absolute limit
Torque (TRQ)	---	100 %	0 to 110 % (arc ½ thick from 100 to 110 %)	110 %

Figure 2.8.4 – ENGINE INSTRUMENT MARKINGS

■ **SUCTION GAGE** [Pre-MOD70-0335-34 (ESI-2000)]

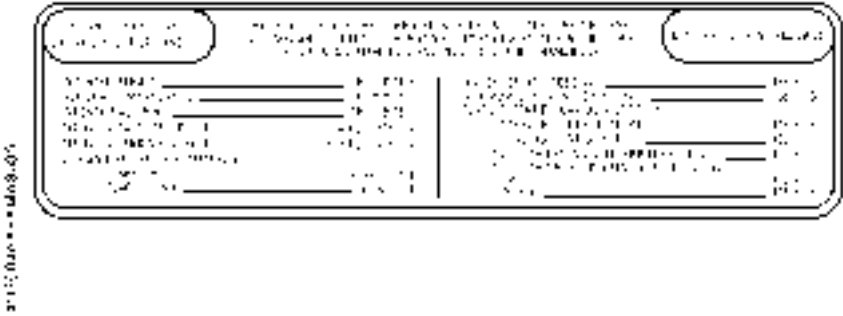
MARKING	CORRESPONDING VALUE
Green	Normal operating from 4.4 to 5.2 in.Hg
Red lines	at 4.4 and 5.2 in.Hg

Figure 2.8.5 - SUCTION GAGE MARKINGS



## 2.9 - PLACARDS

- (1) Under L.H. front side window - Valid S / N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes equipped as a retrofit with modification Nr MOD 70-019-25 :



- (2) Calibration chart on compass and on windshield post

**WARNING**

**TURN L AND R WINDSHIELD  
DE-ICE OFF BEFORE  
COMPASS READING**

For	N	30	60	E	120	150
Steer						
For	S	210	240	W	300	330
Steer						
DATE :				RADIO ON		

- (3) On rear baggage compartment bottom bulkhead (pressurized)

**100 kg - 220 lbs MAXIMUM**

**IT IS THE PILOT'S RESPONSIBILITY TO  
CHECK THAT ALL THE BAGGAGES ARE  
PROPERLY SECURED**

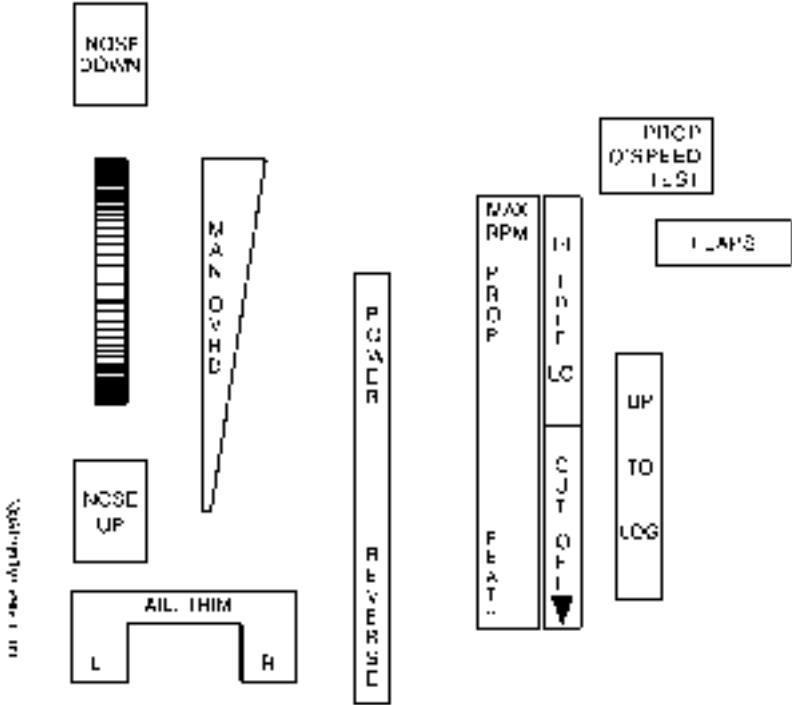
**FOR LOADING INSTRUCTIONS  
SEE "WEIGHT AND BALANCE DATA"  
IN PILOT'S OPERATING HANDBOOK**

- (4) On FWD baggage compartment door frame (non pressurized)

**50 kg - 110 lbs MAXIMUM**

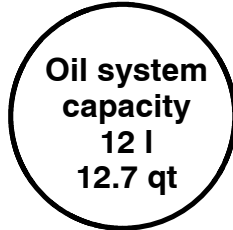
**FOR LOADING INSTRUCTIONS  
SEE "WEIGHT AND BALANCE DATA"  
IN PILOT'S OPERATING HANDBOOK**

(5) Under GCU 475 control unit on pedestal console

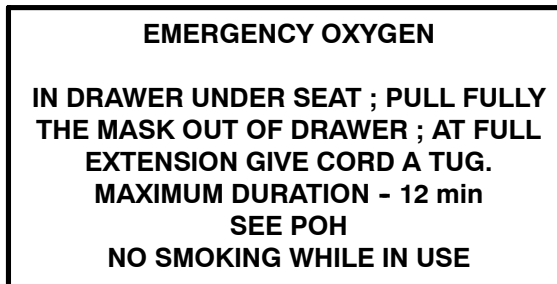




- (8) On internal face of L.H. engine cowling



- (9) On R.H. side, at front seat level and under seating of intermediate and rear passenger seats, which are fitted with oxygen



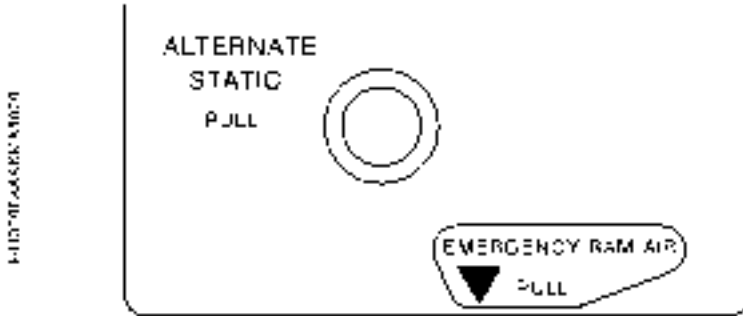
- (10) On landing gear emergency control access door



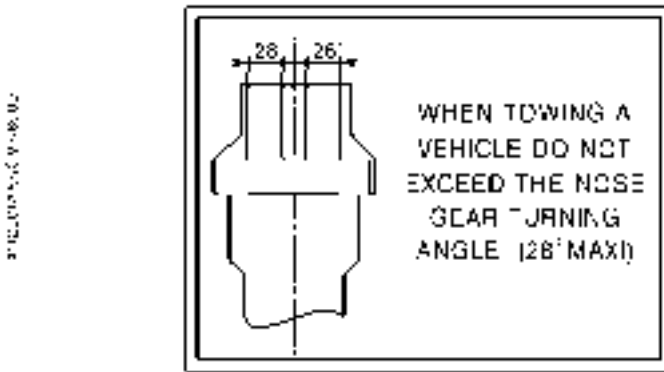
- (11) On rear passenger's table casing (if installed)



(12) Under R.H. control wheel



(13) On nose gear door



(14) On nose gear leg

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

(15) On main gear leg

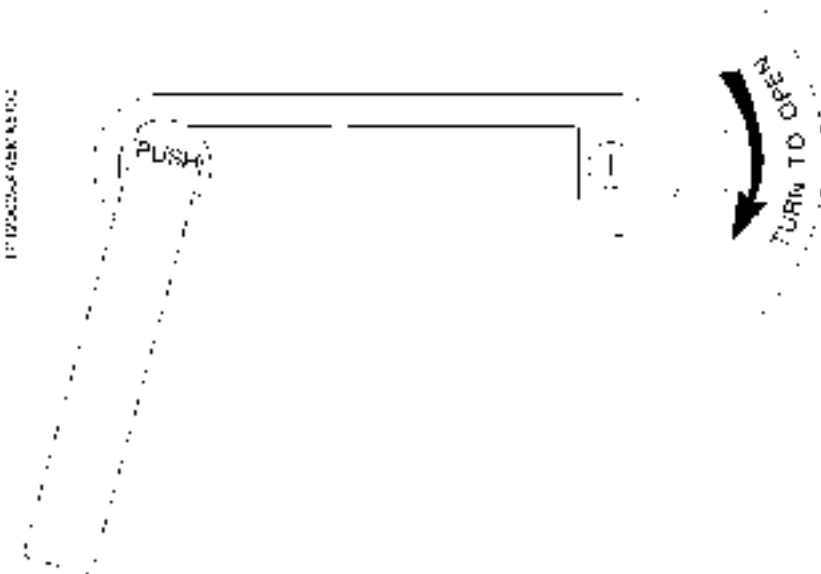
**MAIN LANDING GEAR  
TIRE PRESSURE : 8,25 bar  
120 psi**

(16) On engine cowling, in front of baggage compartment door

**EXTERNAL POWER  
28 VOLTS D.C. NOMINAL  
800 AMPS  
STARTING CAPACITY MIN  
DO NOT EXCEED 1400 AMPS**

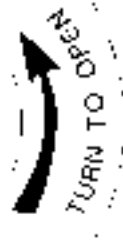
(17) **TBM700A** On access door - External side

**TBM700B** On "pilot" door - External side (if installed)



(17) **TBM700B** On access door - External side

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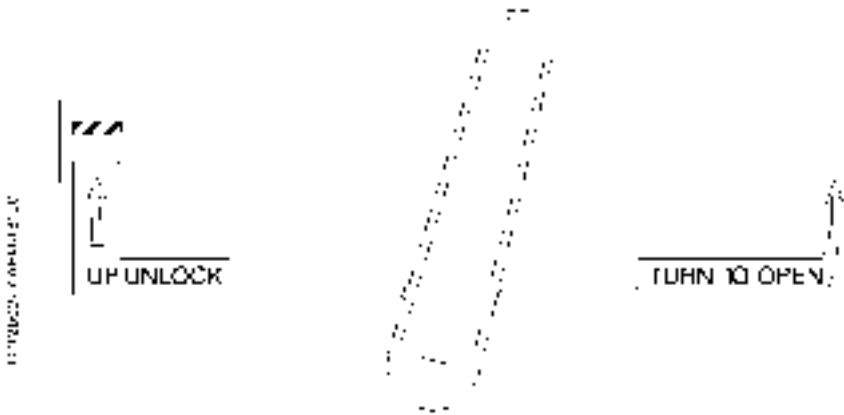
(18) **TBM700B** On outer fuselage skin aft of access door and in the cabin forward of access door

11111111111111111111





- (19) **TBM700A** from S / N 50, plus airplanes equipped as a retrofit with modification No. MOD70-019-25  
On access door - Internal side



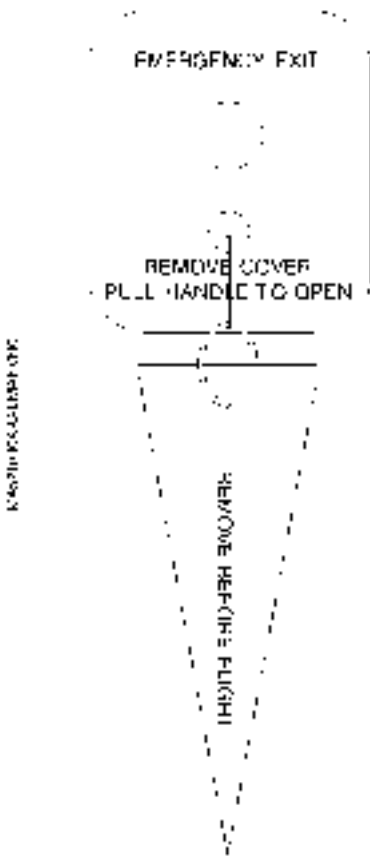
- (19) **TBM700B** On access door - Internal side



- (20) From S / N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes equipped as a retrofit with modification No. MOD 70-019-25  
On emergency exit handle

Marking on cover

Marking on handle



(21) **TBM700A** On external side of lower half-door

**TBM700B** On last step of stairs

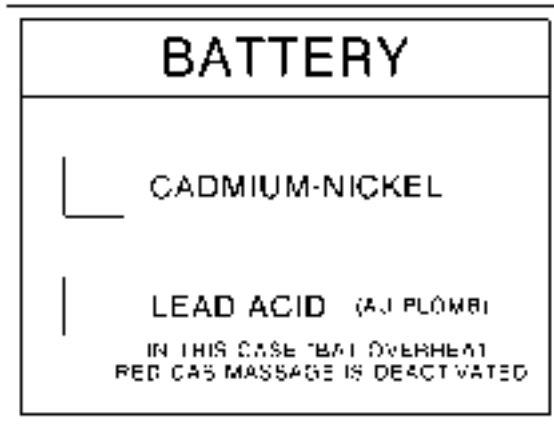
**STAIRS MAX LOAD : ONE PERSON**

(22) **TBM700B** On R.H. access door jamb

**DO NOT USE  
HAND RAIL  
TO RETRACT  
OR STOW  
STAIRS**

(23) On internal face of L.H. engine cowl

012203-01-01-0000



(24) On the potty seat curtain (if installed), on pilot's side

**CURTAIN MUST BE STOWED FOR TAKE-OFF AND LANDING**



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# SECTION 3

## EMERGENCY PROCEDURES

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### **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 which require pilot's operating handbook supplements are provided in Section 9 "Supplements".

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

Some emergency procedures are a part of pilot basic training. Although these emergencies are discussed here, this information is not intended to replace such training, but only to provide a source of reference and review. This information also provides failure procedures which are not the same for all airplanes.



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

### **Alarm system recall**

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

The CAS includes **red** messages indicating failures which require an immediate action from the pilot, and **amber** messages indicating failures or discrepancies which require an action as soon as practical.

Red or amber failure warnings are coupled with the lighting of

- a flashing red indicator  + aural warning
- or - a fixed amber indicator  + aural warning

Both indicators 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.

## 3.2 - REJECTED TAKEOFF PROCEDURE

*Following an engine failure, refer to Chapter 3.3, Paragraph "ENGINE FAILURE AT TAKEOFF BEFORE ROTATION".*

*For any other reason :*

- 1 - Power lever ..... **IDLE**
- 2 - Reverse ..... **AS REQUIRED**
- 3 - Braking ..... **AS REQUIRED**

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

- 4 - Power lever ..... **IDLE**
- 5 - Condition lever ..... **CUT OFF**
- 6 - Tank selector ..... **OFF**
- 7 - CRASH lever ..... **PULL DOWN**

*Evacuate if necessary, after the airplane has come to a stop.*

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### 3.3 - ENGINE FAILURES

#### ENGINE FAILURE AT TAKEOFF BEFORE ROTATION

1 - Power lever ..... **IDLE**

2 - Braking ..... **AS REQUIRED**

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

3 - Condition lever ..... **CUT OFF**

4 - Tank selector ..... **OFF**

5 - CRASH lever ..... **PULL DOWN**



## 3.3 - ENGINE FAILURES

### ENGINE FAILURE DURING FLIGHT

- 1 - If AP engaged :  
    "AP / TRIM DISC INT" push-button ..... **PRESSED**
- 2 - Power lever ..... **IDLE**
- 3 - Propeller governor lever ..... **FEATHER**
- 4 - Condition lever ..... **CUT OFF**
- 5 - Remaining fuel ..... **CHECK**
- 6 - Tank selector ..... **SWITCH TANKS**
- 7 - "AUX BP" switch  
    and fuel pressure ..... **CHECK / CORRECT**
- 8 - Air start in flight (Refer to Chapter 3.4)
- 9 - In case of high altitude (above 12000 ft), undertake an  
    EMERGENCY DESCENT (Refer to Chapter 3.6)
- 10 - If air start not successful, perform a FORCED LANDING (Refer to  
    Chapter 3.7)



3.3 - ENGINE FAILURES

**OIL PRESSURE DROP**

RED CAS MESSAGE "OIL PRESS" ON  
OR

AMBER CAS MESSAGE "OIL PRESS" ON

Indicates that oil pressure is below 60 psi

1 - Oil pressure indicator ..... **CHECK**

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

2 - Shorten the flight and monitor

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

3 - Failure is confirmed

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 ; REDUCE  
POWER TO THE MINIMUM NECESSARY, LAND AS SOON  
AS PRACTICAL**

***If engine loses power :***

4 - Power lever ..... **IDLE**

5 - Propeller governor lever ..... **FEATHER**

6 - Condition lever ..... **CUT OFF**

Perform a FORCED LANDING (Refer to Chapter 3.7).

## 3.3 - ENGINE FAILURES

**ENGINE REGULATION DISCREPANCY,  
POWER LOSS,  
POWER LEVER CONTROL LOSS (1/2)**

- 1 - If circumstances allow :  
Power lever ..... **IDLE**
- 2 - Confirm engine still running
- 3 - Check that no parameter exceeds allowed values
- 4 - "MAN OVRD" control ..... **ACTUATED**  
**progressively forward**  
**(Adjust power necessary to continue flight)**

If the available power is weak, extend the landing gear only on a glide path in final approach and extend full flaps only in short final. Do not perform a go-around.

**CAUTION**

**IN "MANUAL OVERRIDE" ENGINE IS NEITHER  
PROTECTED AGAINST SLAM ACCELERATIONS, NOR  
AGAINST MAXIMUM SPEED OVERTHOOTING.  
AVOID RAPID CONTROL MOVEMENTS AND MANAGE  
ENGINE PARAMETERS**

**CAUTION**

**IN SOME CASES, WHEN "MANUAL OVERRIDE"  
CONTROL IS USED, THE AVAILABLE POWER MAY  
NOT BE SUFFICIENT TO ENSURE A GO-AROUND IN  
LANDING CONFIGURATION, IN PARTICULAR IF THE  
WEIGHT IS NEAR THE MAXIMUM WEIGHT**

- 5 - Continue flight, SHORTEN if possible



3.3 - ENGINE FAILURES

**ENGINE REGULATION DISCREPANCY,  
POWER LOSS,  
POWER LEVER CONTROL LOSS (2/2)**

- 6 - Perform a normal landing WITHOUT REVERSE
- 7 - Braking ..... **AS REQUIRED**  
*If minimum power obtained is excessive :*
  - 1 - Reduce airspeed by setting airplane in nose-up attitude at IAS < 178 KIAS
  - 2 - "INERT SEP" switch ..... **ON**
  - 3 - If ITT > 800°C :  
"INERT SEP" switch ..... **OFF**
  - 4 - Landing gear control ..... **DN**
  - 5 - Flaps ..... **TO**
  - 6 - Establish a long final or an ILS approach respecting IAS < 178 KIAS
  - 7 - When runway is assured :  
Condition lever ..... **CUT OFF**
  - 8 - Propeller governor lever ..... **FEATHER**  
**if necessary to extend trajectory**
  - 9 - Flaps ..... **LDG as required**  
**(at IAS < 122 KIAS)**
- 10 - Land normally WITHOUT REVERSE
- 11 - Braking ..... **AS REQUIRED**

## 3.3 - ENGINE FAILURES

**GOVERNOR REGULATION CONTROL NOT OPERATING**

May indicate a rupture of the linkage of the governor control.

- 1 - Continue the flight.
- 2 - If  $N_p < 2000$  RPM, do not perform a go-around and do not use the reverse.

In that case, the go-around performance and the reverse efficiency might be lower than expected. The airplane repair is mandatory before any other flight.

### 3.3 - ENGINE FAILURES

#### **EXCESSIVE PROPELLER ROTATION SPEED**

Indicates :

- a propeller governor failure

In that case, the propeller overspeed limiter will limit initially the rotation speed to 2100 RPM approximately.

- or a propeller governor and overspeed limiter failure

In that case, only the torque limiter operates to limit the power. However, the pilot intervention is necessary to maintain  $N_p \leq 2000$  RPM. The propeller reducer is designed for a max.  $N_p$  of 2200 RPM.

- 1 - Reduce the power and the aircraft speed to avoid propeller rotation speeds higher than 2000 RPM.

- 2 - Land as soon as possible.

- 3 - Do not perform a go-around.

*A go-around would damage the propeller reducer.*

The airplane repair is mandatory before any other flight.

## 3.3 - ENGINE FAILURES

**RED CAS MESSAGE "ITT" ON****A - During engine start :**

Indicates :

ITT > 1000° C

1000° C > ITT > 870° C for more than 5 seconds

870° C > ITT > 800° C for more than 20 seconds

***If the limits previously mentioned are exceeded :***

- 1 - Stop the starting procedure.
- 2 - Record the engine parameters displayed and OAT conditions.
- 3 - Cancel the flight, inform maintenance department.

**B - After engine start :**

Indicates that ITT has been higher than 800° C more than 2 seconds :

- 1 - Reduce power according to "Engine Operation" tables - Chapter 5.7.

***If ITT remains higher than 800° C :***

- 1 - Reduce power to maintain ITT < 800° C.
- 2 - Shorten the flight.
- 3 - Record the airplane and engine parameters displayed in case of overtemperature.
- 4 - Inform maintenance department at the end of the flight.

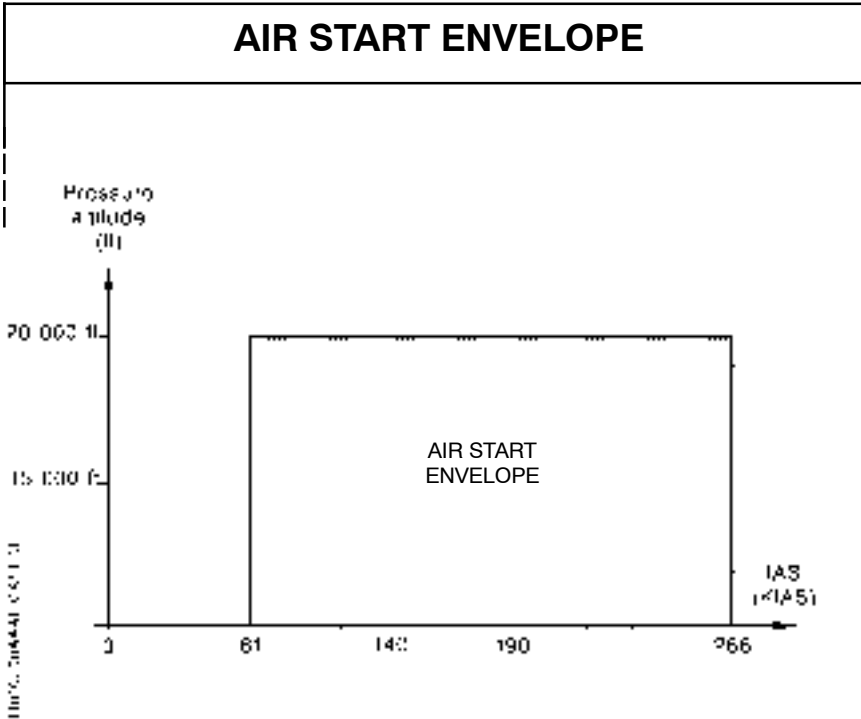
3.3 - ENGINE FAILURES

**ENGINE DOES NOT STOP ON GROUND**

If the engine does not stop when the condition lever is set to CUT OFF, proceed as follows :

- 1 - "AP TRIMS" MASTER switch ..... **OFF**
- 2 - "AVIONICS" MASTER switch ..... **OFF**
- 3 - "INT LIGHTS" panel  
All switches ..... **OFF**
- 4 - "EXT LIGHTS" panel  
All switches ..... **OFF**
- 5 - "ECS" panel  
All switches ..... **OFF**
- 6 - Tank selector ..... **OFF**  
Wait for engine stop due to lack of fuel in the pipes
- 7 - "GENERATOR" selector ..... **OFF**
- 8 - "SOURCE" selector ..... **OFF**
- 9 - CRASH lever ..... **PULL DOWN**
- 10 - Inform the maintenance department

**3.4 - AIR START**



Air start may be attempted outside of the envelope. However, above 20000 ft or with Ng < 13 %, ITT tends to increase during start and prudence is recommended.

Figure 3.4.1 - AIR START ENVELOPE



3.4 – AIR START

**AIR START WITH STARTER (1/2)**

**CAUTION**

**THE STARTER CANNOT OPERATE IF THE "GENERATOR" SELECTOR IS ON "ST-BY"**

**CAUTION**

**IGNITION IS NOT AVAILABLE IF THE "ESS BUS TIE" SWITCH IS KEPT "EMER"**

*NOTE :*

*The "AVIONICS MASTER" switch may be ON.*

1 - "BLEED VALVE" switch ..... **OFF**

**CAUTION**

**"BLEED VALVE" SWITCH ON MAY CAUSE OVERTEMPERATURE OR ABNORMAL ACCELERATION**

2 - "FREON" or "AIR COND" switch (if installed) ..... **OFF**

3 - If possible, fly to an altitude < 20000 ft

4 - Air start envelope ..... **CHECKED**

5 - Electric consumption ..... **REDUCE**

6 - Power lever ..... **IDLE**

7 - Propeller governor lever ..... **FEATHER**

8 - Condition lever ..... **CUT OFF**

9 - Tank selector ..... **CHECK**

10 - "AUX BP" fuel switch ..... **ON**



## 3.4 – AIR START

**AIR START WITH STARTER (2/2)**

- |                                     |  |
|-------------------------------------|--|
| 11 - "IGNITION" switch .....        | <b>AUTO or ON</b>                          |
| 12 - "STARTER" switch .....         | <b>ON</b>                                  |
| 13 - Condition lever .....          | <b>LO / IDLE</b><br><b>when Ng ~ 13 %</b>  |
| 14 - ITT and Ng .....               | <b>MONITOR</b>                             |
| 15 - When Ng ~ 50 % steady .....    | <b>STARTER OFF</b><br><b>IGNITION AUTO</b> |
| 16 - Condition lever .....          | <b>HI / IDLE</b>                           |
| 17 - Propeller governor lever ..... | <b>MAX. RPM</b>                            |
| 18 - Power lever .....              | <b>TESTED and AS REQUIRED</b>              |
| 19 - Electrical equipment .....     | <b>AS REQUIRED</b>                         |
| 20 - "AUX BP" fuel switch .....     | <b>AUTO</b>                                |
| 21 - "BLEED VALVE" switch .....     | <b>AS REQUIRED</b>                         |

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### 3.5 - FIRE AND SMOKE

#### ENGINE FIRE ON GROUND

Symptoms : ITT increasing, red warning CAS message "ITT" ON, smoke, ...

- 1 - Power lever ..... **IDLE**
- 2 - Condition lever ..... **CUT OFF**
- 3 - "BLEED VALVE" switch ..... **OFF**
- 4 - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- 5 - Brakes ..... **AS REQUIRED**
- 6 - Tank selector ..... **OFF**
- 7 - Warn ground assistance, if necessary
- 8 - CRASH lever ..... **PULL DOWN**
- 9 - EVACUATE as soon as possible

#### CABIN FIRE ON GROUND

- 1 - Power lever ..... **IDLE**
- 2 - Condition lever ..... **CUT OFF**
- 3 - Brakes ..... **AS REQUIRED**
- 4 - Warn ground assistance, if necessary
- 5 - CRASH lever ..... **PULL DOWN**
- 6 - Cabin extinguisher (if installed) ..... **AS REQUIRED**
- 7 - EVACUATE as soon as possible

3.5 - FIRE AND SMOKE

**ENGINE FIRE IN FLIGHT**

Symptoms : ITT increasing, red warning CAS message "ITT" ON, smoke, ...

- 1 - Power lever ..... **IDLE**
- 2 - Propeller governor lever ..... **FEATHER**
- 3 - Condition lever ..... **CUT OFF**
- 4 - "AUX BP" fuel switch ..... **OFF**
- 5 - Tank selector ..... **OFF**
- 6 - "BLEED VALVE" switch ..... **OFF**
- 7 - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- 8 - In case of high altitude (above 12000 ft), undertake an EMERGENCY DESCENT (Refer to Chapter 3.6)
- 9 - Perform a FORCED LANDING (ENGINE CUT OFF) (Refer to Chapter 3.7)

**WARNING**

**AFTER ENGINE FIRE, DO NOT ATTEMPT AN AIR START**

## 3.5 - FIRE AND SMOKE

### CABIN ELECTRICAL FIRE OR SMOKE DURING FLIGHT (1/2)

*If the origin is known :*

1 - Oxygen and goggles (if installed) ..... **USE AS REQUIRED**  
(pilot and passengers)

2 - Defective equipment  
Corresponding circuit breaker ..... **PULL**

*Descend quickly below 12000 ft*

3 - Using the on board extinguisher (if installed), **EXTINGUISH** fire if necessary

4 - Smoke elimination  
(if necessary) ..... **UNDERTAKE PROCEDURE**  
(Refer to this chapter)

5 - **LAND** as soon as possible

*If the origin is unknown :*

1 - Oxygen and goggles (if installed) ..... **USE AS REQUIRED**  
(pilot and passengers)

2 - "CABIN FAN" switch ..... **OFF**

3 - Non essential equipment ..... **OFF**

4 - Smoke elimination  
(if necessary) ..... **UNDERTAKE PROCEDURE**  
(Refer to this chapter)

*If smoke or fire stops :*

*LAND as soon as possible.*



3.5 - FIRE AND SMOKE

**CABIN ELECTRICAL FIRE OR  
SMOKE DURING FLIGHT (2/2)**

*If smoke or fire persists :*

- 5 - "SOURCE" selector ..... **OFF**
- 6 - "GENERATOR" selector ..... **OFF**
- 7 - Fire ..... **EXTINGUISH if necessary with the  
on board extinguisher (if installed)**
- 8 - All "pull-off" type circuit-breakers ..... **PULL**
- 9 - All electrical equipment ..... **CUT OFF**
- 10 - "SOURCE" selector ..... **BAT**
- 11 - "GENERATOR" selector ..... **MAIN**
- 12 - Necessary circuit-breakers ..... **ENGAGE  
one after the other checking for  
possible fire or smoke**
- 13 - Necessary electrical equipment ..... **ON  
one after the other checking for  
possible fire or smoke**
- 14 - Defective equipment  
Corresponding circuit breaker ..... **PULL**
- 15 - Not affected essential equipment ..... **ON as required**
- 16 - LAND as soon as possible

## 3.5 - FIRE AND SMOKE

### SMOKE ELIMINATION

- 1 - Smoke origin ..... **IDENTIFY**
- 2 - Oxygen and goggles (if installed) ..... **USE AS REQUIRED  
(pilot and passengers)**
- 3 - If smoke persists, undertake an EMERGENCY DESCENT (Refer to Chapter 3.6)
- 4 - "BLEED VALVE" switch ..... **OFF**
- 5 - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- 6 - "DUMP" control ..... **ACTUATE**  
Wait until the differential pressure drops
- 7 - "RAM AIR" control knob ..... **PULL**  
If smoke increases ..... **PUSH**
- 8 - LAND as soon as possible



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**3.6 - EMERGENCY DESCENTS**

**PROCEDURE IN SMOOTH AIR**

- 1 - Power lever ..... **IDLE**
- 2 - Oxygen ..... **If necessary**
- 3 - Propeller governor lever ..... **MAX. RPM**
- 4 - Flaps ..... **UP**
- 5 - Landing gear ..... **UP**
- 6 - Speed ..... **V<sub>MO</sub> = 266 KIAS**

**PROCEDURE IN ROUGH AIR OR IN CASE OF STRUCTURE PROBLEM**

- 1 - Power lever ..... **IDLE**
- 2 - Oxygen ..... **If necessary**
- 3 - Propeller governor lever ..... **MAX. RPM**
- 4 - Reduce speed ..... **IAS ≤ 178 KIAS**
- 5 - Landing gear ..... **DN**
- 6 - Flaps ..... **UP**
- 7 - Keep ..... **IAS ≤ 178 KIAS**

3.6 - EMERGENCY DESCENTS

<b>GLIDE DISTANCE AND OPTIMUM SPEED</b>	
<b>Configuration</b>	
1 - Flaps .....	<b>UP</b>
2 - Landing gear .....	<b>UP</b>
3 - Propeller governor lever .....	<b>FEATHER</b>
4 - Optimum speed (L / D ratio = 10) .....	<b>IAS = 110 KIAS</b>

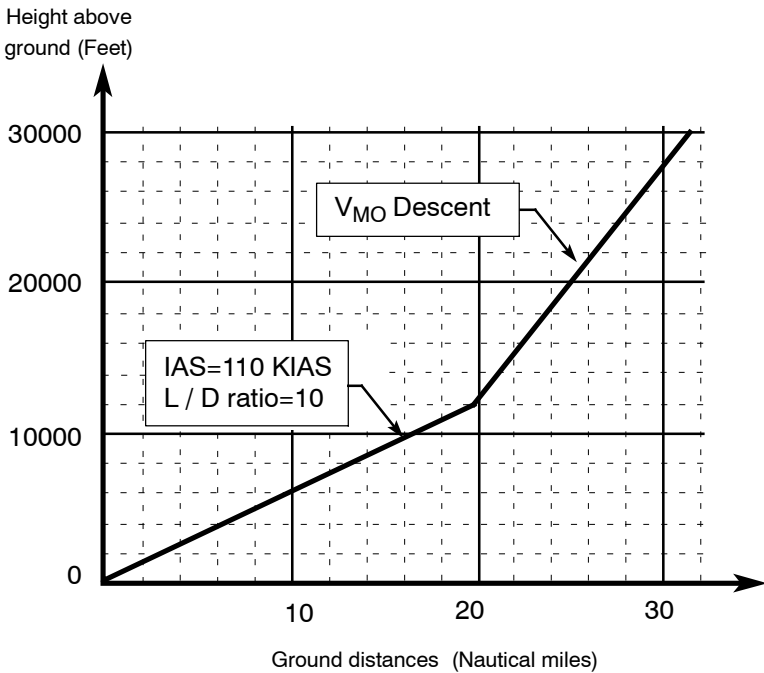


Figure 3.6.1 - MAXIMUM GLIDE SLOPE

### 3.7 - EMERGENCY LANDINGS

#### FORCED LANDING (ENGINE CUT OFF)

- 1 - Power lever ..... **IDLE**
- 2 - Propeller governor lever ..... **FEATHER**
- 3 - Condition lever ..... **CUT OFF**
- 4 - Tank selector ..... **OFF**
- 5 - "AUX BP" fuel switch ..... **OFF**
- 6 - "BLEED VALVE" switch ..... **OFF**
- 7 - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- 8 - "DUMP" switch ..... **ACTUATED**
- 9 - Glide speed ..... **110 KIAS maintained until favourable ground approach**

*If ground allows it :*

- 10 - Landing gear ..... **DN**

*If ground does not allow it :*

- 11 - Keep landing gear ..... **UP**
- 12 - When chosen ground is assured ..... **FLAPS LDG**
- 13 - CRASH lever ..... **PULL DOWN**
- 14 - Final approach ..... **IAS = 80 KIAS**
- 15 - Land flaring out
- 16 - EVACUATE after stop

3.7 - EMERGENCY LANDINGS

**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 engine SHUT-DOWN procedure (Refer to Chapter 4.3)

## 3.7 - EMERGENCY LANDINGS

**LANDING WITH UNLOCKED MAIN  
LANDING GEAR (1/2)**

- 1 - Ask control tower or another airplane to visually check landing gear position

**CAUTION**

**IF ONE MAIN LANDING GEAR IS NOT DOWN, IT IS  
BETTER TO LAND WITH GEAR UP.**

*If defective gear is down but unlocked :*

- 2 - "BLEED VALVE" switch ..... **OFF**
- 3 - "DUMP" switch ..... **ACTUATED**
- 4 - Maintain tank selector on defective landing gear side to lighten corresponding wing [maximum fuel unbalance 25 us gal (95 litres)]
- 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 - Land and set nose gear immediately on ground to assure lateral control
- 8 - Use full aileron during roll-out to lift the wing with the defective landing gear
- 9 - Preferably do not use reverse
- 10 - Complete taxiing with a slight turn toward defective landing gear



3.7 - EMERGENCY LANDINGS

**LANDING WITH UNLOCKED MAIN  
LANDING GEAR (2/2)**

- 11 - Condition lever ..... **CUT OFF**
- 12 - Engine stop procedure ..... **COMPLETE**
- 13 - EVACUATE

*If landing gear drags during landing :*

- 14 - Condition lever ..... **CUT OFF**
- 15 - CRASH lever ..... **PULL DOWN**
- 16 - Tank selector ..... **OFF**
- 17 - EVACUATE after airplane comes to a stop

## 3.7 - EMERGENCY LANDINGS

**LANDING WITH DEFECTIVE NOSE LANDING GEAR (DOWN UNLOCKED OR NOT DOWN)**

- 1 - Transfer passengers to the rear, if necessary
- 2 - Approach ..... **Flaps TO IAS = 90 KIAS**
- 3 - Land with nose-up attitude, keep nose high
- 4 - Condition lever ..... **CUT OFF**
- 5 - Propeller governor lever ..... **FEATHER**
- 6 - Touch-down slowly with nose wheel and keep elevator at nose-up stop
- 7 - Moderate braking
- 8 - CRASH lever ..... **PULL DOWN**
- 9 - EVACUATE after airplane comes to a stop



3.7 - EMERGENCY LANDINGS

**LANDING WITH GEAR UP**

1 - Final approach ..... **Standard**  
**(Flaps LDG, IAS = 80 KIAS)**

2 - "BLEED VALVE" switch ..... **OFF**

3 - "DUMP" switch ..... **ACTUATED**

*When runway is assured :*

4 - Power lever ..... **IDLE**

5 - Propeller governor lever ..... **FEATHER**

6 - Condition lever ..... **CUT OFF**

7 - Tank selector ..... **OFF**

8 - Flare out

9 - After touch-down, CRASH lever ..... **PULL DOWN**

10 - EVACUATE after airplane comes to a stop

## 3.7 - EMERGENCY LANDINGS

**LANDING WITHOUT ELEVATOR CONTROL**

- 1 - Configuration ..... **LANDING GEAR DN - FLAPS LDG**
- 2 - Airspeed ..... **Maintain IAS = 95 KIAS**
- 3 - Power as necessary to maintain airspeed according to an easy approach slope  $\simeq$  300 ft / min
- 4 - Adjust elevator by using manual pitch trim wheel
- 5 - When ground approaches, decrease slope progressively
- 6 - Reduce power progressively

3.7 - EMERGENCY LANDINGS

**LANDING WITH FLAPS MALFUNCTION**

**For flaps deflections from “UP” to “TO” position :**

- 1 - Proceed as for a normal landing, maintaining approach airspeed . . . . . **IAS = 100 KIAS**  
Provide for a landing distance increased up to about 60 %

**For flaps deflections greater than “TO” position :**

- 1 - Proceed as for a normal landing, maintaining approach airspeed . . . . . **IAS = 95 KIAS**  
Provide for a landing distance increased up to about 50 %

## 3.7 - EMERGENCY LANDINGS

### DITCHING

- 1 - Landing gear ..... **UP**  
*In heavy swell with light wind, land parallel to the swell (rollers).*  
*In heavy wind, land facing wind.*
- 2 - Flaps ..... **LDG**
- 3 - Maintain a descent rate as low as possible when approaching the water
- 4 - Airspeed ..... **IAS = 80 KIAS**
- 5 - "BLEED VALVE" switch ..... **OFF**
- 6 - "DUMP" switch ..... **ACTUATED**
- 7 - CRASH lever ..... **PUSH**
- 8 - Maintain attitude without rounding off until touch-down

TBM700A

- 9 - EVACUATE through EMERGENCY EXIT and / or the upper part of main door

TBM700B

- 9 - EVACUATE through EMERGENCY EXIT

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### 3.8 - FUEL SYSTEM

#### RED CAS MESSAGE "FUEL PRESS" ON

Indicates a fuel pressure drop at "HP" engine pump inlet

- 1 - Remaining fuel ..... **CHECK**
- 2 - Tank selector ..... **SWITCH TANKS**
- 3 - Fuel pressure indication ..... **CHECK**
- 4 - "AUX BP" fuel switch ..... **CHECK AUTO**

*If alarm persists :*

- 5 - "AUX BP" fuel switch ..... **ON**  
Warning CAS message "**AUX BOOST PMP ON**" ON . **CHECK**
- 6 - Fuel pressure ..... **CHECK**

*If pressure is normal again and warning light is off, mechanical pump has failed.*

- 7 - Maintain "AUX BP" fuel switch ..... **ON**

*If pressure remains at 0 (or drops to 0 after "AUX BP" pump operation) and if warning "**FUEL PRESS**" remains ON :*

- 8 - Tank selector ..... **SWITCH TANKS**

*If pressure is normal again, a supply problem may have occurred from the tank selected first (air vent, fuel icing, etc ...).*

*If pressure remains at 0 and if warning "**FUEL PRESS**" remains ON :*

- 9 - Fullest tank ..... **SELECT**

10 - Avoid high power and rapid movements of the power lever.

11 - Descend to an altitude below 20000 ft.

12 - Land as soon as possible.

3.8 - FUEL SYSTEM

**AMBER CAS MESSAGE  
"AUX BOOST PMP ON" ON**

(Indication is normal if "AUX BP" fuel switch is in ON position)

*If "AUX BP" fuel switch is in AUTO position :*

1 - Reset to ..... **ON**

2 - Then to ..... **AUTO**

*If "AUX BOOST PMP ON" CAS message goes out, continue flight normally*

*If "AUX BOOST PMP ON" CAS message remains ON, mechanical booster pump has failed*

3 - "AUX BP" fuel switch ..... **ON**

4 - Shorten flight

## 3.8 – FUEL SYSTEM

**AMBER CAS MESSAGE  
“FUEL LOW L” OR “FUEL LOW R” ON**

Indicates level drop in the corresponding tank

- 1 - Corresponding gage ..... **CHECK**
- 2 - Check the other tank has been automatically selected  
*If not :*
- 3 - “FUEL SEL” switch ..... **MAN**
- 4 - Select tank manually as required

**AMBER CAS MESSAGE  
“AUTO SEL” ON**

Indicates there is no more automatic control mode running

- 1 - “FUEL SEL” switch ..... **AUTO**  
*If it is on “AUTO”, failure is confirmed*
- 2 - “FUEL SEL” switch ..... **MAN**
- 3 - Select tanks manually as required

**CAUTION****MAXIMUM UNBALANCE IS 25 USG**



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3.9 - ELECTRICAL SYSTEM

**AMBER CAS MESSAGE  
"MAIN GEN" ON**

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

- 1 - If necessary ..... **CORRECT**
- 2 - If warning persists ..... **"MAIN GEN" switching confirmed**
- 3 - "MAIN GENERATOR RESET" push-button ..... **PUSH**

*In case of failure :*

4 - Disconnect following ancillary electrical systems :

- "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- "STROBE" switch ..... **OFF**
- "CABIN" lights switch ..... **OFF**
- "CABIN FAN" switch ..... **OFF**
- "AP / TRIMS MASTER" switch ..... **AP OFF**
- All equipment not essential ..... **OFF**
- "WINDSHIELD" switch  
(above 15 000 ft) ..... **OFF**
- "BLEED VALVE" switch  
(before landing and on ground) ..... **OFF**
- Only use landing lights briefly and if necessary.

- 5 - "GENERATOR" selector ..... **ST- BY**  
**(RESET if necessary)**

3.9 - ELECTRICAL SYSTEM

**AMBER CAS MESSAGE**  
**“LOW VOLTAGE” ON**  
**normal functioning on “MAIN GEN”**

1 - Voltmeter voltage ..... **CHECK**

2 - If battery voltage is < 26 Volts, monitor a possible drop or any indication of battery run-down

*In that case :*

3 - Disconnect following ancillary electrical systems :

- "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- "STROBE" switch ..... **OFF**
- "CABIN" lights switch ..... **OFF**
- "CABIN FAN" switch ..... **OFF**
- "AP / TRIMS MASTER" switch ..... **AP OFF**
- All equipment not essential ..... **OFF**
- "WINDSHIELD" switch  
(above 15 000 ft) ..... **OFF**
- "BLEED VALVE" switch  
(before landing and on ground) ..... **OFF**
- Only use landing lights briefly and if necessary.

4 - "GENERATOR" selector ..... **ST-BY**  
**(RESET if necessary)**

5 - Voltage and battery charge ..... **MONITOR**

3.9 - ELECTRICAL SYSTEM

**AMBER CAS MESSAGE  
"LOW VOLTAGE" ON  
functioning on "ST-BY GENERATOR"  
(after "MAIN GEN" failure) (1/3)**

Amber CAS messages "MAIN GEN and "LOW VOLTAGE" ON with "GENERATOR" selector on "ST-BY"

- 1 - "GENERATOR" selector ..... **MAIN**
- 2 - "MAIN GENERATOR RESET" push-button ..... **PRESS**

***If successful :***

- 3 - Disconnect ancillary electrical systems not essential
- 4 - Monitor voltmeter and ammeter

*Prepare to SHORTEN FLIGHT*

***If not successful :***

- 5 - "GENERATOR" selector ..... **ST-BY**
- 6 - "ST-BY GENERATOR RESET" push-button ..... **PRESS**

***If successful :***

- 7 - Disconnect ancillary electrical systems not essential
- 8 - Monitor voltmeter and ammeter

*Prepare to SHORTEN FLIGHT*

***If not successful, both generators failure is confirmed. If possible, return to VMC conditions***

- 9 - "GENERATOR" selector ..... **OFF**



3.9 - ELECTRICAL SYSTEM

**AMBER CAS MESSAGE  
"LOW VOLTAGE" ON  
functioning on "ST-BY GENERATOR"  
(after "MAIN GEN" failure) (2/3)**

*If conditions allow : VMC and non icing conditions*

- 10 - If altitude ≥ 12000 ft : "OXYGEN" switch ..... **ON**
- 11 - "ESS BUS TIE" reverse switch ..... **Cover up  
EMER position**

*In this configuration, only both "ESS BUS" bars and "BUS BAT" bar are directly supplied by the battery*

Available ancillary systems - see Figure 3.9.1

- 12 - LAND as soon as possible
- If necessary, it is always possible to use other ancillary systems by selecting :*
  - "ESS BUS TIE" reverse switch ..... **NORMAL**

***If flight conditions do not allow :***

- 13 - Manually disconnect ancillary systems as follows :
  - "AIRFRAME DE ICE" switch ..... **OFF**
  - "ICE LIGHT" switch ..... **OFF**
  - "PROP DE ICE" switch ..... **OFF**
  - "WINDSHIELD" switch ..... **OFF**
  - "PITOT 2 & STALL HTR" switch ..... **OFF**
  - "L.LDG / TAXI / R.LDG / PULSE SYST" switches ..... **OFF**
  - "STROBE" switch ..... **OFF**
  - "BLEED / AIR COND" switches ..... **OFF**
  - "AUX BP" switch ..... **OFF**
  - "FUEL SEL" switch ..... **MAN**
  - "AP TRIMS" MASTER switch ..... **OFF**
  - PFD 2 breaker ..... **PULL**
  - ADC 2 breaker ..... **PULL**



3.9 - ELECTRICAL SYSTEM

**AMBER CAS MESSAGE  
"LOW VOLTAGE" ON  
functioning on "ST-BY GENERATOR"  
(after "MAIN GEN" failure) (3/3)**

- TAS breaker ..... **PULL**
- DATA LINK breaker ..... **PULL**
- "CD" player ..... **OFF**
- "INSTR / CABIN / ACCESS" controls ..... **OFF**
- XPDR 2 breaker ..... **PULL**

***If icing conditions :***

- "PITOT 1 HTR" switch ..... **Checked ON**
- "WINDSHIELD" switch ..... **ON**
- Maintain minimum recommended speeds (Chapter 4.5 - "Flight into known icing conditions", Paragraph "Ice protection procedures", Point 3)

***If time permits :***

- "SVC PLUGS" breaker ..... **PULL**
- "AIR COND" breaker ..... **PULL**

14 - LAND as soon as possible







## 3.9 - ELECTRICAL SYSTEM

### **"AVIONICS" MASTER SWITCH FAILURE**

*In case of "AVIONICS" MASTER switch malfunction, leading to the impossibility of energizing the radionavigation equipment :*

1 - "AVIONICS MASTER" circuit breaker ..... **PULL**

The radionavigation equipment are supplied again and the flight can continue.

However the equipment forced ventilation is no longer available. An excessive use of VHF COM transmitters may reduce their power, so that transmission range will be limited.

### 3.9 - ELECTRICAL SYSTEM

Post-MOD70-0335-34 (ESI-2000)

#### **TOTAL LOSS OF ELECTRICAL POWER**

- 1 - Maintain aircraft control.
- 2 - Follow display instruction to "PRESS ANY KEY FOR BATTERY POWER".
- 3 - Use the ESI-2000 for attitude, airspeed and/or altitude.
- 4 - Land as soon as possible.

**NOTE :**

*Aircraft power is provided to the ESI-2000 display for normal operation. Operation of the basic ESI system is automatic - the system is powered ON anytime aircraft power is ON. The internal battery will provide power to the ESI-2000 if aircraft power is lost.*

*Press any key to allow the ESI-2000 to continue operation using the internal battery. If no key is pressed, the ESI-2000 will shut down automatically within (5) minutes.*

## 3.9 - ELECTRICAL SYSTEM

### ESI-2000 FAILURES

#### 1 - Battery indicator symbol meaning

BATTERY INDICATOR	DESCRIPTION
Not shown	Normal operation - No information needs to be conveyed
Green	More than one hour of operation remains
Amber	Less than one hour of operation remains
Amber "X"	Battery is not available to power unit (over temperature or low battery voltage condition exists)
Red "X"	Battery has failed - Service is required

#### 2 - ESI-2000 Attitude invalid in flight

- Maintain straight and level flight at a constant airspeed.
- Press the M button twice.
- Press the S button once
- The ESI-2000 will initiate the alignment process.
- When a normal attitude display is available, resume normal flight.
- If attitude information remains invalid, use attitude information from the primary attitude display.

#### 3 - Primary Attitude and/or Air Data Source has failed or is unreliable

- Maintain control of the aircraft.
- Land as soon as practicable.
- Use the ESI-2000 for attitude, airspeed and altitude information.



- 4 - Internal Battery Failure (red X'd battery indicator) in flight
  - Remain clear of IMC.
  - If in visual meteorological conditions :
    - . Cycle power on ESI-2000 (including internal power)
    - . Maintain straight and level while unit aligns
    - . If red "X" reappears, remain clear of IMC.
- 5 - Internal Battery not available (amber X'd battery indicator) in flight (battery above 55°C)
  - Reduce temperature of cockpit environment.
  - Remain clear of IMC until amber "X" is removed from the display.
- 6 - Internal Battery state of charge low (amber battery symbol displayed) in flight
  - Remain clear of IMC until amber battery symbol is removed from display signifying battery is charged sufficiently to have one hour of discharge ability.
- 7 - ESI-2000 in flight shutdown (Manual Procedure)
  - Maintain control of the aircraft using aircraft primary instruments.
  - Remove all aircraft power to the ESI-2000 by opening the 3 Amps "STBY INSTR" circuit breaker.
  - Press any key (button) as stated by the on screen message.
  - Press the M (Menu) button repeatedly until Shutdown menu is shown.
  - Press and hold the + (Hold) button until "SHUTTING DN" message is shown in the upper left corner of the screen.

**3.10 - PRESSURIZATION AND AIR CONDITIONING****RED CAS MESSAGE  
"CABIN DIFF PRESS" ON**

1 - Pressurization indicator ..... **CHECK**

*If  $\Delta P > 6.2$  psi :*

2 - "BLEED VALVE" switch ..... **OFF**

3 - EMERGENCY DESCENT (Refer to Chapter 3.6)

**RED CAS MESSAGE  
"CABIN ALTITUDE" ON**

1 - Pressurization indicator ..... **CHECK**

*If cabin altitude > 10000 ft :*

2 - Oxygen ..... **Refer to Chapter 3.13**

3 - "BLEED VALVE" switch ..... **CHECK ON**

4 - "DUMP" switch ..... **CHECK UNDER GUARD**

5 - "RAM AIR" control knob ..... **CHECK PUSHED**

6 - Limit flight altitude to maintain cabin altitude < 12000 ft

7 - If necessary EMERGENCY DESCENT (Refer to Chapter 3.6)

3.10 – PRESSURIZATION AND AIR CONDITIONING

**CABIN NOT DEPRESSURIZED  
AFTER LANDING**

**ΔP cabin > 0**

- 1 - "DUMP" switch ..... **ACTUATED**
- 2 - "BLEED VALVE" switch ..... **OFF**
- 3 - "RAM AIR" control knob ..... **PULLED if necessary**
- 4 - Wait for complete cabin depressurization before opening the door

**AMBER CAS MESSAGE  
"BLEED OFF" ON**

Indicates the pressurization system is not running possibly due to :

- failure or
- "BLEED VALVE" switch on "OFF" position
- 1 - If necessary ..... **CORRECT**
- 2 - If possible, reduce power
- 3 - "BLEED VALVE" switch ..... **OFF**
- 4 - "BLEED VALVE" switch ..... **ON**
- 5 - If warning "**BLEED OFF**" displayed, and if EMERGENCY DESCENT is required, refer to Chapter 3.6 or continue flight at an altitude below 12000 ft)
- 6 - Continue flight

## 3.10 - PRESSURIZATION AND AIR CONDITIONING

**RED CAS MESSAGE "BLEED TEMP" ON**

Indicates overheat of air conditioning pack. Normally this leads to "BLEED VALVE" cutoff and to "**BLEED OFF**" amber CAS message appearance

*Should automatic cutoff occur or not :*

- 1 - "BLEED VALVE" switch ..... **OFF**
- 2 - If necessary EMERGENCY DESCENT (Refer to Chapter 3.6) or continue flight at an altitude < 12000 ft

*REMARK :*

*Overheat may be due to a low airspeed in hot weather (beginning of climb for example). In that case, a higher airspeed may be sufficient to cause the overheat condition disappear, then "BLEED TEMP" CAS message will go out*

*In that case :*

- 3 - "BLEED VALVE" switch ..... **ON**
- 4 - "BLEED" selector ..... **LO**
- 5 - Continue flight



3.10 - PRESSURIZATION AND AIR CONDITIONING

**RED CAS MESSAGE "DOOR" ON**

Indicates that the door latches of the access door have not been correctly locked

***On ground**, check the correct locking, as well as the latches position of the access door*

**During flight :**

- 1 - Start a slow descent
- 2 - Decrease cabin  $\Delta P$  by selecting a higher cabin altitude and maximum cabin rate

*If real failure of the door is noted :*

- 3 - "BLEED VALVE" switch ..... **OFF**
- 4 - "DUMP" switch ..... **ACTUATED**
- 5 - If necessary, undertake an EMERGENCY DESCENT of "IN ROUGH ATMOSPHERE" type (Refer to Chapter 3.6)

## 3.10 - PRESSURIZATION AND AIR CONDITIONING

### ■ Pre-MOD70-0335-34 (ESI-2000)

#### **AMBER CAS MESSAGE "VACUUM LOW" ON**

Suction gage indicator ..... **CHECK**

Low vacuum may lead to malfunctioning of leading edge  
deicing, pressurization and gyroscopic vacuum-operated  
instruments ..... **MONITOR**

If necessary, fly to an altitude  $\leq$  12000 ft and return to VMC conditions.

### Post-MOD70-0335-34 (ESI-2000)

#### **AMBER CAS MESSAGE "VACUUM LOW" ON**

Low vacuum may lead to malfunctioning of leading edge  
deicing, pressurization ..... **MONITOR**

If necessary, fly to an altitude  $\leq$  12000 ft and return to VMC conditions as  
soon as possible.

3.10 – PRESSURIZATION AND AIR CONDITIONING

**DEFOG MALFUNCTION**

If moisture starts to quickly cover the inside of the windscreen with the distributor already positioned on "DEFOG" :

1 - "DEFOG / NORMAL" distributor ..... **NORMAL**

2 - "CABIN TEMP" selector ..... **Set to around  
a 10 o'clock position**

3 - "WINDSHIELD" switch ..... **ON**

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

4 - Altitude ..... **≤ 12000 ft**

5 - "BLEED VALVE" switch ..... **OFF**

**NOTE :**

*If in flight, the cabin will quickly be depressurized. Therefore, the cabin vertical speed indicator and altimeter indications will rapidly meet those of respectively the aircraft VSI and altimeter.*

### 3.11 - LANDING GEAR AND FLAPS

#### LANDING GEAR RETRACTION DISCREPANCY

*NOTE :*

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

**A - Symptoms :**

Steady red warning light ON **and** 0 to 3 green light(s) ON.

**- Actions :**

Refer to "EMERGENCY GEAR EXTENSION".

**B - Symptoms :**

Red warning light flashing **and** 3 green lights OFF.

**- Actions :**

1 - "LDG GR" circuit breaker ..... **PULL**

*If the red warning light goes off :*

The flight may be continued without any restriction.

Before extending the landing gear, refer to "EMERGENCY GEAR EXTENSION".

*If the red warning light becomes steady ON :*

"LDG GR" circuit breaker ..... **PUSH**

Refer to "EMERGENCY GEAR EXTENSION".

3.11 - LANDING GEAR AND FLAPS

**LANDING GEAR EXTENSION DISCREPANCY**

*NOTE :*

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

**- Symptoms**

Steady red warning light ON **and** 0 to 3 green light(s) OFF.

or

Red warning light flashing **and** 0 to 3 green light(s) OFF.

**- Actions**

Refer to "EMERGENCY GEAR EXTENSION".

3.11 – LANDING GEAR AND FLAPS

**EMERGENCY GEAR EXTENSION (1/2)**

*NOTE :*

*This procedure has to be followed in case of any discrepancy or doubt about the gear extension or retraction.*

Maintain IAS ≤ 128 KIAS

- 1 - Landing gear control ..... **DN**
- 2 - "LDG GR" circuit breaker ..... **PULL**
- 3 - Floor hatch ..... **OPEN**
- 4 - 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**

- 5 - Hand pump ..... **ACTUATE with maximum amplitude**

*If landing gear is down and locked (red light not illuminated, three green lights illuminated) :*

Continue flight if necessary at a speed **BELOW 178 KIAS**, exit and/or remain outside icing conditions.

Land.

**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 %.**

**INDICATED CRUISE AIRSPEED WILL BE REDUCED COMPARED TO A CLEAN AIRCRAFT, BECAUSE OF THE DRAG.**

**THIS SHOULD BE TAKEN INTO ACCOUNT WHEN CALCULATING THE AIRCRAFT RANGE.**



3.11 – LANDING GEAR AND FLAPS

**EMERGENCY GEAR EXTENSION (2/2)**

*If landing gear does not lock (other than 3 green indicator lights illuminated) :*

- 6 - "LDG GR" circuit breaker ..... **PUSH**
- 7 - "CHECK DN" switch ..... **ACTUATE**

*If the hardening of the manual lever is marked and if the normal indicating shows 3 green indicator lights or the "CHECK DN" indicating shows 3 green indicator lights :*

- 8 - LAND.

*If manual extension bar remains soft or if one (or more) green indicator light(s) does(do) not illuminate and upon pressing "CHECK DN", then a gear unlock condition is confirmed. Recycle the landing gear as follows :*

- 9 - By-pass selector ..... **UNLOCK / PUSH**
- 10 - Wait one minute.
- 11 - Landing gear control (IAS ≤ 128 KIAS) ..... **UP**

*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, refer to Chapter 3.7 "EMERGENCY LANDINGS", Paragraph "LANDING WITH UNLOCKED MAIN LANDING GEAR" or Paragraph "LANDING WITH DEFECTIVE NOSE LANDING GEAR".*

*Indication :*

*If one main landing gear leg is not in the down position, it is preferable to land with landing gear up (Refer to Chapter 3.7, Paragraph "LANDING WITH GEAR UP").*

3.11 – LANDING GEAR AND FLAPS

**RED CAS MESSAGE  
"FLAPS ASYM" ON**

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

- 1 - "FLAPS" circuit-breaker ..... **PULL**
- 2 - SHORTEN flight maintaining airspeeds :
  - IAS  $\leq$  178 KIAS for deflections between "UP" and "TO" positions
  - IAS  $\leq$  122 KIAS for deflections greater than "TO" position

**FLAPS MALFUNCTION**

**In case of blockage of flaps or inoperant flap control lever between "UP" and "TO" positions, with no flaps warning light illumination :**

- 1 - "FLAPS" circuit breaker ..... **PULL**
- 2 - Flap control lever ..... **UP**
- 3 - SHORTEN flight maintaining airspeeds :
  - IAS  $\leq$  178 KIAS for deflections between "UP" and "TO" positions
  - IAS  $\leq$  122 KIAS for deflections greater than "TO" position
- 4 - For landing, refer to Chapter 3.7, Paragraph "LANDING WITH FLAPS MALFUNCTION".



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### 3.12 - DEICING SYSTEM

#### LEADING EDGES DEICING FAILURE

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

- Ice on wing outboard sections
- Or ice on wing inboard sections and stabilizers
- One of the two cycling green lights is not lit

1 - LEAVE icing conditions as soon as possible

2 - "AIRFRAME DE ICE" switch ..... **OFF**

#### PROPELLER DEICING FAILURE

Symptoms : - Propeller deicing green light is not lit  
- Propeller vibrations

1 - REDUCE power

2 - ACTUATE propeller governor lever to vary RPM within operating range

3 - LEAVE icing conditions as soon as possible

3.12 - DEICING SYSTEM

**INERTIAL SEPARATOR FAILURE**

- Symptoms :
- Warning **“INERT SEP FAIL”** may appear
  - Warning **“INERT SEP ON”** does not appear within 30 seconds following “INERT SEP” switch setting ON
  - Neither torque drop, nor increase of ITT observed during maneuver

*LEAVE icing conditions as soon as possible*

**WINDSHIELD DEICING FAILURE**

- Symptoms :
- Windshield being covered uniformly by ice
  - No perception of heat when touching deiced section
  - Windshield deicing green light is not lit

Symptoms may result from overheat. In that case :

- 1 - “WINDSHIELD” switch ..... **OFF / ON**  
**when necessary**

In case of total failure :

- 1 - “CABIN TEMP” selector ..... **Maxi HOT**  
2 - “DEFOG / NORMAL” distributor ..... **Maxi DEFOG**

Before landing wait for a sufficient visibility

## 3.12 - DEICING SYSTEM

**WINDSHIELD MISTING OR INTERNAL ICING**

Symptoms : - Mist or ice on windshield internal face

- 1 - "CABIN TEMP" selector ..... **Max HOT**
- 2 - "DEFOG / NORMAL" distributor ..... **Max DEFOG**
- 3 - "WINDSHIELD" switch ..... **ON**

If not successful, to gain sufficient visibility :

- 4 - Manually clean a sufficient visibility area
- 5 - If necessary, clean L.H. side window and conduct a sideslip approach (rudder pedals to the right) in order to get sufficient landing visual references
- 6 - Maintain IAS  $\geq$  90 KIAS

**CAUTION**

**IN CASE OF SIDESLIP APPROACH WITH PEDAL ON THE RIGHT  
DURING A LONG PERIOD, SELECT R.H. FUEL TANK**

3.12 - DEICING SYSTEM

**AMBER CAS MESSAGES  
“PITOT NO HT 1”, “PITOT NO HT 2”  
OR “STALL NO HEAT” ON**

Indicates a heating failure of the corresponding probe

**“PITOT NO HT 1”**

Icing conditions may alter L.H. airspeed indications

1 - AVOID icing conditions

*If it is not possible :*

2 - Perform moderate descent or climb attitudes

*V<sub>MO</sub> overshooting and stall warning lights are always operating*

**“PITOT NO HT 2”**

V<sub>MO</sub> overshoot warning may be altered by icing conditions

*Monitor maximum airspeed ..... ≤ 266 KIAS*

**“STALL NO HEAT”**

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

*MONITOR and MAINTAIN minimum airspeed according to airplane configuration and icing conditions*

**3.13 - MISCELLANEOUS**

**RUNAWAY OF ONE OF THE THREE ELECTRICAL TRIM TABS**

- 1 - "AP / DISC TRM INT" push button . . . . . **PRESSED AND HOLD**

The three trim tabs are disconnected and runaway stops

- 2 - "AP / TRIMS MASTER" switch . . . . . **OFF**

- 3 - "AP / DISC TRM INT" push button . . . . . **RELEASED**

- 4 - Pitch trim may be used manually

- 5 - Reduce airspeed if necessary to reduce control forces

*If pitch trim runaway*

- 6 - "AP / TRIMS MASTER" switch . . . . . **AP OFF**

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

*If rudder or aileron trim runaway*

- 7 - PULL circuit-breaker corresponding to the defective trim tab

- 8 - "AP / TRIMS MASTER" switch . . . . . **ON**

Two other trim tabs may be used again electrically

**CRACK IN COCKPIT WINDOW OR WINDOW PANEL**

- 1 - Descend slowly

- 2 - Reduce cabin  $\Delta P$  by selecting a higher cabin altitude and the maximum cabin rate

3.13 - MISCELLANEOUS

**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 toward 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

**EMERGENCY BEACON USE (ELT)**

*Before a forced landing :*

- 1 - On COM VHF 121.5 MHZ or on a known air traffic control frequency, transmit the "MAY DAY" signal if possible

*After landing :*

- 2 - "ELT" switch ..... **ON**  
**(maintain it ON until aid arrives)**

## 3.13 - MISCELLANEOUS

**TOTAL COMMUNICATION FAILURE**

- 1 - Refer to PARTICULAR TRANSPONDER USES procedures
- 2 - Apply air traffic control procedures in case of communications failure :
  - code 7700 during 1 minute, then
  - code 7600
- 3 - Try to restore communications by using all possible combinations of the headset, micro and loudspeaker

**PARTICULAR TRANSPONDER USES**

- 1 - Check transponder mode selector ..... **ON or ALT**
- 2 - Codes selector :

7700	EMERGENCY DISTRESS
7600	COMMUNICATIONS FAILURE
7500	HIJACKING



3.13 - MISCELLANEOUS

**ACCIDENTAL SPINS**

***(Voluntary spins are prohibited)***

*In case of accidental spins*

- 1 - Control wheel ..... **NEUTRAL : PITCH AND ROLL**
- 2 - Rudder ..... **FULLY OPPOSED TO THE SPIN**
- 3 - Power lever ..... **IDLE**
- 4 - Flaps ..... **UP**  
**when rotation is stopped**
- 5 - Level the wings and ease out of the dive

## 3.13 - MISCELLANEOUS

**OXYGEN USE (1/2)****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...)**

**WARNING**

**IN CASE GENERATOR FAILS TO ACTIVATE, PULL ON THE OTHER LANYARD**

**Front seats**

- 1 - Open drawer located in R.H. seat seating
- 2 - Take a mask, uncoil tube totally
- 3 - Fully extend the lanyard
- 4 - Tug to activate the generator ; when the oxygen flow is felt, adjust the mask on the face
- 5 - "NORMAL / MASK" micro inverter ..... **MASK**
- 6 - Descend quickly to 12000 ft or below

**Passengers**

- 1 - Open drawers located in both seatings of the seats fitted with oxygen (seating marked with a placard)
- 2 - Take a mask, uncoil tube totally
- 3 - Fully extend the lanyard
- 4 - Tug to activate the generator ; when the oxygen flow is felt, adjust the mask on the face



3.13 - MISCELLANEOUS

**OXYGEN USE (2/2)**

**NOTE :**

*Whenever an oxygen generator is activated, the CAS message "OXYGEN" appears on the MFD unit.*

*The CAS message will remain ON as long as the used generator is not replaced*

**AIRSPEED INDICATING SYSTEM FAILURE**

Symptoms : erroneous indication in flight

- 1 - "PITOT 1 HTR" switch ..... **CHECK ON**
- 2 - "PITOT 2 & STALL HTR" switch ..... **CHECK ON**

**If symptoms persist :**

- 3 - ADC 2 ..... **SWITCH ON**

**If symptoms persist :**

- 4 - "ALTERNATE STATIC" selector ..... **PULL THOROUGHLY**
- 5 - Use STBY airspeed indicator

## 3.13 - MISCELLANEOUS

**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 Air Traffic Control to exit severe icing conditions by changing the route or the altitude.
- 2 - Avoid any sudden maneuver on flight controls.
- 3 - Do not engage the autopilot.
- 4 - If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot.
- 5 - If an unusual roll response or uncommanded roll control movement is observed, reduce the angle-of-attack.
- 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.
- 7 - If the flaps are extended, do not retract them until the airframe is clear of ice.

3.13 - MISCELLANEOUS

**DUAL GPS/SBAS FAILURE (AMBER "DR" OR "LOI") 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 G1000 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 aircraft icon in the center and an amber 'DR' overwriting the icon. Aircraft 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 G1000 Cockpit Reference 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**



## 3.13 - MISCELLANEOUS

**DUAL GPS/SBAS FAILURE (AMBER "DR" OR "LOI")  
ON HSI (2/2)**

*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.

3.13 - MISCELLANEOUS

**GPS APPROACH ALARM LIMITS EXCEEDED**

During a GPS LPV, LNAV/VNAV, or LNAV+V approach, if the Horizontal or Vertical alarm limits are exceeded, the G1000 System will downgrade the approach. This will be annunciated in the ALERTS window and by an annunciation change on the HSI from LPV, L/VNAV, or LNAV+V to LNAV. GPS glide path vertical guidance will be removed from the PFD. The approach may be continued using the LNAV only minimums.

During any GPS approach in which both precision and non-precision alarm limits are exceeded, the G1000 System will flag the lateral guidance and display a system message "ABORT APPROACH loss of navigation". Immediately upon viewing the message, the unit will revert to Terminal navigation mode alarm limits. If the position integrity is within these limits lateral guidance will be restored and the GPS may be used to execute the missed approach, otherwise alternate means of navigation must be utilized.

## 3.13 - MISCELLANEOUS

**LEFT PFD FAILURE (1/2)****Symptoms :**

- Left screen is black
- AUTOPILOT is disconnected

**Lost systems : LEFT PFD**

- AUTOPILOT (AP) and FLIGHT DIRECTOR (FD)
- COM 1
- NAV 1
- DME 1
- XPDR 1

**Actions :**

## TRAJECTORY :

- 1 - "AP DISC" switch (on control wheel) **PRESS** (to mute aural tone associated to Auto pilot disconnection)
- 2 - Fly the aircraft manually using stand-by instruments information
- 3 - "PFD 1" CIRCUIT BREAKER **CHECKED "IN"**
- 4 - RIGHT PFD REVERSIONARY mode **ENGAGED**  
( "DISPLAY BACK UP" button "OUT" )
- 5 - "XFR" (on AFCS control unit) **PRESS** / Check green arrow to right side  
(to connect AFCS to RIGHT PFD if engaged)
- 6 - Autopilot **NORMAL USE** ( as desired)





3.13 - MISCELLANEOUS

**LEFT PFD FAILURE (2/2)**

COM and NAVAIDS (selected on RIGHT PFD) :

- 1 - "COM 2" frequency **SELECTED and ACTIVATED**
- 2 - "COM 2 MIC + COM 2" key (audio control panel) **SELECTED**
- 3 - RADIO CHECK with ATC **PERFORMED**
- 4 - "NAV 2" frequency **SELECTED and ACTIVATED**
- 5 - "DME 2" source **SELECTED**
- 6 - "XPDR 2" **SELECTED** (check squawk and mode)
- 7 - "CDI" source (NAV/LOC or GPS) **SELECTED** as desired
- 8 - Shorten flight

**CAUTION**

- 1 - In case of ILS approach, don't forget to select "LOC2" on CDI source (on RIGHT PFD)
- 2 - Use of reversionary mode will report LEFT PFD information on MFD and disable supplementary functions as weather radar, stormscope,.....

## 3.13 - MISCELLANEOUS

**AHRS FAILURE (1/2)****Symptoms : Autopilot is disconnected**

- On PFD(S) : COMPARATOR WINDOW (**WHITE ANNUNCIATION**) :  
"HDG NO COMP" and/or "PIT NO COMP" and/or "ROL NO COMP"
- On PFD(S) : REVERSIONARY SENSOR WINDOW (**YELLOW ANNUNCIATION**) : "BOTH ON AHRS1" or "BOTH ON AHRS2"

**Lost systems :**

- AHRS1 or AHRS2
- AUTOPILOT (AP)

**Systems still operative :**

- FLIGHT DIRECTOR (FD), when engaged again

**Actions : AUTOPILOT IS NOT OPERATIVE**

- 1 - AHRS1 and/or AHRS2 circuit breaker **CHECKED "IN"**
  - A - If **yellow** annunciation "BOTH ON AHRS1" or "BOTH ON AHRS2" is associated to **white** annunciation "HDG NO COMP" and/or "PIT NO COMP" and/or "ROL NO COMP" :
    - 1 - Fly the aircraft manually
    - 2 - AHRS1 and/or AHRS2 circuit breaker **CHECKED "IN"**



3.13 - MISCELLANEOUS

**AHRS FAILURE (2/2)**

***If pilot wishes :***

- 3 - "FD" (default mode : "PITCH" and ROLL)      **ENGAGED**
- 4 - "FD" (specifics modes : "HDG",  
"NAV", "ALT", ...)      **ENGAGED as DESIRED**
- 5 - Fly the aircraft manually to follow Command Bars

*If ALL white annunciations, ("HDG NO COMP" and/or "PIT NO COMP" and/or "ROL NO COMP"), GO "OFF", refer to following "B" procedure.*

- B - If **yellow** annunciation "BOTH ON AHRS1" or "BOTH ON AHRS2" **ONLY** (not associated to **white** annunciation "HDG NO COMP" and/or "PIT NO COMP" and/or "ROL NO COMP") :
  - 1 - PFD1 and PFD2 "SENSOR" softkey's      **PRESSED**
  - 2 - AHRS1 on PFD1 and/or AHRS2 on PFD2      **RESET**
  - 3 - "BOTH ON AHRS1" or "BOTH ON AHRS2"  
annunciation's - **OFF**      **CHECKED**
  - 4 - **Autopilot**      **NORMAL USE (as desired)**

## 3.13 - MISCELLANEOUS

**ADC FAILURE****Symptoms :**

- On PFD(S) : COMPARATOR WINDOW (**WHITE ANNUNCIATION**) : "IAS NO COMP" and/or "ALT NO COMP"
- On PFD(S) : REVERSIONARY SENSOR WINDOW (**YELLOW ANNUNCIATION**) : "BOTH ON ADC1" or "BOTH ON ADC2"

**Lost systems :**

- ADC1 or ADC2

**Actions : AUTOPILOT IS STILL OPERATIVE**

- 1 - ADC1 and/or ADC2 circuit breaker **CHECKED "IN"**

A - If **yellow** annunciation "BOTH ON ADC1" or "BOTH ON ADC2" is associated to **white** annunciation "IAS NO COMP" and/or "ALT NO COMP" :

- 1 - NO action required

*If ALL white annunciations, ("IAS NO COMP" and/or "ALT NO COMP"), GO "OFF", refer to following "B" procedure.*

B - If **yellow** annunciation "BOTH ON ADC1" or "BOTH ON ADC2" **ONLY** (not associated to **white** annunciation "IAS NO COMP" and/or "ALT NO COMP"), pilot may do following actions :

- 1 - PFD1 and PFD2 "SENSOR" softkey's **PRESSED**
- 2 - ADC1 on PFD1 and/or ADC2 on PFD2 **RESET**
- 3 - "BOTH ON ADC1" or BOTH ON ADC2" annunciation's - **OFF** **CHECKED**

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# SECTION 4

## NORMAL PROCEDURES

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## **4.1 - GENERAL**

This Section provides procedures for the conduct of normal operation of TBM 700 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 Pilot's Operating Handbook.



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## 4.3 - CHECK-LIST PROCEDURES

### **PREFLIGHT INSPECTION**

(See Figure 4.3.1)

#### **IMPORTANT**

- \* During outside inspection, visually check inspection doors and airplane general condition.
- \* 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 (3)
  - engine air inlet and propeller locking (1).
- \* Remove tie-downs.
- \* Refer to Section 8 for quantities, products and specifications of products and materials currently used.



CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

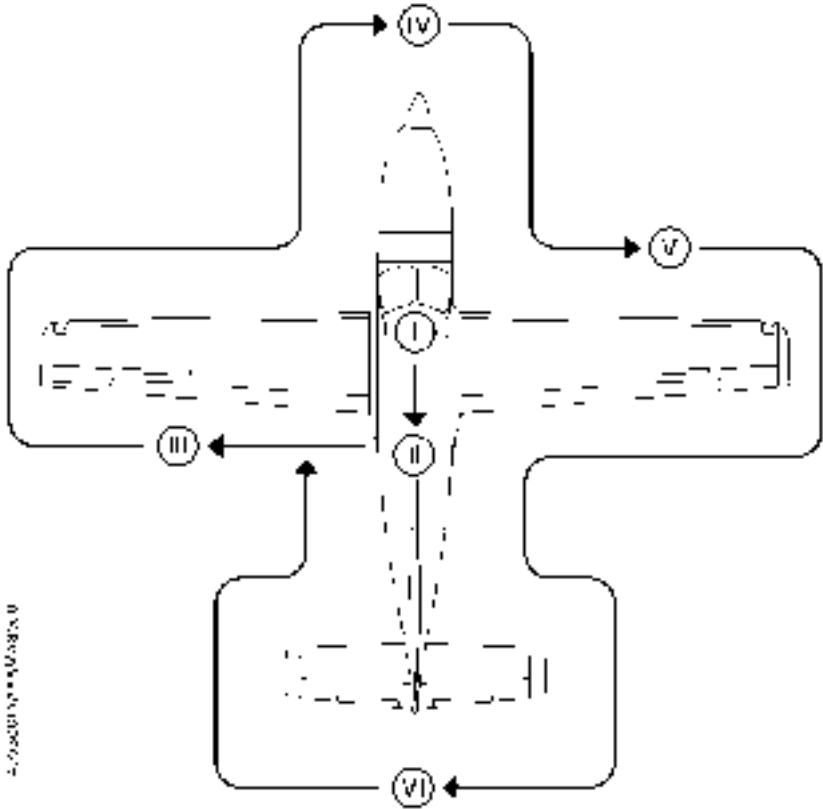


Figure 4.3.1 - PREFLIGHT INSPECTION



## CHECK-LIST PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

**A - INSIDE INSPECTIONS****Cockpit** (I)

- CRASH lever ..... **UP**
- 1 - DE ICE SYSTEM panel
  - All switches ..... **OFF**
- 2 - ELECTRIC POWER panel
  - "SOURCE" selector ..... **OFF**
  - "GENERATOR" selector ..... **OFF**
- 3 - ENGINE START panel
  - "IGNITION" switch ..... **AUTO or OFF**
  - "STARTER" switch ..... **OFF**
- 4 - INT LIGHTS panel
  - All switches ..... **OFF**
- 5 - EXT LIGHTS panel
  - All switches ..... **OFF**
- 6 - Breakers panel
  - All breakers ..... **ENGAGED**
- 7 - Landing gear control ..... **DN**
- 8 - Landing gear emergency control
  - Lever ..... **PULLED DOWN**
  - By-pass selector ..... **PUSHED**
  - Door ..... **IN PLACE**
- 9 - "AVIONICS" MASTER switch ..... **OFF**
- 10 - "AP / TRIMS MASTER" switch ..... **OFF**



CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

- 11 - ECS panel
  - "BLEED VALVE" switch ..... **OFF**
  - "CABIN FAN" switch ..... **OFF**
  - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
  - "DUMP" switch ..... **GUARDED**
- 12 - "RAM AIR" control knob ..... **PUSHED**
- 13 - Fuel
  - "FUEL SEL" selector ..... **MAN**
  - "AUX BP" switch ..... **OFF**
  - Tank selector ..... **L or R**
- 14 - Flight control lock ..... **REMOVED / STOWED**
- 15 - Flight controls ..... **Deflections checked**
- 16 - Parking brake ..... **SET**
- 17 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX. RPM**
- Condition lever ..... **CUT OFF**
- 18 - BAT BUS power supply
  - Access lighting ..... **CHECKED**
  - Emergency lighting ..... **CHECKED**
- 19 - Flaps control ..... **UP**



## CHECK-LIST PROCEDURES

### PREFLIGHT INSPECTION (Cont'd)

#### CAUTION

#### BEFORE SELECTING SOURCE, CHECK :

- 20 - "IGNITION" switch ..... AUTO
- 21 - "STARTER" switch ..... OFF
- 22 - Landing gear control ..... DN

23 - "SOURCE" selector ..... BAT or GPU

24 - "AVIONICS" MASTER switch ..... START

25 - PFD1 DISPLAY BACKUP button ..... OUT

26 - EXT LIGHTS panel

- "LTS TEST" push button ..... PRESS

(3 green lamps "L.LDG / TAXI / R.LDG" ON)

(red and amber MASTER warnings ON)

("PFD" lights ON)

(AP mode controller lights ON)

- "L.LDG / TAXI / R.LDG" switches ..... ON

(3 green lamps ON)

- "L.LDG / TAXI / R.LDG" switches ..... OFF

27 - Oxygen emergency system

WARNING CAS MESSAGE

**"OXYGEN"**

OFF

28 - INT LIGHTS panel ..... CHECK

29 - ECS panel

- "LT TEST" push button

(if vapor cycle cooling system installed) ..... PRESS

(green lamp ON)





CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

- 30 - Voltage ..... **CHECK**
  - BAT ..... **> 24.5 Volts**
  - GPU ..... **≈ 28 Volts**
- 31 - CAS display ..... **CHECK**
- 32 - Left and right fuel quantities ..... **CHECK**
- 33 - Flaps ..... **LDG**
- 34 - Landing gear panel ..... **Warning lights : 3 GREEN ON**  
**Test 1, then 2 : RED FLASHING + 3 GREEN ON**
- 35 - DE ICE SYSTEM panel
  - "PITOT 1 HTR" switch ..... **ON**  
**WARNING CAS MESSAGE "PITOT HT 1" ON**
  - "PITOT 2 & STALL HTR" switch ..... **ON**  
**WARNING CAS MESSAGE "PITOT HT ON 1-2" ON**
  - WARNING CAS MESSAGE "STALL HEAT ON" ON**
  - "PITOT 1 HTR" switch ..... **OFF**
  - "PITOT 2 & STALL HTR" switch ..... **OFF**

**WARNING**

**DO NOT TOUCH PITOTS NOR STALL WARNING VANE.  
THEY COULD BE HOT ENOUGH TO BURN SKIN**

- 36 - EXT LIGHTS panel
  - "STROBE" ..... **ON**
  - "NAV" ..... **ON**
  - "ICE LIGHT" ..... **ON**

*From outside the airplane, check operation of all lights and the stall warning horn*



## CHECK-LIST PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

- 37 - Reentering the airplane  
 - EXT LIGHTS panel ..... **ALL SWITCHES OFF**  
 - DE ICE SYSTEM panel ..... **ALL SWITCHES OFF**
- 38 - "AVIONICS" MASTER switch ..... **OFF**
- 39 - "SOURCE" selector ..... **OFF**

**Post-MOD70-0335-34 (ESI-2000)**

- 40 - ESI-2000 battery indicator symbol ..... **NOT DISPLAYED**

**Cabin** (II)

- 1 - Cabin fire extinguisher (if installed) ..... **CHECK**  
**(Pressure / Attachment)**
- 2 - Seats / belts ..... **CHECK**
- 3 - Windows ..... **CHECK**  
**(General condition / No crack)**
- 4 - Emergency exit ..... **CLOSED / LOCKED**  
 - Anti-theft safety ..... **REMOVE / STOW**
- 5 - Baggage compartment ..... **STRAPS IN PLACE**
- 6 - Partition net (if installed) ..... **IN PLACE**
- 7 - Emergency beacon ..... **AUTO**
- 8 - Doors operation ..... **CHECK**
- 9 - Stairs condition ..... **CHECK**  
**(Condition / Play)**



CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

**B - AIRPLANE OUTSIDE**

**L.H. wing (III)**

- 1 - Flap ..... **CHECK**  
**(Condition / Play)**
- 2 - Aileron and trim / Spoiler ..... **CHECK**  
**(Condition / Free movement / Deflection)**
- 3 - Trailing edge static discharger ..... **CHECK**  
**(Condition / Attachment)**
- 4 - Wing tip / nav. lights /  
Strobe / landing light ..... **Condition - CHECK**
- 5 - OAT probe ..... **Condition - CHECK**
- 6 - Fuel tank ..... **CAP CLOSED / LOCKED**
- 7 - Fuel tank air vent ..... **Unobstructed - CHECK**
- 8 - External pitot (IAS) ..... **Condition - CHECK**
- 9 - Internal pitot (V<sub>MO</sub>) ..... **Condition - CHECK**
- 10 - Wing lower surface ..... **CHECK**  
**(No leak)**
- 11 - Wing deicer boots ..... **CHECK**  
**(Condition / Attachment)**
- 12 - Fuel tank drain (two on each wing) ..... **DRAIN**  
**(Fuel free of water and contamination)**



## CHECK-LIST PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

- 13 - L.H. main landing gear  
 - Shock-absorber / doors /  
 tire / wheel well ..... **CHECK**

**Fuselage forward section** (IV)

- 1 - Baggage compartment  
 - Inside ..... **CONTROLLED**  
 - Door ..... **CLOSED / LOCKED**
- 2 - GPU door ..... **CLOSED**  
**(If not used)**
- 3 - Fuel circuit drain ..... **DRAIN**  
**(Fuel free of water and contamination)**  
 - Filter contamination indicator ..... **CHECK**
- 4 - L.H. exhaust stub ..... **CHECK**  
**(Condition / No crack)**
- 5 - Upper engine cowls ..... **OPEN**  
 For the first flight of the day :  
 - Oil cap ..... **CLOSED / LOCKED**  
 - Engine oil level ..... **CHECK**  
 - Fuel pipes ..... **CHECK**  
**(No leak, deterioration, wear)**
- 6 - Engine cowls ..... **Condition - CHECK**  
**CLOSED / LOCKED**
- 7 - Air inlets  
 - Main ..... **No crack - UNOBSTRUCTED**  
 - Lateral / upper ..... **UNOBSTRUCTED**
- 8 - Propeller and spinner ..... **CHECK**  
**(No nicks, cracks or oil leaks / Attachment)**



CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

9 - Nose gear  
- Landing light / shock-absorber / doors /  
tire / wheel well ..... **CHECK**

10 - R.H. exhaust stub ..... **CHECK**  
**(Condition / No cracks)**

**R.H. wing** (V)

1 - Fuel tank drain (two on each wing) ..... **DRAIN**  
**(Fuel free of water and contamination)**

2 - Main landing gear  
- Shock-absorber / doors /  
tire / wheel well ..... **CHECK**

3 - Wing deicer boots ..... **CHECK**  
**(Condition / Attachment)**

4 - Stall warning ..... **CHECK**  
**(Condition / Deflection)**

5 - Wing lower surface ..... **CHECK**  
**(No leaks)**

6 - Fuel tank ..... **CAP CLOSED / LOCKED**

7 - Fuel tank air vent ..... **Unobstructed - CHECK**

8 - Wing tip / nav. light /  
strobe / landing light ..... **Condition - CHECK**

9 - Trailing edge static discharger ..... **CHECK**  
**(Condition / Number / Attachment)**

10 - Aileron / spoiler ..... **CHECK**  
**(Condition / Free movement / Deflection)**

11 - Flap ..... **CHECK**  
**(Condition / Play)**



## CHECK-LIST PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

***Fuselage rear section / Empennages*** (VI)

- 1 - Static pressure ports ..... **Clean - CHECK**
- 2 - Static pressure ports ..... **Clean - CHECK**
- 3 - Ventral fins ..... **CHECK**  
**(Attachment condition)**
- 4 - Inspection door under fuselage ..... **CLOSED - CHECK**  
**(Attachments)**
- 5 - Horizontal stabilizer  
deicer boots (R.H. side) ..... **CHECK**  
**(Condition / Attachments)**
- 6 - Elevator and trim ..... **CHECK**  
**(Condition / Deflection free movement / Trim position)**
- 7 - Static dischargers ..... **CHECK**  
**(Condition)**
- 8 - Vertical stabilizer deicer boots ..... **CHECK**  
**(Condition / Attachments)**
- 9 - Rudder and trim ..... **CHECK**  
**(Condition / Trim position)**
- 10 - Static dischargers ..... **CHECK**  
**(Condition)**
- 11 - Tail cone ..... **Condition - CHECK**
- 12 - Static pressure ports ..... **Clean - CHECK**

CHECK-LIST PROCEDURES

**BEFORE STARTING ENGINE (1/2)**

**CAUTION**

**"BLEED VALVE" SWITCH ON "ON" MAY CAUSE  
OVERTEMPERATURE OR ABNORMAL ACCELERATION AT  
START**

**CAUTION**

**MAKE SURE THAT "MAN OVRD" CONTROL IS OFF TO AVOID  
OVERTEMPERATURE RISKS AT START**

- 1 - Preflight inspection ..... **COMPLETED**
- 2 - Cabin access door ..... **CLOSED / LOCKED**
- 3 - Baggage ..... **STOWED**
- 4 - Parking brake ..... **SET**
- 5 - Weight and balance ..... **COMPUTED / CHECKED**
- 6 - Pilot and R.H. station seats ..... **ADJUSTED**
- 7 - R.H and L.H. pedals ..... **ADJUSTED**
- 8 - Belts and harnesses (Pilot and passengers) ..... **FASTENED**
- 9 - Crash lever ..... **UP**
- 10 - "AVIONICS" MASTER switch ..... **START**
- 11 - PFD1 DISPLAY BACKUP button ..... **OUT**
- 12 - "IGNITION" switch ..... **AUTO**
- 13 - "STARTER" switch ..... **OFF**
- 14 - Landing gear control ..... **DN**
- 15 - "SOURCE" selector ..... **BAT (or GPU)**
- 16 - Passengers briefing ..... **AS REQUIRED**



CHECK-LIST PROCEDURES

**BEFORE STARTING ENGINE (2/2)**

- 17 - CAS display
  - Access door

**WARNING CAS MESSAGE                    "DOOR"                    OFF**

- Oxygen emergency system

**WARNING CAS MESSAGE                    "OXYGEN"                    OFF**

- Vacuum system

**CAUTION CAS MESSAGE                    "VACUUM LOW"                    ON**

- 18 - Fuel

- Quantity ..... **CHECKED**
- Tank selector ..... **L or R - CHECKED**
- "FUEL SEL" switch ..... **AUTO**

**WARNING CAS MESSAGE                    "AUTO SEL"                    OFF**

- "SHIFT" push-button ..... **PRESS**

**The selector changes tank  
 On ground, observe a tank change  
 every minute and 15 seconds**

- 19 - Fire detection TEST (if installed) ..... **CARRY OUT**

- 20 - EXT LIGHTS panel

- "STROBE" ..... **AS REQUIRED**

- 21 - In case of night flight

- INT LIGHTS panel : "INSTR" + "PANEL" ..... **ADJUSTED**
- Navigation lights ..... **ON**
- Flashlight (if necessary) ..... **IN PLACE**



CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (1/5)**

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

- 1 - "IGNITION" switch ..... AUTO or OFF**
- 2 - "STARTER" switch ..... OFF**
- 3 - "INERT SEP" switch ..... OFF**
- 4 - Landing gear control ..... DN**

- 5 - ELECTRIC POWER panel
  - "SOURCE" selector ..... **BAT**
  - Voltage ..... **CHECKED**  
**> 24.5Volts**
- 6 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX RPM**
- Condition lever ..... **CUT OFF**



## CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (2/5)**

- 7 - FUEL panel  
 - "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**

**WARNING CAS MESSAGE "FUEL PRESS" OFF**

- 8 - Propeller ..... **AREA CLEAR**

- 9 - ENGINE START panel  
 - "IGNITION" switch ..... **AUTO**  
 - "STARTER" switch ..... **ON**

**WARNING CAS MESSAGE "STARTER" ON**

**WARNING CAS MESSAGE "IGNITION" ON**

**NOTE :**

*The utilization of the starter is bound by limitations mentioned in Chapter 2.4 "STARTER OPERATION LIMITS".*

- Ng  $\simeq$  13 %  
 - Condition lever ..... **LO / IDLE**

Monitor increase of :

- ITT ..... **(max. ITT :  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.)**

- Ng  
 - Oil pressure

**WARNING CAS MESSAGE "OIL PRESS" OFF**

- 10 - "STARTER" switch ..... **OFF**  
 Check Ng > 52 %

- 11 - Condition lever ..... **HI / IDLE**



CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (3/5)**

- 12 - Engine instruments ..... **CHECK : Ng  $\simeq$  69 % ( $\pm$  2 %)**  
**(Oil pressure / Oil temperature / ITT = green sector)**
  
- 13 - FUEL panel
  - "AUX BP" switch ..... **AUTO**
  
  - WARNING CAS MESSAGE "AUX BOOST PMP ON"                      OFF**
  
- 14 - Generator
  - WARNING CAS MESSAGE                      "MAIN GEN"                      OFF**
  
  - RESET if necessary**
  - Ammeters ..... **CHARGE CHECKED**
  - Voltmeters ..... **VOLTAGE CHECKED**  
**(V  $\simeq$  28 Volts)**

**CAUTION**

**IF 10 SECONDS AFTER HAVING POSITIONED CONDITION LEVER TO "LO / IDLE" THERE IS NO IGNITION OR IF DURING IGNITION SEQUENCE, OVERTEMPERATURE INDICATION APPEARS (MAX. ITT : 870°C FOR MORE THAN 20 SECONDS - 1000°C FOR MORE THAN 5 SECONDS),**

**INTERRUPT STARTING PROCEDURE :**

- Condition lever ..... CUT OFF**
- "IGNITION" switch ..... AUTO or OFF**
- Wait ITT < 800°C, then :**
- "STARTER" switch ..... OFF**
- BEFORE ANY RESTARTING ATTEMPT, CARRY OUT A MOTORING (Refer to paragraph "MOTORING")**



CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (3/5)**

- 12 - Engine instruments . . . . . **CHECK : Ng  $\simeq$  68 % ( $\pm$  1 %)**  
**(Oil pressure / Oil temperature / ITT = green sector)**
  
- 13 - FUEL panel  
- "AUX BP" switch . . . . . **AUTO**  
**WARNING CAS MESSAGE "AUX BOOST PMP ON" OFF**
  
- 14 - Generator  
**WARNING CAS MESSAGE "MAIN GEN" OFF**  
**RESET if necessary**
  - Ammeters . . . . . **CHARGE CHECKED**
  - Voltmeters . . . . . **VOLTAGE CHECKED**  
**(V  $\simeq$  28 Volts)**

**CAUTION**

**IF 10 SECONDS AFTER HAVING POSITIONED CONDITION LEVER TO "LO / IDLE" THERE IS NO IGNITION OR IF DURING IGNITION SEQUENCE, OVERTEMPERATURE INDICATION APPEARS (MAX. ITT : 870°C FOR MORE THAN 20 SECONDS - 1000°C FOR MORE THAN 5 SECONDS),**

**INTERRUPT STARTING PROCEDURE :**

**Condition lever . . . . . CUT OFF**

- **"IGNITION" switch . . . . . AUTO or OFF**

**Wait ITT < 800°C, then :**

**"STARTER" switch . . . . . OFF**

**BEFORE ANY RESTARTING ATTEMPT, CARRY OUT A MOTORING (Refer to paragraph "MOTORING")**




CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (5/5)**

Ng  $\simeq$  50 %

- "STARTER" switch ..... **OFF**

**WARNING CAS MESSAGE**            **"STARTER"**            **OFF**

**WARNING CAS MESSAGE**            **"IGNITION"**            **OFF**

■ Engine instruments ..... **CHECK Ng > 69 % ( $\pm$  2 %)**  
**(Oil pressure / ITT = green sector)**

**NOTE :**

*This behaviour should only be observed with outside low temperature (OAT < 0 °C), cold engine.*

*This procedure may be used for the first starting of the day.*

CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (5/5)**

Ng  $\simeq$  50 %

- "STARTER" switch ..... **OFF**

**WARNING CAS MESSAGE**            **"STARTER"**            **OFF**

**WARNING CAS MESSAGE**            **"IGNITION"**            **OFF**

■ Engine instruments ..... **CHECK Ng > 68 % ( $\pm$  1 %)**  
**(Oil pressure / ITT = green sector)**

**NOTE :**  
*This behaviour should only be observed with outside low temperature (OAT < 0 °C), cold engine.  
This procedure may be used for the first starting of the day.*

CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (1/5)**

1 - GPU ..... **CONNECTED**

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

- 2 - "IGNITION" switch ..... **AUTO**
- 3 - "STARTER" switch ..... **OFF**
- 4 - "INERT SEP" switch ..... **OFF**
- 5 - Landing gear control ..... **DN**

6 - "SOURCE" selector ..... **GPU**

WARNING CAS MESSAGE      **"GPU DOOR"**      **ON**

WARNING CAS MESSAGE      **"BAT OFF"**      **ON**

- Battery voltage ..... **CHECKED**  
**(V ≈ 28 Volts)**

7 - Engine controls

- "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX RPM**
- Condition lever ..... **CUT OFF**





CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (2/5)**

- 8 - FUEL panel
  - "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON"                    ON**

**WARNING CAS MESSAGE "FUEL PRESS"                    OFF**

- Fuel pressure indicator ..... **CHECK**

- 9 - Propeller ..... **AREA CLEAR**

- 10 - ENGINE START panel
  - "IGNITION" switch ..... **AUTO**
  - "STARTER" switch ..... **ON**

**WARNING CAS MESSAGE "STARTER"                    ON**

**WARNING CAS MESSAGE "IGNITION"                    ON**

*NOTE :*

*The utilization of the starter is bound by limitations mentioned in Chapter 2.4 "STARTER OPERATION LIMITS".*

Ng  $\simeq$  13 %

- Condition lever ..... **LO / IDLE**

Monitor increase of :

- ITT ..... **(max. ITT :  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.)**

- Ng
- Oil pressure

**WARNING CAS MESSAGE "OIL PRESS"                    OFF**



## CHECK-LIST PROCEDURES

### STARTING ENGINE USING EXTERNAL POWER (GPU) (3/5)

11 - "SOURCE" selector ..... **BAT**

**WARNING CAS MESSAGE**                      **"BAT OFF"**                      **OFF**

12 - Propeller governor lever ..... **FEATHER**

13 - GPU ..... **HAVE IT DISCONNECTED**

**WARNING CAS MESSAGE**                      **"GPU DOOR"**                      **OFF**

14 - Condition lever ..... **HI / IDLE**

15 - Propeller governor lever ..... **MAX. RPM**

■ 16 - Engine instruments ..... **CHECK : Ng  $\simeq$  69 % ( $\pm$  2 %)**  
**(Oil pressure / Oil temperature / ITT = green sector)**

17 - FUEL panel

- "AUX BP" switch ..... **AUTO**

**WARNING CAS MESSAGE**                      **"AUX BOOST PMP ON"**                      **OFF**

18 - Generator

**WARNING CAS MESSAGE**                      **"MAIN GEN"**                      **OFF**

**RESET if necessary**

- Ammeters ..... **CHARGE CHECKED**

- Voltmeters ..... **VOLTAGE CHECKED**

**(V  $\simeq$  28 Volts)**

## CHECK-LIST PROCEDURES

### STARTING ENGINE USING EXTERNAL POWER (GPU) (3/5)

- 11 - "SOURCE" selector ..... **BAT**  
     **WARNING CAS MESSAGE**            **"BAT OFF"**            **OFF**
  
- 12 - Propeller governor lever ..... **FEATHER**
- 13 - GPU ..... **HAVE IT DISCONNECTED**  
     **WARNING CAS MESSAGE**            **"GPU DOOR"**            **OFF**
  
- 14 - Condition lever ..... **HI / IDLE**
- 15 - Propeller governor lever ..... **MAX. RPM**
- 16 - Engine instruments ..... **CHECK : Ng  $\simeq$  68 % ( $\pm$  1 %)**  
     **(Oil pressure / Oil temperature / ITT = green sector)**
  
- 17 - FUEL panel  
     - "AUX BP" switch ..... **AUTO**  
     **WARNING CAS MESSAGE**    **"AUX BOOST PMP ON"**            **OFF**
  
- 18 - Generator  
     **WARNING CAS MESSAGE**            **"MAIN GEN"**            **OFF**  
     **RESET if necessary**  
     - Ammeters ..... **CHARGE CHECKED**  
     - Voltmeters ..... **VOLTAGE CHECKED**  
   **(V  $\simeq$  28 Volts)**

CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (4/5)**

**CAUTION**

**IF 10 SECONDS AFTER HAVING POSITIONED CONDITION LEVER TO "LO / IDLE" THERE IS NO IGNITION OR IF DURING IGNITION SEQUENCE, OVERTEMPERATURE INDICATION APPEARS (MAX. ITT : 870°C FOR MORE THAN 20 SECONDS - 1000°C FOR MORE THAN 5 SECONDS),**

**INTERRUPT STARTING PROCEDURE :**

**Condition lever ..... CUT OFF**

**"IGNITION" switch ..... OFF**

**Wait ITT < 800°C, then :**

**"STARTER" switch ..... OFF**

**BEFORE ANY RESTARTING ATTEMPT, CARRY OUT A MOTORING  
(Refer to paragraph "MOTORING")**

**CAUTION**

**IF ENGINE STAGNATES,**

**INTERRUPT STARTING PROCEDURE :**

**Condition lever ..... CUT OFF**

**"IGNITION" switch ..... OFF**

**"STARTER" switch ..... OFF**

**WAIT FOR 1 MINUTE (Refer to Chapter 2.4 "STARTER OPERATION LIMITS"), THEN TRY TO RESTART**



CHECK-LIST PROCEDURES

**STARTING ENGINE USING  
 EXTERNAL POWER (GPU) (5/5)**

ENGINE START panel

- "IGNITION" switch ..... **AUTO**
- "STARTER" switch ..... **ON**

WARNING CAS MESSAGE      **"STARTER"**      **ON**

WARNING CAS MESSAGE      **"IGNITION"**      **ON**

Ng  $\simeq$  13 %

- Condition lever ..... **HI / IDLE**

Monitor increase of :

- ITT ..... (max. ITT  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.)
- Ng
- Oil pressure

WARNING CAS MESSAGE      **"OIL PRESS"**      **OFF**

Ng  $\simeq$  50 %

- "STARTER" switch ..... **OFF**

WARNING CAS MESSAGE      **"STARTER"**      **OFF**

WARNING CAS MESSAGE      **"IGNITION"**      **OFF**

Engine instruments ..... **CHECK Ng increasing to 69 % ( $\pm$  2 %)**  
**(Oil pressure / ITT = green sector)**

**NOTE :**

*This behaviour should only be observed with outside low temperature (OAT < 0 °C), cold engine.  
 This procedure may be used for the first starting of the day.*



CHECK-LIST PROCEDURES

**MOTORING (1/2)**

**CAUTION**

**AFTER ANY STARTING INTERRUPT PROCEDURE :**

- **WAIT FOR ENGINE TOTAL SHUT-DOWN**
- **WAIT AT LEAST 30 SECONDS BEFORE INITIATING A MOTORING**

- 1 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX. RPM**
- Condition lever ..... **CUT OFF**

- 2 - Fuel
  - Tank selector ..... **L or R**
  - "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**

**WARNING CAS MESSAGE "FUEL PRESS" OFF**



## CHECK-LIST PROCEDURES

### MOTORING (2/2)

3 - "IGNITION" switch ..... OFF  
WARNING CAS MESSAGE "IGNITION" OFF

*To clear fuel and vapor internally trapped :*

4 - "STARTER" switch ..... ON  
during 15 sec maxi  
WARNING CAS MESSAGE "STARTER" ON

*To cool engine following shut-down in high temperature environment :*

4 - "STARTER" switch ..... ON  
during 30 sec  
WARNING CAS MESSAGE "STARTER" ON

5 - "STARTER" switch ..... OFF  
WARNING CAS MESSAGE "STARTER" OFF

6 - FUEL panel  
- "AUX BP" switch ..... OFF  
WARNING CAS MESSAGE "AUX BOOST PMP ON" OFF  
WARNING CAS MESSAGE "FUEL PRESS" ON



CHECK-LIST PROCEDURES

**MOTORIZING FOLLOWED BY  
AN ENGINE START (1/2)**

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

- 1 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**  
**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX. RPM**
- Condition lever ..... **CUT OFF**

- 2 - Fuel
  - Tank selector ..... **L or R**
  - "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**

**WARNING CAS MESSAGE "FUEL PRESS" OFF**

- 3 - "IGNITION" switch ..... **OFF**

- 4 - "STARTER" switch ..... **ON during 15 sec**

- 5 - After 15 seconds :
  - "IGNITION" switch ..... **AUTO or ON**
  - Ng ..... **Check at  $\approx$  13 %**
  - Condition lever ..... **LO / IDLE**



CHECK-LIST PROCEDURES

**MOTING FOLLOWED BY  
 AN ENGINE START (2/2)**

- 6 - Monitor increase of :
  - ITT ..... (max. ITT  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.)

- Ng
- Oil pressure

WARNING CAS MESSAGE      **"OIL PRESS"**      OFF

Ng  $\simeq$  50 % stable

- "STARTER" switch ..... OFF

WARNING CAS MESSAGE      **"STARTER"**      OFF

WARNING CAS MESSAGE      **"IGNITION"**      OFF

if "IGNITION" switch ... **AUTO**

WARNING CAS MESSAGE      **"IGNITION"**      ON

if "IGNITION" switch ... **ON**, then switch to **AUTO**

WARNING CAS MESSAGE      **"IGNITION"**      Off

- 7 - Engine instruments ..... **CHECK : Ng > 52 %**  
 (Oil pressure / ITT = green sector)

- 8 - Condition lever ..... **HI / IDLE**

- 9 - Engine instruments ..... **CHECK : Ng  $\simeq$  69 % ( $\pm$  2 %)**  
 (Oil pressure / Oil temperature / ITT = green sector)

- 10 - FUEL panel

- "AUX BP" switch ..... **AUTO**

WARNING CAS MESSAGE      **"AUX BOOST PMP ON"**      OFF

- 11 - Generator

WARNING CAS MESSAGE      **"MAIN GEN"**      OFF

**RESET if necessary**

- Ammeters ..... **CHARGE CHECKED**

- Voltmeters ..... **VOLTAGE CHECKED**  
 (V  $\simeq$  28 Volts)

## CHECK-LIST PROCEDURES

**MOTING FOLLOWED BY  
AN ENGINE START (2/2)**

6 - Monitor increase of :

- ITT ..... (max.  $ITT \leq 870^{\circ}\text{C}$  for 20 seconds max.  
 $\leq 1000^{\circ}\text{C}$  for 5 seconds max.)

- Ng

- Oil pressure

WARNING CAS MESSAGE	<b>"OIL PRESS"</b>	OFF
---------------------	--------------------	-----

Ng  $\simeq$  50 % stable

- "STARTER" switch .....	OFF
--------------------------	-----

WARNING CAS MESSAGE	<b>"STARTER"</b>	OFF
---------------------	------------------	-----

WARNING CAS MESSAGE	<b>"IGNITION"</b>	OFF
---------------------	-------------------	-----

if "IGNITION" switch ... **AUTO**

WARNING CAS MESSAGE	<b>"IGNITION"</b>	ON
---------------------	-------------------	----

if "IGNITION" switch ... **ON**, then switch to **AUTO**

WARNING CAS MESSAGE	<b>"IGNITION"</b>	Off
---------------------	-------------------	-----

7 - Engine instruments .....	<b>CHECK : Ng &gt; 52 %</b> <b>(Oil pressure / ITT = green sector)</b>
------------------------------	---

8 - Condition lever .....	<b>HI / IDLE</b>
---------------------------	------------------

9 - Engine instruments .....	<b>CHECK : Ng <math>\simeq</math> 68 % (<math>\pm</math> 1 %)</b> <b>(Oil pressure / Oil temperature / ITT = green sector)</b>
------------------------------	---

10 - FUEL panel

- "AUX BP" switch .....	<b>AUTO</b>
-------------------------	-------------

WARNING CAS MESSAGE	<b>"AUX BOOST PMP ON"</b>	OFF
---------------------	---------------------------	-----

11 - Generator

WARNING CAS MESSAGE	<b>"MAIN GEN"</b>	OFF
---------------------	-------------------	-----

**RESET if necessary**

- Ammeters .....	<b>CHARGE CHECKED</b>
------------------	-----------------------

- Voltmeters .....	<b>VOLTAGE CHECKED</b>
--------------------	------------------------

**(V  $\simeq$  28 Volts)**

CHECK-LIST PROCEDURES

**AFTER STARTING ENGINE (1/2)**

- 1 - "GENERATOR" selector
  - On "MAIN" ..... **Voltage and current checked**when battery current  $\leq$  50 amps :
  - on "ST-BY" ..... **Voltage and current checked**  
**(reset if necessary)**
  - then again on "MAIN"
- 2 - "AVIONICS" MASTER switch ..... **ON**
- 3 - "AP TRIMS" MASTER switch ..... **ON**
- 4 - PFD 1, MFD and PFD 2
  - Brightness ..... **ADJUST**  
**If necessary**
  - DISPLAY BACKUP button ..... **CHECK**  
**then return to NORMAL mode**

■ *When battery current < 100 A :*

- 5 - ECS panel
  - "BLEED VALVE" switch ..... **ON (LO or HI)**
  - "CABIN FAN" switch ..... **As required**
  - "FREON" or "AIR COND" switch (if installed) .. **As required**
  - "CABIN TEMP" selector ..... **ADJUST**
  - "DEFOG / NORMAL" distributor ..... **AS REQUIRED**
  - Cabin altitude selector ..... **Airfield altitude - 500 feet**
  - Cabin rate selector ..... **ARROW UPWARDS**  
**(at the halfway post)**
- 6 - Stand-by instruments ..... **CHECKED**
  - Suction gage [Pre-MOD70-0335-34 (ESI-2000)] ... **CHECKED**
- 7 - ADI/HSI on PFD1 / PFD2 ..... **CHECKED**
- 8 - Altimeter setting ..... **CHECKED**



## CHECK-LIST PROCEDURES

### AFTER STARTING ENGINE (2/2)

- 9 - VHF/VOR/GPS ..... **ADJUSTED**
  - Radar/Stormscope/TAS/TAWS/
  - Radio altimeter (if installed) ..... **ADJUSTED**
- 10 - MFD flight management
  - Weight computing ..... **SET/CHECKED**
  - FOB synchro ..... **SET**
  - FPL (if requested) ..... **SET**
- 11 - AP / TRIMS
  - "AP TRIMS" MASTER operation ..... **CHECK**
  - Pitch trim ..... **UP / DN, then ADJUSTED**
  - Yaw trim ..... **L / R, then ADJUSTED**
  - Roll trim ..... **L / R, then ADJUSTED**
- 12 - DE ICE SYSTEM panel
  - MFD on system page
  - "PROP DE ICE" switch ..... **ON**  
**Check illumination of the green light located above the switch**
  - "PROP DE ICE" switch ..... **OFF**
  - "WINDSHIELD" switch ..... **ON**  
**Check illumination of the green light(s) located above the switch (except if hot conditions)**
  - "WINDSHIELD" switch ..... **OFF**

Increase power so as to get Ng ≥ 80% to check AIRFRAME DE ICE

  - "AIRFRAME DE ICE" switch ..... **ON**  
**Visually check functioning of deicer boots during 1 total cycle and illumination of the two green lights located above the switch**
  - "AIRFRAME DE ICE" switch ..... **OFF**
  - "INERT SEP" switch ..... **ON**

**WARNING CAS MESSAGE "INERT SEP ON" ON**  
 after 30 seconds

CHECK-LIST PROCEDURES

**TAXIING**

- 1 - "TAXI" light ..... **ON**
- 2 - "INERT SEP" switch ..... **CHECKED ON**  
**CHECK WARNING CAS MESSAGE "INERT SEP ON" ON**
- 3 - Passenger briefing ..... **AS REQUIRED**
- 4 - Parking brake ..... **RELEASED**  
**WARNING CAS MESSAGE "PARK BRAKE" OFF**
- 5 - L.H. and R.H. seats brakes ..... **CHECKED**
- 6 - Nose wheel steering ..... **CHECKED**
- 7 - Power lever ..... **AS REQUIRED**

**CAUTION**

**AVOID USING REVERSE DURING TAXIING**

- 8 - Flight instruments ..... **CHECK**
- 9 - CAS display ..... **CHECK**

## CHECK-LIST PROCEDURES

### BEFORE TAKEOFF (1/2)

1 - Parking brake ..... **SET**

**WARNING CAS MESSAGE "PARK BRAKE" ON**

2 - Condition lever ..... **HI / IDLE**

**[Ng : 68 % (± 2 %)]**

3 - Propeller governor lever ..... **FEATHER twice,  
 then MAX. RPM**

4 - Flaps ..... **TO**

5 - DE ICE SYSTEM panel

- "AIRFRAME DE ICE" switch ..... **As required**

- "PROP DE ICE" switch ..... **As required**

*If runway is in good condition, without icing conditions :*

- "INERT SEP" switch ..... **OFF**

**WARNING CAS MESSAGE "INERT SEP ON" OFF**

*If there is standing water or other contamination on the runway :*

- "INERT SEP" switch ..... **Leave ON**

**WARNING CAS MESSAGE "INERT SEP ON" ON**

- "WINDSHIELD" switch ..... **As required**

- "PITOT 1 HTR" switch ..... **ON**

- "PITOT 2 & STALL HTR" switch ..... **ON**

6 - Flight controls ..... **DEFLECTIONS CHECKED**

7 - Trims

- Pitch ..... **ADJUSTED**

- Yaw ..... **ADJUSTED**

- Roll ..... **ADJUSTED**



## CHECK-LIST PROCEDURES

### BEFORE TAKEOFF (1/2)

1 - Parking brake ..... **SET**

**WARNING CAS MESSAGE "PARK BRAKE" ON**

2 - Condition lever ..... **HI / IDLE**

**[Ng : 68 % (± 1 %)]**

3 - Propeller governor lever ..... **FEATHER twice,  
 then MAX. RPM**

4 - Flaps ..... **TO**

5 - DE ICE SYSTEM panel

- "AIRFRAME DE ICE" switch ..... **As required**

- "PROP DE ICE" switch ..... **As required**

*If runway is in good condition, without icing conditions :*

- "INERT SEP" switch ..... **OFF**

**WARNING CAS MESSAGE "INERT SEP ON" OFF**

*If there is standing water or other contamination on the runway :*

- "INERT SEP" switch ..... **Leave ON**

**WARNING CAS MESSAGE "INERT SEP ON" ON**

- "WINDSHIELD" switch ..... **As required**

- "PITOT 1 HTR" switch ..... **ON**

- "PITOT 2 & STALL HTR" switch ..... **ON**

6 - Flight controls ..... **DEFLECTIONS CHECKED**

7 - Trims

- Pitch ..... **ADJUSTED**

- Yaw ..... **ADJUSTED**

- Roll ..... **ADJUSTED**





CHECK-LIST PROCEDURES

**BEFORE TAKEOFF (2/2)**

- 8 - Pilot's / Passengers' belts ..... **CHECK**
  - Passengers' table ..... **REMOVED**
  
- 9 - "STROBE" switch ..... **ON**
  
- 10 - CAS display ..... **CHECK**
  - All messages OFF,**
  - except "PARK BRAKE" ON**
  - and, if used "INERT SEP ON" ON**
  
- 11 - Fuel
  - Gages : quantity, symmetry ..... **CHECKED**
  - "FUEL SEL" switch ..... **CHECK AUTO**
  - "AUX BP" fuel switch ..... **CHECK AUTO**
  
- 12 - Flight instruments ..... **CHECKED**
  - Altimeter setting ..... **ADJUSTED/CHECKED**
  - "ALT SEL" ..... **ADJUSTED/CHECKED**
  
- 13 - VHF/VOR/GPS/XPDR ..... **ADJUSTED/CHECKED**
  - Radar/Stormscope/TAS/TAWS/ADF  
(if installed) ..... **ADJUSTED/CHECKED**
  - Radio altimeter (if installed) ..... **ADJUSTED/CHECKED**
  - Transponder code ..... **ADJUSTED/CHECKED**
  
- 14 - Engine instruments ..... **CHECK**
  
- 15 - Battery charge ..... **< 50 Amperes**

**CAUTION**  
**DO NOT TAKE OFF IF BATTERY CHARGE > 50 Amperes**

- 16 - Parking brake ..... **RELEASED**
  - WARNING CAS MESSAGE "PARK BRAKE" OFF**

## CHECK-LIST PROCEDURES

### TAKEOFF (1/2)

#### WHEN LINED UP

#### CAUTION

- IF HEAVY PRECIPITATION, TURN IGNITION AND INERT SEP ON.
- IF ICING CONDITIONS ARE FORESEEN, REFER TO CHAPTER 4.5, PARAGRAPH "FLIGHT INTO KNOWN ICING CONDITIONS"

- 1 - Horizon ..... **CHECK attitude  $\approx + 2^\circ$**
- 2 - Heading - HSI - Stand-by compass ..... **CHECK**
  - Altimeter setting ..... **CHECK**
- 3 - Lights
  - "L.LDG / TAXI / R.LDG" ..... **ON**
- 4 - Engine instruments ..... **CHECK**  
 (ITT = green sector)
- 5 - CAS display ..... **CHECK**  
 All messages OFF,  
 except "INERT SEP ON" if used  
 except "IGNITION" if used
- 6 - PROP O' SPEED GOVERNOR TEST
  - Increase power until propeller RPM reaches 1900 RPM
  - PROP O' SPEED ..... **TEST : Maintain engaged**
  - Observe that propeller RPM decreases by 50 to 250 RPM
  - PROP O' SPEED ..... **TEST : Release**
  - Check that propeller RPM increases by a minimum of 50 RPM when compared to minimum value during PROP O'SPEED test.



CHECK-LIST PROCEDURES

**TAKEOFF (2/2)**

- 7 - Brakes ..... **RELEASED**
- 8 - Power lever ..... **TRQ = 100 %**
- 9 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**
  - Normal take off ..... **ATTITUDE : 7°5**
  - Short take off ..... **ATTITUDE : 15°**
- 10 - Vertical speed indicator ..... **POSITIVE**
- 11 - Brakes ..... **APPLY (Briefly)**
- 12 - Landing gear control ..... (IAS < 128 KIAS) ..... **UP**  
**At sequence end, check : All warning lights OFF**
- 13 - Lights
  - "TAXI" ..... **OFF**
  - "L.LDG / R.LDG" ..... **AS REQUIRED**
- 14 - Initial climb speed ..... **110 KIAS**
- 15 - Flaps ..... **UP**
- 16 - Climb speed (recommended) ..... **130 KIAS**
- 17 - "YAW DAMPER" push-button ..... **ON**

## CHECK-LIST PROCEDURES

**CLIMB**

- 1 - Power lever ..... **ADJUST according to engine operation table - Chapter 5.7 or to MXCL indicator on the PFDs**

**CAUTION**

**OBSERVE TRQ / Ng / Np / ITT / T° AND OIL PRESSURE LIMITATIONS. USE OPTIMUM TORQUE AND/OR REFER TO TABLES IN CHAPTER 5.7**

- 2 - Climb speed ..... **AS REQUIRED**
- 3 - ECS panel
- Cabin altitude selector ..... **Cruise altitude + 1000 feet**
  - Cabin rate selector ..... **ADJUST**
  - Pressurization ..... **CHECK**
  - "CABIN TEMP" selector ..... **ADJUST**
- 4 - Fuel tank gages ..... **CHECK / CORRECT (Quantity / Symmetry)**
- 5 - DE ICE SYSTEM ..... **As required Refer to Chapter 4.5 "PARTICULAR PROCEDURES"**

**CAUTION**

**IF HEAVY PRECIPITATION, TURN IGNITION AND INERT SEP ON**

CHECK-LIST PROCEDURES

**CRUISE**

- 1 - Power lever ..... **ADJUST according to engine operation table - Chapter 5.7 or to Cruise index on the PFDs**

**CAUTION**  
**OBSERVE TRQ / Ng / Np / ITT / T°**  
**AND OIL PRESSURE LIMITATIONS**  
**USE OPTIMUM TORQUE AND / OR REFER TO**  
**TABLES IN CHAPTER 5.7)**

- 2 - Pressurization ..... **CHECK**

- 3 - Fuel  
- Gages ..... **CHECK**

**REGULARLY CHECK :**

- **consumption**
- **expected fuel at destination**

Pre-MOD70-0402-28

- **tank automatic change (every 10 minutes)**

Post-MOD70-0402-28

- **tank automatic change (every 5 minutes)**

All

- **symmetry [max. dissymmetry 25 us gal (95 Litres)]**

- 4 - DE ICE SYSTEM ..... **As required**  
**Refer to Chapter 4.5**  
**"PARTICULAR PROCEDURES"**

**CAUTION**  
**IF HEAVY PRECIPITATION, TURN IGNITION**  
**AND INERT SEP ON**

## CHECK-LIST PROCEDURES

**DESCENT**

- |                                 |                                     |
|---------------------------------|-------------------------------------|
| 1 - Altimeter settings .....    | <b>COMPLETE</b>                     |
| 2 - "ALT SEL" .....             | <b>SELECTED</b>                     |
| 3 - ECS panel                   |                                     |
| - Cabin altitude selector ..... | <b>Airfield altitude + 500 feet</b> |
| - Cabin rate selector .....     | <b>Adjusted</b>                     |
| 4 - DE ICE SYSTEM .....         | <b>As required</b>                  |
|                                 | <b>Refer to Chapter 4.5</b>         |
|                                 | <b>"PARTICULAR PROCEDURES"</b>      |

**CAUTION**

**IF HEAVY PRECIPITATION, TURN IGNITION  
AND INERT SEP ON**

**CAUTION**

**USE OF CONTROL REVERSE BETA ( $\beta$ ) RANGE (BEHIND  
THE FLIGHT IDLE POSITION) IS PROHIBITED DURING  
FLIGHT**

- |  |                              |
|--|------------------------------|
| 5 - Windshield misting protection system ..... | <b>As required</b>           |
| 6 - Fuel                                       |                              |
| - Gages .....                                  | <b>CHECK</b>                 |
|  | <b>(Quantity / Symmetry)</b> |
| - Fullest tank .....                           | <b>SELECT</b>                |
| 7 - Passengers briefing .....                  | <b>As required</b>           |
| 8 - Seats, belts and harnesses .....           | <b>LOCKED</b>                |
| 9 - Passengers' table .....                    | <b>REMOVED</b>               |

CHECK-LIST PROCEDURES

**BEFORE LANDING**

**Long final**

- 1 - Altimeters ..... **CHECK**
- 2 - Fuel
  - Gages ..... **CHECK**  
 (Quantity / Symmetry)
  - Fullest tank ..... **SELECT**
- 3 - "INERT SEP" switch ..... (IAS ≤ 200 KIAS) ..... **ON**
- 4 - Propeller lever ..... **MAX RPM**
- 5 - Landing gear control ..... (IAS ≤ 178 KIAS) ..... **DN**
  - 3 green indicator lights ..... **ON**
  - Red warning light ..... **OFF**
- 6 - Flaps ..... (IAS ≤ 178 KIAS) ..... **TO**
- 7 - Lights
  - "L.LDG / TAXI / R.LDG" ..... **ON**

**Short final**

- 8 - Autopilot ..... **OFF**
- 9 - Flaps ..... (IAS ≤ 122 KIAS) ..... **LDG**
- 10 - Approach speed (Flaps LDG) ..... **80 KIAS**
- 11 - "YAW DAMPER" push-button ..... **OFF**

CHECK-LIST PROCEDURES

**LANDING**

1 - Power lever ..... **IDLE**

**After wheels touch**

2 - Reverse ..... **As required**

(Reverse may be applied as soon as the wheels touch the ground.)  
To avoid ingestion of foreign objects, come out the reverse as speed reduces and use the brakes if necessary for further deceleration.

**CAUTION**

**USE OF CONTROL REVERSE BETA ( $\beta$ ) RANGE (BEHIND THE FLIGHT IDLE POSITION) IS PROHIBITED DURING FLIGHT**

**CAUTION**

**ON SNOWY OR DIRTY RUNWAY, IT IS BETTER NOT TO USE REVERSE**

3 - Brakes ..... **As required**



CHECK-LIST PROCEDURES

<b>GO-AROUND</b>	
1 - Simultaneously	
- Power lever .....	<b>TRQ = 100 %</b>
- Attitude .....	<b>7°5</b>
2 - Flaps .....	<b>TO</b>
<i>If the vertical speed is positive and if IAS is at or above 85 kt :</i>	
3 - Landing gear control .....	<b>UP</b>
	<b>All warning lights OFF</b>
<i>If IAS is at or above 110 kt :</i>	
4 - Flaps .....	<b>UP</b>
5 - Climb speed .....	<b>AS REQUIRED</b>

CHECK-LIST PROCEDURES

**TOUCH AND GO**

**After wheels touch**

- 1 - Flaps ..... **TO**
- 2 - Elevator trim ..... **Green sector**
- 3 - Power lever ..... **Display TRQ = 100 %**
- 4 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**  
**ATTITUDE : 7°5**

**AFTER LANDING**

**RUNWAY CLEAR - AIRPLANE STOPPED**

- 1 - DE ICE SYSTEM panel
  - "AIRFRAME DE ICE" switch ..... **OFF**
  - "PROP DE ICE" switch ..... **OFF**
  - "INERT SEP" switch ..... **CHECKED ON**
  - "WINDSHIELD" switch ..... **As required**
  - "PITOT 1 HTR" switch ..... **OFF**
  - "PITOT 2 & STALL HTR" switch ..... **OFF**
  - "BLEED VALVE" switch ..... **As required**
- 2 - Flaps ..... **UP**
- 3 - Lights
  - "L.LDG / R.LDG" ..... **OFF**
  - "TAXI" ..... **ON**
- 4 - "STROBE" switch ..... **OFF**

CHECK-LIST PROCEDURES

**SHUT-DOWN (1/2)**

- 1 - Parking brake ..... **SET**  
**WARNING CAS MESSAGE "PARK BRAKE" ON**
- 2 - Pressurization
  - "BLEED VALVE" switch ..... **OFF**
  - Check for cabin depressurization
- 3 - "FAN FLOW" switch (if installed) ..... **As required**
- 4 - "AIR COND" switch (if installed) ..... **OFF**
- 5 - Condition lever ..... **HI / IDLE**
- 6 - Power lever ..... **IDLE for 2 minutes**
- 7 - "TAXI" light ..... **OFF**
- 8 - "AP / TRIMS MASTER" switch ..... **OFF**

**CAUTION**

**IN CASE OF SHUT-DOWN ON A CONTAMINATED AREA :**

- **Condition lever** ..... **CUT OFF**
- **Propeller governor lever** ..... **FEATHER**

- 9 - Propeller governor lever ..... **FEATHER for 15 seconds**
- 10 - Condition lever ..... **CUT OFF**
- 11 - "INERT SEP" switch ..... **OFF**
- 12 - "AVIONICS" MASTER switch ..... **OFF**
- 13 - EXT LIGHTS panel
  - All switches ..... **OFF**
- 14 - INT LIGHTS panel
  - All switches ..... **OFF**



CHECK-LIST PROCEDURES

**SHUT-DOWN (1/2)**

- |  |                                   |
|--|-----------------------------------|
| 1 - Parking brake .....                    | <b>SET</b>                        |
| <b>WARNING CAS MESSAGE "PARK BRAKE"</b>    | <b>ON</b>                         |
|  |                                   |
| 2 - Pressurization                         |                                   |
| - "BLEED VALVE" switch .....               | <b>OFF</b>                        |
| - Check for cabin depressurization         |                                   |
| 3 - "FAN FLOW" switch (if installed) ..... | <b>As required</b>                |
| 4 - "AIR COND" switch (if installed) ..... | <b>OFF</b>                        |
| 5 - Condition lever .....                  | <b>HI / IDLE</b>                  |
| 6 - Power lever .....                      | <b>IDLE for 2 minutes minimum</b> |
| 7 - "TAXI" light .....                     | <b>OFF</b>                        |
| 8 - "AP / TRIMS MASTER" switch .....       | <b>OFF</b>                        |

**CAUTION**

**IN CASE OF SHUT-DOWN ON A CONTAMINATED AREA :**

- **Condition lever** .....
- **Propeller governor lever** .....

- |                                     |                               |
|-------------------------------------|-------------------------------|
| 9 - Propeller governor lever .....  | <b>FEATHER for 15 seconds</b> |
| 10 - Condition lever .....          | <b>CUT OFF</b>                |
| 11 - "INERT SEP" switch .....       | <b>OFF</b>                    |
| 12 - "AVIONICS" MASTER switch ..... | <b>OFF</b>                    |
| 13 - EXT LIGHTS panel               |                               |
| - All switches .....                | <b>OFF</b>                    |
| 14 - INT LIGHTS panel               |                               |
| - All switches .....                | <b>OFF</b>                    |



## CHECK-LIST PROCEDURES

### SHUT-DOWN (2/2)

- 15 - Fuel
  - "AUX BP" switch ..... **OFF**
  - "FUEL SEL" switch ..... **MAN**
  - Tank selector ..... **OFF**
- 16 - "GENERATOR" selector ..... **OFF**
- 17 - "SOURCE" selector ..... **OFF**
- 18 - CRASH lever ..... **PULL DOWN**
- 19 - Parking brake ..... **As required**

#### CAUTION

**IN CASE OF HIGH OAT [ABOVE 35° C (95° F)], IT IS REQUIRED TO PERFORM 30 SECONDS DRY MOTORING RUN AFTER SHUT-DOWN TO IMPROVE COOLING OF THE BEARING CAVITIES AND MINIMIZE OIL COKING (REFER TO PARAGRAPH "MOTORING")**

#### Post-MOD70-0335-34 (ESI-2000)

- ESI-2000 - NORMAL PROCEDURE

No pilot action required for normal shutdown. The ESI-2000 will shut down within 5 minutes.

- ESI-2000 - MANUAL PROCEDURE

The ESI-2000 can be manually shut down when in the discharge mode to conserve battery power :

- Remove all aircraft power from the ESI
- Press any key (button) as stated by the on screen message
- Press the M (Menu) button repeatedly until shutdown menu is shown.
- Press and hold the + (Hold) button until "SHUTTING DN" message is shown in the upper left corner of the screen.

## CHECK-LIST PROCEDURES

**SHUT-DOWN (2/2)**

- 15 - Fuel
- "AUX BP" switch ..... **OFF**
  - "FUEL SEL" switch ..... **MAN**
  - Tank selector ..... **OFF**
- 16 - "GENERATOR" selector ..... **OFF**
- 17 - "SOURCE" selector ..... **OFF**
- 18 - CRASH lever ..... **PULL DOWN**
- 19 - Parking brake ..... **As required**

**CAUTION**

**IN CASE OF HIGH OAT [ABOVE 35° C (95° F)], IT IS RECOMMENDED TO PERFORM 30 SECONDS DRY MOTORING RUN AFTER SHUT-DOWN TO IMPROVE COOLING OF THE BEARING CAVITIES AND PREVENT OIL COKING (REFER TO PARAGRAPH "MOTORING")**

Post-MOD70-0335-34 (ESI-2000)

## - ESI-2000 - NORMAL PROCEDURE

No pilot action required for normal shutdown. The ESI-2000 will shut down within 5 minutes.

## - ESI-2000 - MANUAL PROCEDURE

The ESI-2000 can be manually shut down when in the discharge mode to conserve battery power :

- . Remove all aircraft power from the ESI
- . Press any key (button) as stated by the on screen message
- . Press the M (Menu) button repeatedly until shutdown menu is shown.
- . Press and hold the + (Hold) button until "SHUTTING DN" message is shown in the upper left corner of the screen.

INTENTIONALLY LEFT BLANK

**4.4 - AMPLIFIED PROCEDURES**

**PREFLIGHT INSPECTION**

**A - INSIDE INSPECTIONS**

**Cockpit** (1)

- CRASH lever ..... **UP**

1 - DE ICE SYSTEM panel

- All switches ..... **OFF**

2 - ELECTRIC POWER panel

- "SOURCE" selector ..... **OFF**

- "GENERATOR" selector ..... **OFF**

3 - ENGINE START panel

- "IGNITION" switch ..... **AUTO or OFF**

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

- "STARTER" switch ..... **OFF**

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

4 - INT LIGHTS panel ..... **OFF**

5 - EXT LIGHTS panel

- All switches ..... **OFF**

6 - Breakers panel

- All breakers ..... **ENGAGED**

7 - Landing gear control ..... **DN**





AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

- 8 - Landing gear emergency control  
Open door of emergency landing gear compartment.
  - Lever ..... **PULLED DOWN**
  - By-pass selector ..... **PUSHED**
  - Door ..... **IN PLACE**  
By-pass selector must be pushed at its maximum stop, so as to have the door in place.
  
- 9 - "AVIONICS" MASTER switch ..... **OFF**
  
- 10 - "AP / TRIMS MASTER" switch ..... **OFF**
  
- 11 - ECS panel
  - "BLEED VALVE" switch ..... **OFF**
  - "CABIN FAN" switch ..... **OFF**
  - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
  - "DUMP" switch ..... **GUARDED**
  
- 12 - RAM AIR control knob ..... **PUSHED**
  
- 13 - Fuel
  - "FUEL SEL" selector ..... **MAN**
  - "AUX BP" switch ..... **OFF**
  - Tank selector ..... **L or R**
  
- 14 - Flight control lock ..... **REMOVED / STOWED**  
The flight control lock is normally stowed in the front cargo compartment with the towing bar and the blanking covers.
  
- 15 - Flight controls ..... **Deflections checked**
  
- 16 - Parking brake ..... **SET**
  
- 17 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**



## AMPLIFIED PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

When engine is shut-off, a lack of hydraulic pressure prevents movement into reverse range. Trying to force the mechanism will cause damage.

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX. RPM**
- Condition lever ..... **CUT OFF**

## 18 - BAT BUS power supply

- Access lighting ..... **CHECKED**
- Emergency lighting ..... **CHECKED**

This check allows to ensure that the fuse of the "BAT BUS" operates correctly.

19 - Flaps control ..... **UP****CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

- 20 - "IGNITION" switch ..... **AUTO**
- 21 - "STARTER" switch ..... **OFF**
- 22 - Landing gear control ..... **DN**

23 - "SOURCE" selector ..... **BAT or GPU**24 - "AVIONICS" MASTER switch ..... **START**

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

25 - PFD1 DISPLAY BACKUP button . . . . . **OUT**

26 - Voltage . . . . . **CHECK**

- BAT . . . . . **> 24.5 Volts**  
If not, use a GPU or charge battery. This minimum voltage is not an absolute guarantee for a correctly charged battery, particularly with a cadmium nickel technology. 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).
- GPU . . . . . **≈ 28 Volts**  
If using a GPU, ensure that it provides a 28-volt regulated voltage, with negative on earth, as well as it supplies 800 amperes minimum and 1400 amperes maximum. See placard located near ground power receptacle door.

27 - EXT LIGHTS panel

- "LTS TEST" push button . . . . . **PRESS**  
**(3 green lamps "L.LDG / TAXI / R.LDG" ON)**  
**(red and amber MASTER warnings ON)**
- "L.LDG / TAXI / R.LDG" switches . . . . . **ON**  
**(3 green lamps ON)**

An outside inspection is not necessary ; the illuminated three green lamps located on switches prove the correct operation of the three landing lights.

- "L.LDG / TAXI / R.LDG" switches . . . . . **OFF**



## AMPLIFIED PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

## 28 - Oxygen emergency system

<b>WARNING CAS MESSAGE</b>	<b>“OXYGEN”</b>	<b>OFF</b>
----------------------------	-----------------	------------

If not, seek which of the oxygen generators has been activated. The amber strip around each generator becomes black by thermal effect, if the generator has been operated. Moreover, check regularly oxygen masks good condition, check them for correct connection to their lanyards and that incorporated microphones (pilot only) are correctly connected (in oxygen drawer) to radio system. Oxygen emergency system in good operation condition must be imperatively taken on board during all flights, even at low altitude in order to be used in case of smoke in the cabin. Operation of the system can not be checked ; only good condition of the different components can be checked.

29 - INT LIGHTS panel . . . . .	<b>CHECK</b>
---------------------------------	--------------

30 - ECS panel	
- "LT TEST" push button	
(if vapor cycle cooling system installed) . . . . .	<b>PRESS</b>
	<b>(green lamp ON)</b>

31 - CAS display . . . . .	<b>CHECK</b>
----------------------------	--------------

32 - Left and right fuel quantities . . . . .	<b>CHECK</b>
---	--------------

33 - Flaps . . . . .	<b>LDG</b>
----------------------	------------

34 - Landing gear panel . . . . .	<b>Warning lights : 3 GREEN ON</b>
	<b>Test 1, then 2 : RED FLASHING + 3 GREEN ON</b>
"Test 1" and "2" correspond to BUS2 or ESS2 bars which feed them respectively.	



AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

- 35 - DE ICE SYSTEM panel
  - "PITOT 1 HTR" switch ..... **ON**  
**WARNING CAS MESSAGE "PITOT HT 1" ON**
  - "PITOT 2 & STALL HTR" switch ..... **ON**  
Correct operation of pitot (PITOT 1 and 2) tube heating elements and of stall aural warning system (STALL HTR) is indicated by display of corresponding CAS message, when control switches are ON.  
**WARNING CAS MESSAGE "PITOT HT ON 1-2" ON**  
**WARNING CAS MESSAGE "STALL HEAT ON" ON**
  - "PITOT 1 HTR" switch ..... **OFF**
  - "PITOT 2 & STALL HTR" switch ..... **OFF**

**WARNING**  
**DO NOT TOUCH PITOTS NOR STALL WARNING VANE.  
THEY COULD BE HOT ENOUGH TO BURN SKIN**

- 36 - EXT LIGHTS panel
  - "STROBE" ..... **ON**
  - "NAV" ..... **ON**
  - "ICE LIGHT" ..... **ON**

*From outside the airplane, check operation of all lights and the stall warning horn*

- 37 - Reentering the airplane
  - EXT LIGHTS panel ..... **ALL SWITCHES OFF**
  - DE ICE SYSTEM panel ..... **ALL SWITCHES OFF**

- 38 - "AVIONICS" MASTER switch ..... **OFF**

- 39 - "SOURCE" selector ..... **OFF**



## AMPLIFIED PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

Post-MOD70-0335-34 (ESI-2000)

- 40 - ESI-2000 battery indicator symbol . . . . . **NOT DISPLAYED**  
If a battery symbol appears on ESI-2000 display, aircraft takeoff is not allowed until the situation is resolved. Refer to the battery details in the ESI-2000 Pilot's Guide for further information.

**Cabin** (II)

- 1 - Cabin fire extinguisher (if installed) . . . . . **CHECK**  
**(Pressure / Attachment)**  
The fire extinguisher is provided with a pressure gage.
- 2 - Seats / belts . . . . . **CHECK**
- 3 - Windows . . . . . **CHECK**  
**(General condition / No cracks)**
- 4 - Emergency exit . . . . . **CLOSED / LOCKED**  
- Anti-theft safety . . . . . **REMOVE / STOW**
- 5 - Baggage compartment . . . . . **STRAPS IN PLACE**
- 6 - Partition net (if installed) . . . . . **IN PLACE**
- 7 - Emergency beacon . . . . . **ARM**  
Check ARM position on the switch located on the L.H. instrument panel and on the emergency beacon switch located on aft baggage compartment floor.
- 8 - Doors operation . . . . . **CHECK**
- 9 - Stairs condition . . . . . **CHECK**  
**(Condition / Play)**  
Particularly check condition of lower door retaining cable(s) at the level of the handle.



AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

**B - AIRPLANE OUTSIDE**

The preflight inspection described in Figure 4.3.1 is recommended before each flight.

*NOTE :*

*If a preflight inspection is performed, just after the engine shut-off, 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)**

- 1 - Flap ..... **CHECK (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.

- 2 - Aileron and trim / Spoiler ..... **CHECK (Condition / Free movement / Deflection)**

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.



## AMPLIFIED PROCEDURES

### PREFLIGHT INSPECTION (Cont'd)

- 3 - Trailing edge static discharger ..... **CHECK**  
**(Condition / Attachment)**
- 4 - Wing tip / nav. lights /  
 Strobe / landing light ..... **Condition - CHECK**
- 5 - OAT probe ..... **Condition - CHECK**
- 6 - Fuel tank ..... **CAP CLOSED / LOCKED**  
 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.
- 7 - Fuel tank air vent ..... **UNOBSTRUCTED - CHECK**  
 Air vent is not likely to be obstructed by ice or water, as it is located in a wing lower surface recess.
- 8 - External pitot (IAS) ..... **Condition - CHECK**
- 9 - Internal pitot ( $V_{MO}$ ) ..... **Condition - CHECK**
- 10 - Wing lower surface ..... **CHECK**
  - Check fuel tank access doors for leaks
  - Check for surface damage.
- 11 - Wing deicer boots ..... **CHECK**  
**(Condition / Attachment)**  
 Care must be taken when refuelling the airplane to avoid damaging the wing deicer boots. A protective apron should be used if possible.
- 12 - Fuel tank drain (two on each wing) ..... **DRAIN**  
**(Fuel free of water and contamination)**  
 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.





## AMPLIFIED PROCEDURES

### PREFLIGHT INSPECTION (Cont'd)

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.

- 13 - L.H. main landing gear
- Shock-absorber / doors /  
tire / wheel well ..... **CHECK**
- If airplane has been used from muddy airfields or in snow, check wheel wells to make sure they are clean and not obstructed. Check frequently all landing gear retraction mechanism components, shock-absorbers, tires and brakes. This is particularly important for airplanes used from hilly fields. Improperly serviced or worn shock-absorbers may result in excessive loads being transmitted to the airplane structure during ground operations. Without passengers and baggages on board, the unpainted surface of the main gear shock absorber tube must be visible about :
- 55 mm (2.17 in.) of minimum height with half tank,
  - 40 mm (1.57 in.) of minimum height with full tanks.

### ***Fuselage forward section*** (IV)

- 1 - Baggage compartment
- Inside ..... **CONTROLLED**
  - Door ..... **CLOSED / LOCKED**
- 2 - GPU door ..... **CLOSED**  
(If not used)
- 3 - Fuel circuit drain ..... **DRAIN**  
(Fuel free of water and contamination)
- Filter contamination indicator ..... **CHECK**

**Open the inspection door located on  
L.H. side under front baggage compartment**



## AMPLIFIED PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

- 4 - L.H. exhaust stub ..... **CHECK**  
**(Condition / No crack)**

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.

- 5 - Upper engine cowls ..... **OPEN**

For the first flight of the day :

- Oil cap ..... **CLOSED / LOCKED**
- Engine oil level ..... **CHECK**
- Fuel pipes ..... **CHECK**  
**(No leak, deterioration, wear)**

- 6 - Engine cowls ..... **Condition - CHECK**  
**CLOSED / LOCKED**

- 7 - Air inlets

- Main ..... **No crack - UNOBSTRUCTED**  
Check for no cracks, which are sometimes put in evidence by traces of soot resulting from exhaust gases.
- Lateral / upper ..... **UNOBSTRUCTED**  
Lateral air inlets, which supply air conditioning system and oil cooler, are provided with blanking covers. It is not the case for upper air inlet of RAM AIR system (circular grille located in front of R.H. windshield).

- 8 - Propeller and spinner ..... **CHECK**  
**(No nicks, cracks or oil leaks / Attachment)**

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.



AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

- 9 - Nose gear  
- Landing light / shock absorber / doors /  
tire / wheel well ..... **CHECK**

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.

**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.

- 10 - R.H. exhaust stub ..... **CHECK**  
**(Condition / No cracks)**

**R.H. wing** (V)

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

- 1 - Fuel tank drain (two on each wing) ..... **DRAIN**  
**(Fuel free of water and contamination)**
- 2 - Main landing gear  
- Shock absorber / doors /  
tire / wheel well ..... **CHECK**
- 3 - Wing deicer boots ..... **CHECK**  
**(Condition / Attachment)**
- 4 - Stall warning ..... **CHECK**  
**(Condition / Deflection)**
- 5 - Wing lower surface ..... **CHECK**  
**(No leaks)**
- 6 - Fuel tank ..... **CAP CLOSED / LOCKED**



## AMPLIFIED PROCEDURES

## PREFLIGHT INSPECTION (Cont'd)

- 7 - Fuel tank air vent . . . . . **Unobstructed - CHECK**
- 8 - Wing tip / nav. light /  
strobe / landing light . . . . . **Condition - CHECK**
- 9 - Trailing edge static discharger . . . . . **CHECK**  
**(Condition / Number / Attachment)**
- 10 - Aileron / spoiler . . . . . **CHECK**  
**(Condition / Free movement / Deflection)**
- 11 - Flap . . . . . **CHECK**  
**(Condition / Play)**

**Fuselage rear section / Empennages** (VI)

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

- 1 - Static pressure ports . . . . . **Clean - CHECK**
- 2 - Ventral fins . . . . . **CHECK**  
**(Attachment condition)**  
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.
- 3 - Inspection door under fuselage . . . . . **CLOSED - CHECK**  
**(Attachments)**
- 4 - Horizontal stabilizer  
deicer boots (R.H. side) . . . . . **CHECK**  
**(Condition / Attachments)**
- 5 - Elevator and trim . . . . . **CHECK**  
**(Condition / Deflection free movement / Trim position)**  
To check the deflection, hold the two half-elevators near fuselage, inside both elevator trims to avoid stresses.
- 6 - Static dischargers . . . . . **CHECK**  
**(Condition)**



AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

7 - Vertical stabilizer deicer boots ..... **CHECK**  
**(Condition / Attachments)**

8 - Rudder and trim ..... **CHECK**  
**(Condition / Trim position)**

9 - Static dischargers ..... **CHECK**  
**(Condition)**

10 - Tail cone ..... **Condition - CHECK**

11 - Static pressure ports ..... **Clean - CHECK**

## AMPLIFIED PROCEDURES

**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.

**CAUTION**

**"BLEED VALVE" SWITCH ON "ON" MAY CAUSE  
OVERTEMPERATURE OR ABNORMAL ACCELERATION AT  
START**

**CAUTION**

**MAKE SURE THAT "MAN OVRD" CONTROL IS OFF TO AVOID  
OVERTEMPERATURE RISKS AT START**

- 1 - Preflight inspection ..... **COMPLETED**
- 2 - Cabin access door ..... **CLOSED / LOCKED**
- 3 - Baggage ..... **STOWED**
- 4 - Parking brake ..... **SET**  
"PARK BRAKE" CAS message appearance does not indicate that parking brake is set. For that, press on brake pedals before turning parking brake selector to the right.
- 5 - Weight and balance ..... **COMPUTED / CHECKED**  
In addition these data will be set in the MFD after starting.
- 6 - Pilot and R.H. station seats ..... **ADJUSTED**  
Adjust pilot and R.H. station seats and harnesses, so as to permit access to all flight controls. The pilot at L.H. station must be able to easily reach ECS panel.
- 7 - R.H and L.H. pedals ..... **ADJUSTED**





AMPLIFIED PROCEDURES

**BEFORE STARTING ENGINE (3/3)**

- Vacuum system

**CAUTION CAS MESSAGE "VACUUM LOW" ON**

If not, recycle power to PFD by setting the "AVIONICS MASTER" switch to "OFF" then "START". If "VACUUM LOW" CAS message is still not ON, then do not take off and check vacuum system.

18 - Fuel

- Gages ..... **CHECKED**
- Tank selector ..... **L or R - CHECKED**
- "FUEL SEL" switch ..... **AUTO**

**WARNING CAS MESSAGE "AUTO SEL" OFF**

- "SHIFT" push-button ..... **PRESS**  
**The selector changes tank**  
**On ground, observe a tank change**  
**every minute and 15 seconds**

19 - Fire detection TEST (if installed) ..... **CARRY OUT**

20 - EXT LIGHTS panel

- "STROBE" ..... **AS REQUIRED**  
The use of strobe lights may generate discomfort to personnel on ground, particularly by night.

21 - In case of night flight

- INT LIGHTS panel : "INSTR" + "PANEL" ..... **ADJUSTED**
- Navigation lights ..... **ON**
- Flashlight (if necessary) ..... **IN PLACE**  
By night, emergency lighting, provided by two luminous spot lights located above front seats, is sufficient to illuminate crew documents and instrument panel.



AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
AIRPLANE POWER (1/6)**

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

- 1 - "IGNITION" switch ..... AUTO or OFF**
- 2 - "STARTER" switch ..... OFF**
- 3 - "INERT SEP" switch ..... OFF**
- 4 - Landing gear control ..... DN**

- 5 - ELECTRIC POWER panel
  - "SOURCE" selector ..... **BAT**
  - Mains voltage ..... **CHECKED**  
**> 24.5 Volts**
- 6 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**  
**(Flight idle stop)**
- Propeller governor lever ..... **MAX. RPM**
- Condition lever ..... **CUT OFF**



AMPLIFIED PROCEDURES

**STARTING ENGINE USING AIRPLANE POWER (2/6)**

- 7 - FUEL panel
  - "AUX BP" switch ..... ON
  - WARNING CAS MESSAGE "AUX BOOST PMP ON" ON
  - WARNING CAS MESSAGE "FUEL PRESS" OFF
- 8 - Propeller ..... AREA CLEAR
- 9 - ENGINE START panel
  - "IGNITION" switch ..... AUTO
  - "STARTER" switch ..... ON
  - WARNING CAS MESSAGE "STARTER" ON
  - WARNING CAS MESSAGE "IGNITION" ON

**NOTE :**

*The utilization of the starter is bound by limitations mentioned in Chapter 2.4 "STARTER OPERATION LIMITS".*

Ng ≈ 13 %

- Condition lever ..... LO / IDLE  
When condition lever 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.

Monitor increase of :

- ITT ..... (max. ITT ≤ 870°C for 20 seconds max. ≤ 1000°C for 5 seconds max.)

The absolute limit read on the indicator is 1090°C during the starting sequence (red triangle). However, the ITT limits during the starting sequence are :

- . 870°C for 20 seconds max.
- . 1000°C for 5 seconds max.

In case of higher temperature and longer time, stop immediately the starting procedure as indicated in the following caution and inform the maintenance department.



AMPLIFIED PROCEDURES

**STARTING ENGINE USING AIRPLANE POWER (3/6)**

If starting engine procedure is aborted further to overtemperature indications (max. ITT : 870°C for more than 20 seconds - 1000°C for more than 5 seconds), maintaining during few seconds "STARTER" switch ON (within starter operating limits) may reduce max. ITT obtained by ventilating combustion chamber.

**NOTE :**

*No action is required for the following conditions :*

- ITT from 800 °C to 870 °C limited to 20 seconds,
- ITT from 870 °C to 1000 °C limited to 5 seconds.

**CAUTION**

**IF 10 SECONDS AFTER HAVING POSITIONED CONDITION LEVER TO "LO / IDLE" THERE IS NO IGNITION OR IF DURING IGNITION SEQUENCE, OVERTEMPERATURE INDICATION APPEARS (MAX. ITT : 870°C FOR MORE THAN 20 SECONDS - 1000°C FOR MORE THAN 5 SECONDS),**

**INTERRUPT STARTING PROCEDURE :**

Condition lever ..... CUT OFF

"IGNITION" switch ..... AUTO or OFF

Wait ITT < 800°C, then :

"STARTER" switch ..... OFF

**BEFORE ANY RESTARTING ATTEMPT, CARRY OUT A MOTORING  
(Refer to paragraph "MOTORING")**

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**



AMPLIFIED PROCEDURES

**STARTING ENGINE USING AIRPLANE POWER (4/6)**

- Ng  
The start sequence must be timed to ensure starter limits are not exceeded. Lengthy operation of the starter results in excessive temperature of the engine :
  - If Ng does not reach 30 % within 30 seconds, after the starter is selected ON, abort the start.
  - If Ng does not reach 50 % within 1 minute, abort the start.
  - Before starting a new test, respect delays indicated in Chapter 2.4 "STARTER OPERATION LIMITS".
- Oil pressure

WARNING CAS MESSAGE      **"OIL PRESS"**      OFF

**CAUTION**

**IF ENGINE STAGNATES,**

**INTERRUPT STARTING PROCEDURE :**

Condition lever ..... CUT OFF  
 "IGNITION" switch ..... AUTO or OFF  
 "STARTER" switch ..... OFF

**WAIT FOR 1 MINUTE (Refer to Chapter 2.4 "STARTER OPERATION LIMITS"), THEN TRY TO RESTART**

ENGINE START panel

- "IGNITION" switch ..... AUTO  
 - "STARTER" switch ..... ON

WARNING CAS MESSAGE      **"STARTER"**      ON

WARNING CAS MESSAGE      **"IGNITION"**      ON

Ng ≈ 13 %

- Condition lever ..... **HI / IDLE**



AMPLIFIED PROCEDURES

**STARTING ENGINE USING AIRPLANE POWER (5/6)**

Monitor increase of :

- ITT ..... (max. ITT  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.)
- Ng
- Oil pressure

WARNING CAS MESSAGE      **"OIL PRESS"**      OFF

Ng  $\simeq$  50 %

- "STARTER" switch ..... OFF

WARNING CAS MESSAGE      **"STARTER"**      OFF

WARNING CAS MESSAGE      **"IGNITION"**      OFF

- Engine instruments ..... **CHECK Ng increasing to 69 % ( $\pm$  2 %)**  
(Oil pressure / ITT = green sector)

*NOTE :*

*This behaviour should only be observed with outside low temperature (OAT < 0 °C), cold engine.*

*This procedure may be used for the first starting of the day.*

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

- 10 - "STARTER" switch ..... OFF  
Check Ng > 52 %

- 11 - Condition lever ..... HI / IDLE

- 12 - Engine instruments ..... **CHECK : Ng  $\simeq$  69 % ( $\pm$  2 %)**  
(Oil pressure / Oil temperature / ITT = green sector)

- 13 - FUEL panel
  - "AUX BP" switch ..... **AUTO**At this time, observing a drop in the fuel pressure is normal.

WARNING CAS MESSAGE      **"AUX BOOST PMP ON"**      OFF



AMPLIFIED PROCEDURES

**STARTING ENGINE USING AIRPLANE POWER (5/6)**

Monitor increase of :

- ITT ..... (max. ITT  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.)
- Ng
- Oil pressure

WARNING CAS MESSAGE      **“OIL PRESS”**      OFF

Ng  $\simeq$  50 %

- “STARTER” switch ..... OFF

WARNING CAS MESSAGE      **“STARTER”**      OFF

WARNING CAS MESSAGE      **“IGNITION”**      OFF

■ Engine instruments ..... **CHECK Ng increasing to 68 % ( $\pm$  1 %)**  
 (Oil pressure / ITT = green sector)

**NOTE :**

*This behaviour should only be observed with outside low temperature (OAT < 0 °C), cold engine.*

*This procedure may be used for the first starting of the day.*

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

10 - “STARTER” switch ..... OFF  
 Check Ng > 52 %

11 - Condition lever ..... HI / IDLE

12 - Engine instruments ..... **CHECK : Ng  $\simeq$  68 % ( $\pm$  1 %)**  
 (Oil pressure / Oil temperature / ITT = green sector)

■ 13 - FUEL panel  
 - “AUX BP” switch ..... **AUTO**  
 At this time, observing a drop in the fuel pressure is normal.

WARNING CAS MESSAGE      **“AUX BOOST PMP ON”**      OFF



AMPLIFIED PROCEDURES

**STARTING ENGINE USING AIRPLANE POWER (6/6)**

■ 14 - Generator

**WARNING CAS MESSAGE "MAIN GEN" OFF**

**RESET if necessary**

"MAIN GEN" CAS message normally goes out, as soon as "STARTER" CAS message goes out.

If not, increase Ng over 70 % to start main generator.

- Ammeters ..... **CHARGE CHECKED**
- Voltmeters ..... **VOLTAGE CHECKED**  
**(V ≈ 28 Volts)**

AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (1/7)**

Before connecting GPU, check that its indicated voltage is correct.

1 - GPU ..... **CONNECTED**

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

- 2 - "IGNITION" switch ..... **AUTO**
- 3 - "STARTER" switch ..... **OFF**
- 4 - "INERT SEP" switch ..... **OFF**
- 5 - Landing gear control ..... **DN**

6 - "SOURCE" selector ..... **GPU**

WARNING CAS MESSAGE      **"GPU DOOR"**      **ON**

WARNING CAS MESSAGE      **"BAT OFF"**      **ON**

- Battery voltage ..... **CHECKED**  
**(V ≈ 28 Volts)**

If voltage is ≥ 30 volts, immediately turn "SOURCE" selector to OFF. PFD and MFD may be damaged before main fuse failure.

7 - Engine controls

- "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**





## AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (2/7)**

- Propeller governor lever ..... **MAX RPM**
  - Condition lever ..... **CUT OFF**
- 8 - FUEL panel
- "AUX BP" switch ..... **ON**
- WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**
- WARNING CAS MESSAGE "FUEL PRESS" OFF**
- Fuel pressure indicator ..... **CHECK**
- 9 - Propeller ..... **AREA CLEAR**
- 10 - ENGINE START panel
- "IGNITION" switch ..... **AUTO**
  - "STARTER" switch ..... **ON**
- WARNING CAS MESSAGE "STARTER" ON**
- WARNING CAS MESSAGE "IGNITION" ON**

**NOTE :**

*The utilization of the starter is bound by limitations mentioned in Chapter 2.4 "STARTER OPERATION LIMITS".*

Ng  $\simeq$  13 %

- Condition lever ..... **LO / IDLE**
- When condition lever 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.
- Avoid staying at or above 13 %, Ng is usually stabilized after leaving starter ON during 10 seconds.



AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (3/7)**

Monitor increase of :

- ITT ..... (**max. ITT  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.**)

The absolute limit read on the indicator is 1090°C during the starting sequence (red triangle). However, the ITT limits during the starting sequence are :

- . 870°C for 20 seconds max.
- . 1000°C for 5 seconds max.

In case of higher temperature and longer time, stop immediately the starting procedure as indicated in the following caution and inform the maintenance department.

This starting engine procedure must be also applied in case of drop in voltage supplied by GPU. This drop will be shown by a low or zero Ng acceleration.

If starting engine procedure is aborted further to overtemperature indications (max. ITT : 870°C for more than 20 seconds - 1000°C for more than 5 seconds), maintaining during few seconds "STARTER" switch ON (within starter operating limits) may reduce max. ITT obtained by ventilating combustion chamber.

**NOTE :**

*No action is required for the following conditions :*

- ITT from 800 °C to 870 °C limited to 20 seconds,
- ITT from 870 °C to 1000 °C limited to 5 seconds.



AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (4/7)**

**CAUTION**

**IF 10 SECONDS AFTER HAVING POSITIONED CONDITION LEVER TO "LO / IDLE" THERE IS NO IGNITION OR IF DURING IGNITION SEQUENCE, OVERTEMPERATURE INDICATION APPEARS (MAX. ITT : 870°C FOR MORE THAN 20 SECONDS - 1000°C FOR MORE THAN 5 SECONDS),**

**INTERRUPT STARTING PROCEDURE :**

**Condition lever ..... CUT OFF**

**"IGNITION" switch ..... OFF**

**Wait ITT < 800°C, then :**

**"STARTER" switch ..... OFF**

**BEFORE ANY RESTARTING ATTEMPT, CARRY OUT A MOTORING  
(Refer to paragraph "MOTORING")**

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

- Ng  
The start sequence must be timed to ensure starter limits are not exceeded. Lengthy operation of the starter results in excessive temperature of the engine :
  - If Ng does not reach 30 % within 30 seconds, after the starter is selected ON, abort the start.
  - If Ng does not reach 50 % within 1 minute, abort the start.
  - Before starting a new test, respect delays indicated in Chapter 2.4 "STARTER OPERATION LIMITS".
- Oil pressure

**WARNING CAS MESSAGE**

**"OIL PRESS"**

**OFF**



AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (5/7)**

**CAUTION**

**IF ENGINE STAGNATES,  
INTERRUPT STARTING PROCEDURE :**

**Condition lever** ..... **CUT OFF**

**"IGNITION" switch** ..... **OFF**

**"STARTER" switch** ..... **OFF**

**WAIT FOR 1 MINUTE (Refer to Chapter 2.4 "STARTER OPERATION  
LIMITS"), THEN TRY TO RESTART**

ENGINE START panel

- **"IGNITION" switch** ..... **AUTO**

- **"STARTER" switch** ..... **ON**

**WARNING CAS MESSAGE**            **"STARTER"**            **ON**

**WARNING CAS MESSAGE**            **"IGNITION"**            **ON**

Ng  $\simeq$  13 %

- **Condition lever** ..... **HI / IDLE**

Monitor increase of :

- **ITT** ..... (**max. ITT  $\leq$  870°C for 20 seconds max.  
 $\leq$  1000°C for 5 seconds max.**)

- **Ng**

- **Oil pressure**

**WARNING CAS MESSAGE**            **"OIL PRESS"**            **OFF**

Ng  $\simeq$  50 %







AMPLIFIED PROCEDURES

**STARTING ENGINE USING  
EXTERNAL POWER (GPU) (7/7)**

- 17 - FUEL panel  
- "AUX BP" switch ..... **AUTO**  
At this time, observing a drop in the fuel pressure is normal.

**WARNING CAS MESSAGE "AUX BOOST PMP ON" OFF**

- 18 - Generator

**WARNING CAS MESSAGE "MAIN GEN" OFF**

**RESET if necessary**

"MAIN GEN" CAS message normally disappears, as soon as  
"STARTER" CAS message disappears.

If not, increase Ng over 70 % to start main generator.

- Ammeters ..... **CHARGE CHECKED**
- Voltmeters ..... **VOLTAGE CHECKED**  
**(V ≈ 28 Volts)**

AMPLIFIED PROCEDURES

**MOTORING (1/2)**

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 shut-down 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 SHUT-DOWN**
- **WAIT AT LEAST 30 SECONDS BEFORE INITIATING A MOTORING**

- 1 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX RPM**
- Condition lever ..... **CUT OFF**





AMPLIFIED PROCEDURES

**MOTORING (2/2)**

- 2 - FUEL panel
  - Tank selector ..... L or R
  - "AUX BP" switch ..... ON

WARNING CAS MESSAGE    **"AUX BOOST PMP ON"**            ON

   WARNING CAS MESSAGE    **"FUEL PRESS"**            OFF

Fuel pressure is necessary for lubrication of HP pump.

- 3 - "IGNITION" switch ..... OFF

   WARNING CAS MESSAGE            **"IGNITION"**            OFF

***To clear fuel and vapor internally trapped :***

- 4 - "STARTER" switch ..... ON  
for 15 sec maxi

   WARNING CAS MESSAGE            **"STARTER"**            ON

***To cool engine following shut-down in high temperature environment :***

- 4 - "STARTER" switch ..... ON  
during 30 sec

   WARNING CAS MESSAGE            **"STARTER"**            ON

*If ignition symptoms occur (ITT increasing), check that "IGNITION" switch is OFF, that condition lever is on CUT OFF and continue motoring.*

- 5 - "STARTER" switch ..... OFF

   WARNING CAS MESSAGE            **"STARTER"**            OFF

- 6 - FUEL panel
  - "AUX BP" switch ..... OFF

WARNING CAS MESSAGE    **"AUX BOOST PMP ON"**            OFF

   WARNING CAS MESSAGE            **"FUEL PRESS"**            ON

AMPLIFIED PROCEDURES

**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.

- 1 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**

**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER  
MUST NOT BE MOVED BEHIND THE FLIGHT IDLE  
POSITION**

- Power lever ..... **IDLE**
- Propeller governor lever ..... **MAX. RPM**
- Condition lever ..... **CUT OFF**

- 2 - Fuel
  - Tank selector ..... **L or R**
  - "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**

**WARNING CAS MESSAGE "FUEL PRESS" OFF**

- 3 - "IGNITION" switch ..... **OFF**
- 4 - "STARTER" switch ..... **ON during 15 sec**



AMPLIFIED PROCEDURES

**MOTING FOLLOWED BY  
AN ENGINE START (2/3)**

- 5 - After 15 seconds :
  - "IGNITION" switch ..... **AUTO or ON**
  - Ng ..... **Check at  $\simeq 13\%$**
  - Condition lever ..... **LO / IDLE**

- 6 - Monitor increase of :
  - ITT ..... (**max. ITT  $\leq 870^{\circ}\text{C}$  for 20 seconds max.  
 $\leq 1000^{\circ}\text{C}$  for 5 seconds max.)**)
  - Ng
  - Oil pressure

**WARNING CAS MESSAGE            "OIL PRESS"            OFF**

**NOTE :**

*No action is required for the following conditions :*

- *ITT from  $800^{\circ}\text{C}$  to  $870^{\circ}\text{C}$  limited to 20 seconds,*
- *ITT from  $870^{\circ}\text{C}$  to  $1000^{\circ}\text{C}$  limited to 5 seconds.*

Ng  $\simeq 50\%$  stable

- "STARTER" switch ..... **OFF**

**WARNING CAS MESSAGE            "STARTER"            OFF**

**WARNING CAS MESSAGE            "IGNITION"            OFF**

- 7 - Engine instruments ..... **CHECK : Ng > 52 %  
(Oil pressure / ITT = green sector)**

- 8 - Condition lever ..... **HI / IDLE**

- 9 - Engine instruments ..... **CHECK : Ng  $\simeq 69\%$  ( $\pm 2\%$ )  
(Oil pressure / Oil temperature / ITT = green sector)**



AMPLIFIED PROCEDURES

**MOTURING FOLLOWED BY  
AN ENGINE START (2/3)**

- 5 - After 15 seconds :
  - "IGNITION" switch ..... **AUTO or ON**
  - Ng ..... **Check at  $\simeq 13\%$**
  - Condition lever ..... **LO / IDLE**

- 6 - Monitor increase of :
  - ITT ..... **(max. ITT  $\leq 870^{\circ}\text{C}$  for 20 seconds max.  
 $\leq 1000^{\circ}\text{C}$  for 5 seconds max.)**
  - Ng
  - Oil pressure

**WARNING CAS MESSAGE            "OIL PRESS"            OFF**

*NOTE :*

*No action is required for the following conditions :*

- *ITT from  $800^{\circ}\text{C}$  to  $870^{\circ}\text{C}$  limited to 20 seconds,*
- *ITT from  $870^{\circ}\text{C}$  to  $1000^{\circ}\text{C}$  limited to 5 seconds.*

Ng  $\simeq 50\%$  stable

- "STARTER" switch ..... **OFF**

**WARNING CAS MESSAGE            "STARTER"            OFF**

**WARNING CAS MESSAGE            "IGNITION"            OFF**

- 7 - Engine instruments ..... **CHECK : Ng > 52 %  
(Oil pressure / ITT = green sector)**

- 8 - Condition lever ..... **HI / IDLE**

- 9 - Engine instruments ..... **CHECK : Ng  $\simeq 68\%$  ( $\pm 1\%$ )  
(Oil pressure / Oil temperature / ITT = green sector)**



AMPLIFIED PROCEDURES

**MOTORED FOLLOWED BY  
AN ENGINE START (3/3)**

10 - FUEL panel

- "AUX BP" switch ..... **AUTO**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" OFF**

At this time, observing a drop in the fuel pressure is normal.

11 - Generator

**WARNING CAS MESSAGE "MAIN GEN" OFF**

**RESET if necessary**

"MAIN GEN" CAS message normally disappears, as soon as  
"STARTER" CAS message disappears.

If not, increase Ng over 70 % to start main generator.

- Ammeters ..... **CHARGE CHECKED**
- Voltmeters ..... **VOLTAGE CHECKED**  
**(V ≈ 28 Volts)**

AMPLIFIED PROCEDURES

**AFTER STARTING ENGINE (1/4)**

1 - "AVIONICS" MASTER switch ..... **ON**

2 - "AP TRIMS" MASTER switch ..... **ON**

3 - "GENERATOR" selector

For these tests, "BLEED VALVE" switch must be left OFF, to unload the generator circuit.

- On "MAIN" ..... **Voltage and current checked**

when battery current  $\leq$  50 amps :

- on "ST-BY" ..... **Voltage and current checked  
(reset if necessary)**

If the indicated voltage on the "ST BY" generator is low (close to 27 volts), reset the "ST BY" generator and recheck the voltage. The indicated voltage should be in the green range.

- then again on "MAIN"

4 - PFD 1, MFD and PFD 2

Detailed control procedures of G1000 avionics system are described in the "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 700.

- Brightness ..... **ADJUST  
If necessary**

- DISPLAY BACKUP button ..... **CHECK  
then return to NORMAL mode**

■ *When battery current < 100 A :*

5 - ECS panel

Selecting the air conditioning system ON will start the blower. To avoid overloading the generator, ensure ammeter reading is less than 100 amperes.

- "BLEED VALVE" switch ..... **ON (LO or HI)**



## AMPLIFIED PROCEDURES

**AFTER STARTING ENGINE (2/4)**

- "CABIN FAN" switch ..... **As required**  
There is no inconvenience to set "CABIN FAN" switch ON before starting engine for passenger and crew comfort, provided that voltage is > 24.5 volts.
- "FREON" or "AIR COND" switch (if installed) .. **As required**
- "CABIN TEMP" selector ..... **ADJUST**  
Turn selector clockwise to increase temperature.
- "DEFOG / NORMAL" distributor ..... **AS REQUIRED**  
Usually selected to NORMAL. However, if canopy misting is evident, select DEFOG and increase a little the cabin temperature thanks to the "CABIN TEMP" selector.  
Cabin altitude selector ..... **Airfield altitude - 500 feet**  
Cabin rate selector ..... **ARROW UPWARDS**  
**(at the halfway post)**

Such a selection will limit cabin rate selector at about  $\pm 500$  ft/min. If selector is turned to the right, limited values of cabin rate selector increase.

- 6 - Stand-by instruments ..... **CHECKED**
  - Suction gage [Pre-MOD70-0335-34 (ESI-2000)] ... **CHECKED**
- 7 - ADI/HSI on PFD1 / PFD2 ..... **CHECKED**
- 8 - Altimeter setting ..... **CHECKED**
- 9 - VHF/VOR/GPS ..... **ADJUSTED - TESTED**
  - Radar/Stormscope/TAS/TAWS/  
Radio altimeter (if installed) ..... **ADJUSTED - TESTED**
- 10 - MFD flight management
  - Weight computing ..... **SET/CHECKED**
  - FOB synchro ..... **SET**
  - FPL (if requested) ..... **SET**



AMPLIFIED PROCEDURES

**AFTER STARTING ENGINE (3/4)**

11 - AP / TRIMS

- "AP TRIMS" MASTER operation ..... **CHECK**  
Detailed control procedures of autopilot and electrical pitch trim are described in the "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 700.
- Pitch trim ..... **UP / DN, then ADJUSTED**  
Adjust the indicator in green range (graduated from 12 to 37 % of center of gravity) facing corresponding center of gravity.
- Yaw trim ..... **L / R, then ADJUSTED**  
Adjust the indicator in green range TO (TAKEOFF).
- Roll trim ..... **L / R, then ADJUSTED**  
Adjust the indicator first at neutral position (horizontal marker).

12 - DE ICE SYSTEM panel

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.

- MFD on system page
- "PROP DE ICE" switch ..... **ON**  
**Check illumination of the green light located above the switch**  
Illumination of the green light shows that power supplied to blade root electric resistors is between 8 and 10 amperes. It is advised to wait at least a whole half cycle (90 seconds) to check that both blade pairs are correctly deiced.
- "PROP DE ICE" switch ..... **OFF**





AMPLIFIED PROCEDURES

**AFTER STARTING ENGINE (4/4)**

- "WINDSHIELD" switch ..... **ON** and on the MFD Page  
**Check illumination of the green light(s) located above the switch (except if hot conditions)**

This light may remain OFF, if cabin temperature is very high, for example after a prolonged parking in hot conditions (see Chapter 7.13 for operational principle).

- "WINDSHIELD" switch ..... **OFF**

Increase power so as to get Ng ≥ 80% to check AIRFRAME DE ICE

Theoretically, necessary air bleed to inflate wing and empennage leading edges, as well as depression necessary to their deflation are sufficient when power lever is positioned on IDLE. However, it is advised for check to choose a Ng power ≥ 80 % in order to obtain operation design pressure, which enables illuminating surely the two green lights and avoiding "VACUUM LO" untimely alarms.

- "AIRFRAME DE ICE" switch ..... **ON**  
**Visually check functioning of deicer boot during 1 total cycle and illumination of the two green lights located above the switch**

The cycle lasts 67 seconds. Check both inflation impulses, and illumination of each corresponding green light :

- the first impulse inflates the external and middle wing boots,
- the second impulse inflates the leading edge boots of empennages and inner wing.
- "AIRFRAME DE ICE" switch ..... **OFF**
- "INERT SEP" switch ..... **ON**

**WARNING CAS MESSAGE "INERT SEP ON" ON**  
after 30 seconds

"INERT SEP" switch is kept on while taxiing in order to avoid ingestion of particles by the engine.

AMPLIFIED PROCEDURES

<b>TAXIING (1/2)</b>	
1 - "TAXI" light .....	<b>ON</b>
2 - "INERT SEP" switch .....	<b>CHECKED ON</b>
<b>CHECK WARNING CAS MESSAGE</b>	<b>"INERT SEP ON" ON</b>
<p style="text-align: center;">It is recommended that the inertial separator be used during all ground operations, in order to avoid ingestion of particles inside the air intake, above all on dirty taxiway when Beta (<math>\beta</math>) range / reverse is selected with the power lever.</p>	
3 - Passenger briefing .....	<b>AS REQUIRED</b>
4 - Parking brake .....	<b>RELEASED</b>
<p style="text-align: center;">Make sure that chocks are removed (if used).</p>	
<b>WARNING CAS MESSAGE</b>	<b>"PARK BRAKE" OFF</b>
5 - L.H. and R.H. seat brakes .....	<b>CHECKED</b>
6 - Nose wheel steering .....	<b>CHECKED</b>
<p style="text-align: center;">Check the control wheel move (roll) in the same direction as the rudder pedals due to the rudder / aileron interconnect.</p>	
7 - Power lever .....	<b>AS REQUIRED</b>
<p style="text-align: center;">After initial acceleration, power lever may be in the "TAXI RANGE" sector, avoiding excessive movements in order to keep a constant ground speed.</p> <p style="text-align: center;">The condition lever must be in the HI / IDLE position to keep the propeller RPM (Np) out of the caution (yellow) range while taxiing.</p>	



## AMPLIFIED PROCEDURES

**TAXIING (2/2)****CAUTION****AVOID USING REVERSE DURING TAXIING**

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.

8 - Flight instruments ..... **CHECK**

Check navigation and communication systems before or during taxiing, check instruments on PFDs 1 / 2 and stand-by ADI during ground turns.

9 - CAS display ..... **CHECK**

AMPLIFIED PROCEDURES

**BEFORE TAKEOFF (1/3)**

1 - Parking brake ..... **SET**

**WARNING CAS MESSAGE "PARK BRAKE" ON**

2 - Condition lever ..... **HI / IDLE**

**[Ng : 68 % (± 2 %)]**

3 - Propeller governor lever ..... **FEATHER twice,  
then MAX. RPM**

During this test, the power lever must be at flight idle. Keep the time spent with the propeller RPM in the caution (yellow) range at a minimum.

4 - Flaps ..... **TO**

5 - DE ICE SYSTEM panel

- "AIRFRAME DE ICE" switch ..... **As required**

- "PROP DE ICE" switch ..... **As required**

*If runway is in good condition, without icing conditions :*

- "INERT SEP" switch ..... **OFF**

**WARNING CAS MESSAGE "INERT SEP ON" OFF**

CAS message disappears immediately, but it takes 30 seconds to retract the separator.

*If there is standing water or other contamination on the runway :*

- "INERT SEP" switch ..... **Leave ON**

**WARNING CAS MESSAGE "INERT SEP ON" ON**

- "WINDSHIELD" switch ..... **As required**

- "PITOT 1 HTR" switch ..... **ON**

- "PITOT 2 & STALL HTR" switch ..... **ON**





## AMPLIFIED PROCEDURES

**BEFORE TAKEOFF (2/3)**

- 6 - Flight controls ..... **DEFLECTIONS CHECKED**
- 7 - Trims
- Pitch ..... **ADJUSTED**  
Adjust inside green index sector, depending on the current balance condition.
  - Yaw ..... **ADJUSTED**  
Adjust abeam "TO" index.
  - Roll ..... **ADJUSTED**  
Adjust at neutral position.
- 8 - Pilot's / Passengers' belts ..... **CHECK**
- Passengers' table ..... **REMOVED**
- 9 - "STROBE" switch ..... **ON**
- 10 - CAS display ..... **CHECK**  
**All messages OFF,**
- |                     |                       |           |
|---------------------|-----------------------|-----------|
| <b>except</b>       | <b>"PARK BRAKE"</b>   | <b>ON</b> |
| <b>and, if used</b> | <b>"INERT SEP ON"</b> | <b>ON</b> |
- 11 - Fuel
- Gages : quantity, symmetry ..... **CHECKED**
  - "FUEL SEL" switch ..... **CHECK AUTO**
  - "AUX BP" fuel switch ..... **CHECK AUTO**
- 12 - Flight instruments ..... **CHECKED**
- Altimeter setting ..... **ADJUSTED/CHECKED**
  - "ALT SEL" ..... **ADJUSTED/CHECKED**
- 13 - VHF/VOR/GPS/XPDR ..... **ADJUSTED/CHECKED**
- Radar/Stormscope/TAS/TAWS/ADF  
(if installed) ..... **ADJUSTED/CHECKED**  
On ground, maintain radar (if installed) on STANDBY in order not to generate radiations prejudicial to outside persons.



AMPLIFIED PROCEDURES

**BEFORE TAKEOFF (3/3)**

- Radio altimeter (if installed) ..... **ADJUSTED/CHECKED**
- Transponder code ..... **ADJUSTED/CHECKED**
  
- 14 - Engine instruments ..... **CHECK**  
All engine parameters must be in green range, except propeller RPM, which will be about 1000 RPM or more with power lever at IDLE.
  
- 15 - Battery charge ..... **< 50 Amperes**

**CAUTION**  
**DO NOT TAKE OFF IF BATTERY CHARGE > 50 Amperes**

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

- 16 - Parking brake ..... **RELEASED**  
  
WARNING CAS MESSAGE    **“PARK BRAKE”**    OFF

AMPLIFIED PROCEDURES

**TAKEOFF (1/3)**

WHEN LINED UP

**CAUTION**

- IF HEAVY PRECIPITATION, TURN IGNITION AND INERT SEP ON.
- IF ICING CONDITIONS ARE FORESEEN, REFER TO CHAPTER 4.5, PARAGRAPH "FLIGHT INTO KNOWN ICING CONDITIONS"

- 1 - Horizon ..... **CHECK attitude  $\approx + 2^\circ$**   
Horizon has been set so as to indicate a  $2^\circ$  nose up attitude, when airplane center of gravity is at a middle average.
- 2 - Heading - HSI - Stand-by compass ..... **CHECK**  
The indication of the stand-by compass is disturbed when windshield(s) deice system(s) is (are) activated.
  - Altimeter setting ..... **CHECK**
- 3 - Lights
  - "L.LDG / TAXI / R.LDG" ..... **ON**
- 4 - Engine instruments ..... **CHECK**  
**(ITT = green sector)**
- 5 - CAS display ..... **CHECK**  
**All messages OFF,**
  - except "INERT SEP ON" if used**
  - except "IGNITION" if used**
- 6 - PROP O' SPEED GOVERNOR TEST
  - Increase power until propeller RPM reaches 1900 RPM
  - PROP O' SPEED ..... **TEST : Maintain engaged**
  - Observe that propeller RPM decreases by 50 to 250 RPM





AMPLIFIED PROCEDURES

**TAKEOFF (2/3)**

- PROP O' SPEED ..... **TEST : Release**
- Check that propeller RPM increases by a minimum of 50 RPM when compared to minimum value during PROP O'SPEED test.

7 - Brakes ..... **RELEASED**  
It is not necessary to reduce power at the end of "OVERSPEED" test ; torque will be about 40 % before brake release. For a normal takeoff, maximum torque (100 %) will be applied after brake release. On short runway, maximum torque will be applied before brake release.

8 - Power lever ..... **TRQ = 100 %**

9 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**

- Normal take off ..... **ATTITUDE : 7°5**
  - Short take off ..... **ATTITUDE : 15°**
- Rotation speed at takeoff, according to airplane weight, is also given in Chapter 5.8.

10 - Vertical speed indicator ..... **POSITIVE**

11 - Brakes ..... **APPLY (Briefly)**

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12 - Landing gear control ..... (IAS < 128 KIAS) ..... **UP**  
**At sequence end, check : All warning lights OFF**  
In practice, if preconized attitude is kept, there is no difficulty to maintain a speed < 128 KIAS until landing gear retraction is completed.



## AMPLIFIED PROCEDURES

### TAKEOFF (3/3)

#### Post-MOD70-021-32

12 - Landing gear control ..... (IAS < 128 KIAS) ..... **UP**

During the sequence :

- The red warning light flashes ; it indicates that the landing gear motor is electrically supplied. It goes off when the 3 landing gears are locked. If the red warning light is fixed ON, there is a discrepancy (refer to EMERGENCY PROCEDURES).
- It is possible that the 3 landing gear position green indicator lights flash uncertainly then go off at the end of the sequence.

**At sequence end, check : All warning lights OFF**

In practice, if preconized attitude is kept, there is no difficulty to maintain a speed < 128 KIAS until landing gear retraction is completed.

#### All

- |                                      |                    |
|--------------------------------------|--------------------|
| 13 - Lights                          |                    |
| - "TAXI" .....                       | <b>OFF</b>         |
| - "L.LDG / R.LDG" .....              | <b>AS REQUIRED</b> |
| 14 - Initial climb speed .....       | <b>110 KIAS</b>    |
| 15 - Flaps .....                     | <b>UP</b>          |
| 16 - Climb speed (recommended) ..... | <b>130 KIAS</b>    |
| 17 - "YAW DAMPER" push-button .....  | <b>ON</b>          |

AMPLIFIED PROCEDURES

**CLIMB (1/2)**

- 1 - Power lever ..... **ADJUST according to engine operation table - Chapter 5.7 to MXCL indicator on the PFDs**

**CAUTION**  
**OBSERVE TRQ / Ng / Np / ITT / T°**  
**AND OIL PRESSURE LIMITATIONS. USE OPTIMUM**  
**TORQUE AND / OR REFER**  
**TO TABLES IN CHAPTER 5.7**

Torque setting during climb must be adjusted according to engine operation tables in Chapter 5.7. 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, the ITT will be approximately constant during final climb, 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.

- 2 - Climb speed ..... **AS REQUIRED**  
Best climb speed is 123 KIAS. Performance tables concerning climb at 130 and 160 KIAS are given in Chapter 5.9.



AMPLIFIED PROCEDURES

**CLIMB (2/2)**

3 - ECS panel

- Cabin altitude selector ..... **Cruise altitude + 1000 feet**
- Cabin rate selector ..... **ADJUST so as to obtain a cabin climb rate of about 500 ft/min**

It concerns the control on triple indicator of cabin rate, as well as increasing of differential pressure and cabin altitude.

- Pressurization ..... **CHECK**
  - "CABIN TEMP" selector ..... **ADJUST**
- Anticipate setting to hot position during climb. Do not wait a fresh sensation to perform this setting. Desired temperature will be as longer to obtain as setting is made later.

4 - Fuel tank gages ..... **CHECK / CORRECT (Quantity / Symmetry)**

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In spite of fuel selector automatic operation, a non-negligible dissymmetry may be observed at the end of climb, for example when 10 minutes of climb have been performed on the same fuel tank. Consequently, it is recommended to select the fullest tank by pushing the "SHIFT" push-button, at the beginning of the climb. Tolerated maximum dissymmetry is 25 us gal (95 Litres).

5 - DE ICE SYSTEM ..... **As required Refer to Chapter 4.5 "PARTICULAR PROCEDURES"**

**CAUTION**

**IF HEAVY PRECIPITATION, TURN IGNITION AND INERT SEP ON**

AMPLIFIED PROCEDURES

**CRUISE (1/2)**

- 1 - Power lever ..... **ADJUST according to engine operation table - Chapter 5.7 to Cruise index on the PFD's**

As indicated in lower part of these tables, reducing propeller RPM is possible (without touching power lever), in order to improve sound comfort without significant performance change (speed, consumption). However, at the time of this setting, limit permitted by torque limiter may be reached. This limit is 110 % at sea level and drops to about 100 % at 30000 ft. Therefore, any propeller RPM reducing performed in altitude from a torque close to 100 % (if ITT limit permits it) will be followed by a non-negligible power (and performance) decrease owing to torque limiter.

**CAUTION**  
**OBSERVE TRQ / Ng / Np / ITT / T°**  
**AND OIL PRESSURE LIMITATIONS**  
**USE OPTIMUM TORQUE AND / OR REFER TO**  
**TABLES IN CHAPTER 5.7**

Engine operation tables (Chapter 5.7) 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 power must then be performed according to cruise performance tables presented in Chapter 5.10.

- 2 - Pressurization ..... **CHECK**



AMPLIFIED PROCEDURES

**CRUISE (2/2)**

3 - Fuel

- Gages ..... **CHECK**

**REGULARLY CHECK :**

- consumption
- expected fuel at destination

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- tank automatic change (every 10 minutes)

Post-MOD70-0402-28

- tank automatic change (every 5 minutes)

All

- symmetry [max. dissymmetry 25 us gal (95 Litres)]

When the cruise parameters are stabilized (after 4 min minimum)

4 - Cruise parameters / engine data ..... **CHECK/RECORD**

5 - DE ICE SYSTEM ..... **As required**

**Refer to Chapter 4.5**

**"PARTICULAR PROCEDURES"**

**CAUTION**

**IF HEAVY PRECIPITATION, TURN IGNITION  
AND INERT SEP ON**

AMPLIFIED PROCEDURES

**DESCENT (1/2)**

- 1 - Flaps ..... **UP**
- 2 - Altimeter settings ..... **COMPLETE**
- 3 - "ALT SEL" ..... **SELECTED**
- 4 - ECS panel
  - Cabin altitude selector ..... **Airfield altitude + 500 feet**
  - Cabin rate selector ..... **Adjusted**  
Set first arrow upwards. This will limit cabin rate at about - 500 ft/min.
- 5 - DE ICE SYSTEM ..... **As required**  
**Refer to Chapter 4.5**  
**"PARTICULAR PROCEDURES"**

**CAUTION**  
**IF HEAVY PRECIPITATION, TURN IGNITION**  
**AND INERT SEP ON**

The maximum speed for changing the position of the inertial separator is 200 KIAS. Prior to descending into or through known or suspected icing conditions, select "INERT SEP" switch ON prior to accelerating beyond 200 KIAS. There are no special speed limitations with the inertial separator secured in either position.

**CAUTION**  
**USE OF CONTROL REVERSE BETA ( $\beta$ ) RANGE (BEHIND**  
**THE FLIGHT IDLE POSITION) IS PROHIBITED DURING**  
**FLIGHT**



## AMPLIFIED PROCEDURES

**DESCENT (2/2)**

6 - Windshield misting protection system . . . . . **As required**

To avoid canopy misting in moist conditions, turn "DEFOG / NORMAL" distributor in DEFOG section, turn "CABIN TEMP" selector in hot section, and turn windshield heat ON prior to descent.

7 - Fuel

- Gages . . . . . **CHECK**  
**(Quantity / Symmetry)**

- Fullest tank . . . . . **SELECT**  
Even if dissymmetry is < 25 us gal (95 Litres), it is better at this time to choose the fullest tank.

8 - Passengers briefing . . . . . **As required**

9 - Seats, belts and harnesses . . . . . **LOCKED**

10 - Passengers' table . . . . . **REMOVED**



AMPLIFIED PROCEDURES

**BEFORE LANDING (1/2)**

**Long final**

- 1 - Altimeters ..... **CHECK**
- 2 - Fuel
  - Gages ..... **CHECK**  
**(Quantity / Symmetry)**
  - Fullest tank ..... **SELECT**  
Maximum tolerated dissymmetry is 25 us gal (95 Litres).
- 3 - "INERT SEP" switch ..... (IAS ≤ 200 KIAS) ..... **ON**
- 4 - Propeller lever ..... **MAX RPM**

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- 5 - Landing gear control ..... (IAS ≤ 178 KIAS) ..... **DN**
  - Green warning lights ..... **ON**
  - Red warning light ..... **OFF**

Post-MOD70-021-32

- 5 - Landing gear control ..... (IAS ≤ 178 KIAS) ..... **DN**
  - Green indicator lights ..... **ON**
  - Red warning light ..... **OFF**

During the sequence :

- The red warning light flashes ; it indicates that the landing gear motor is running. It goes off when the 3 landing gears are locked. Steady ON red warning light indicates an anomaly (refer to 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.

All

- 6 - Flaps ..... (IAS ≤ 178 KIAS) ..... **TO**
- 7 - Lights
  - "L.LDG / TAXI / R.LDG" ..... **ON**



## AMPLIFIED PROCEDURES

**BEFORE LANDING (2/2)****Short final**

- 8 - Autopilot ..... **OFF**  
Autopilot must be disconnected at the latest at 200 ft above the ground or at decision height or before go-around, whichever is the highest.
- 9 - Flaps ..... (IAS  $\leq$  122 KIAS) ..... **LDG**  
However, when autopilot is engaged, in APR mode, with coupled GS, flaps must be extended in landing position before crossing the OUTER MARKER.
- 10 - Approach speed (Flaps LDG) ..... **80 KIAS**  
To ensure positive and rapid engine response to throttle movement, it is recommended that a minimum of 10 % torque be maintained on final approach until landing is assured.
- 11 - "YAW DAMPER" push-button ..... **OFF**  
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.

AMPLIFIED PROCEDURES

**LANDING**

- 1 - Power lever ..... **IDLE**  
Avoid three-point landings. Adopt a positive flight attitude in order to touch runway first with main landing gear.

■ *After wheels touch :*

- 2 - Reverse ..... **As required**  
(Reverse may be applied as soon as the wheels touch the ground.)  
To avoid ingestion of foreign objects, come out the reverse as speed reduces and use the brakes if necessary for further deceleration.  
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.

**CAUTION**  
**USE OF CONTROL REVERSE BETA ( $\beta$ ) RANGE (BEHIND THE FLIGHT IDLE POSITION) IS PROHIBITED DURING FLIGHT**  
**ON SNOWY OR DIRTY RUNWAY, IT IS BETTER NOT TO USE REVERSE**

- 3 - Brakes ..... **As required**  
It is advised not to brake energetically, as long as speed has not reached 40 KIAS, as otherwise wheels may be locked.

## AMPLIFIED PROCEDURES

**GO-AROUND**

## 1 - Simultaneously

- Power lever ..... **TRQ = 100 %**- Attitude ..... **7°5**

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.

2 - Flaps ..... **TO**

If speed has been maintained at 80 KIAS or more and TRQ 100 %, select TO flaps as soon as the 7°5 attitude has been attained.

*If the vertical speed is positive and if IAS is at or above 85 kt :*

3 - Landing gear control ..... **UP****All warning lights OFF**

*If IAS is at or above 110 kt :*

4 - Flaps ..... **UP**5 - Climb speed ..... **AS REQUIRED**

AMPLIFIED PROCEDURES

**TOUCH AND GO**

***After wheels touch***

- 1 - Flaps ..... **TO**  
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.
  
- 2 - Elevator trim ..... **Green sector**  
To use elevator trim manual control is faster than to use electric control. Ensure that runway length is sufficient to complete this sequence.
  
- 3 - Power lever ..... **Display TRQ = 100 %**
  
- 4 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**  
**ATTITUDE : 7° 5**

However, the pilot's operating handbook does not supply distances concerning touch and go. These distances are let to pilot's initiative.

## AMPLIFIED PROCEDURES

**AFTER LANDING**

## RUNWAY CLEAR - AIRPLANE STOPPED

- 1 - DE ICE SYSTEM panel
- "AIRFRAME DE ICE" switch ..... **OFF**
  - "PROP DE ICE" switch ..... **OFF**
  - "INERT SEP" switch ..... **CHECKED ON**

It is highly recommended to use inertial separator during all ground operations.

- "WINDSHIELD" switch ..... **As required**
- "PITOT 1 HTR" switch ..... **OFF**
- "PITOT 2 & STALL HTR" switch ..... **OFF**
- "BLEED VALVE" switch ..... **As required**

Taxiing with BLEED VALVE OFF may slightly help reduce the ITT, thus reducing the required stabilization time before shut-down. This should be applied only for short taxi duration and is left to the pilot judgement.

2 - Flaps ..... **UP**

## 3 - Lights

- "L.LDG / R.LDG" ..... **OFF**
- "TAXI" ..... **ON**

4 - "STROBE" switch ..... **OFF**

AMPLIFIED PROCEDURES

**SHUT-DOWN (1/3)**

- |   |                           |
|---|---------------------------|
| 1 - Parking brake .....   | <b>SET</b>                |
| WARNING CAS MESSAGE   | <b>"PARK BRAKE"</b>       |
|   | <b>ON</b>                 |
| 2 - Pressurization  |                           |
| - "BLEED VALVE" switch .....  | <b>OFF</b>                |
| - Check for cabin depressurization  |                           |
| 3 - "FAN FLOW" switch (if installed) .....  | <b>As required</b>        |
| 4 - "AIR COND" switch (if installed) .....  | <b>OFF</b>                |
| 5 - Condition lever .....   | <b>HI / IDLE</b>          |
| 6 - Power lever .....   | <b>IDLE for 2 minutes</b> |
| This allows the engine to stabilize at minimum obtainable ITT in order to minimize the likelihood of oil coking in the #3 bearing area. |                           |
| 7 - "TAXI" light .....  | <b>OFF</b>                |
| 8 - "AP / TRIMS MASTER" switch .....  | <b>OFF</b>                |

**CAUTION**

**IN CASE OF SHUT-DOWN ON A CONTAMINATED  
AREA :**

- **Condition lever** .....
- **Propeller governor lever** .....



AMPLIFIED PROCEDURES

**SHUT-DOWN (1/3)**

- |   |                                   |
|---|-----------------------------------|
| 1 - Parking brake .....   | <b>SET</b>                        |
| WARNING CAS MESSAGE   | <b>“PARK BRAKE”</b>               |
|   | <b>ON</b>                         |
| 2 - Pressurization  |                                   |
| - “BLEED VALVE” switch .....  | <b>OFF</b>                        |
| - Check for cabin depressurization  |                                   |
| 3 - “FAN FLOW” switch (if installed) .....  | <b>As required</b>                |
| 4 - “AIR COND” switch (if installed) .....  | <b>OFF</b>                        |
| 5 - Condition lever .....   | <b>HI / IDLE</b>                  |
| 6 - Power lever .....   | <b>IDLE for 2 minutes minimum</b> |
| <p>This allows the engine to stabilize at minimum obtainable ITT in order to prevent the likelihood of oil coking in the #3 bearing area. ITT is considered stabilized when variations are less than <math>\pm 5^{\circ}\text{C}</math>. If BLEED VALVE was selected to OFF after landing and taxi was performed at IDLE power, the taxi time is considered as cooling time. Therefore the above stabilization time can be reduced accordingly.</p> |                                   |
| 7 - “TAXI” light .....  | <b>OFF</b>                        |
| 8 - “AP / TRIMS MASTER” switch .....  | <b>OFF</b>                        |

**CAUTION**

**IN CASE OF SHUT-DOWN ON A CONTAMINATED AREA :**

- Condition lever .....
- CUT OFF**
- Propeller governor lever .....
- FEATHER**





## AMPLIFIED PROCEDURES

**SHUT-DOWN (2/3)**

- 9 - Propeller governor lever . . . . . **FEATHER for 15 seconds**  
Keep propeller governor lever on FEATHER position for 15 seconds minimum before shutting down engine.
- 10 - Condition lever . . . . . **CUT OFF**
- 11 - "INERT SEP" switch . . . . . **OFF**
- 12 - "AVIONICS" MASTER switch . . . . . **OFF**
- 13 - EXT LIGHTS panel  
- All switches . . . . . **OFF**
- 14 - INT LIGHTS panel  
- All switches . . . . . **OFF**
- 15 - Fuel  
When fuel pressure is below 10 psi ( $\pm$  2 psi), check "AUX BP" pump is operating.  
- "AUX BP" switch . . . . . **OFF**  
- "FUEL SEL" switch . . . . . **MAN**  
- Tank selector . . . . . **OFF**
- 16 - "GENERATOR" selector . . . . . **OFF**
- 17 - "SOURCE" selector . . . . . **OFF**
- 18 - CRASH lever . . . . . **PULL DOWN**
- 19 - Parking brake . . . . . **As required**

**CAUTION**

**IN CASE OF HIGH OAT [ABOVE 35° C (95° F)], IT IS REQUIRED TO PERFORM 30 SECONDS DRY MOTORING RUN AFTER SHUT-DOWN TO IMPROVE COOLING OF THE BEARING CAVITIES AND MINIMIZE OIL COKING (REFER TO PARAGRAPH "MOTORING")**

## AMPLIFIED PROCEDURES

**SHUT-DOWN (2/3)**

- 9 - Propeller governor lever ..... **FEATHER for 15 seconds**  
Keep propeller governor lever on FEATHER position for 15 seconds minimum before shutting down engine.
- 10 - Condition lever ..... **CUT OFF**
- 11 - "INERT SEP" switch ..... **OFF**
- 12 - "AVIONICS" MASTER switch ..... **OFF**
- 13 - EXT LIGHTS panel  
- All switches ..... **OFF**
- 14 - INT LIGHTS panel  
- All switches ..... **OFF**
- 15 - Fuel  
When fuel pressure is below 10 psi ( $\pm 2$  psi), check "AUX BP" pump is operating.  
- "AUX BP" switch ..... **OFF**  
- "FUEL SEL" switch ..... **MAN**  
- Tank selector ..... **OFF**
- 16 - "GENERATOR" selector ..... **OFF**
- 17 - "SOURCE" selector ..... **OFF**
- 18 - CRASH lever ..... **PULL DOWN**
- 19 - Parking brake ..... **As required**

**CAUTION**

**IN CASE OF HIGH OAT [ABOVE 35° C (95° F)], IT IS RECOMMENDED TO PERFORM 30 SECONDS DRY MOTORING RUN AFTER SHUT-DOWN TO IMPROVE COOLING OF THE BEARING CAVITIES AND PREVENT OIL COKING (REFER TO PARAGRAPH "MOTORING")**

AMPLIFIED PROCEDURES

**SHUT-DOWN (3/3)**

Post-MOD70-0335-34 (ESI-2000)

- ESI-2000 - NORMAL PROCEDURE

No pilot action required for normal shutdown. The ESI-2000 will shut down within 5 minutes.

- ESI-2000 - MANUAL PROCEDURE

The ESI-2000 can be manually shut down when in the discharge mode to conserve battery power :

- . Remove all aircraft power from the ESI
- . Press any key (button) as stated by the on screen message
- . Press the M (Menu) button repeatedly until shutdown menu is shown.
- . Press and hold the + (Hold) button until "SHUTTING DN" message is shown in the upper left corner of the screen.

## 4.5 - PARTICULAR PROCEDURES

### REMARK :

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 (1/5)

#### General

- 1 - 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).
- 2 - 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 5.4.1 to convert OAT to SAT in flight.

$SAT = OAT - 2^{\circ}C$  on the ground.

- 3 - Flight into known icing conditions is authorized when all airplane equipment provided for ice protection is operating correctly. This includes :
  - Pneumatic deice system for inboard and outboard wing, for stabilizers and for elevator horns.
  - Propeller electrical deice system.
  - Electrical heating system for both pitots and for the stall warning incidence sensor.
  - Windshield electrical deice system.
  - 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.

## PARTICULAR PROCEDURES

### FLIGHT INTO KNOWN ICING CONDITIONS (2/5)

Boots are automatically cycling at the optimum time to assure proper ice removal. Correct operation of the system can be checked observing the corresponding green advisory light illumination at each boot inflation impulse. If correct operation cannot be confirmed, do not enter or leave as soon as possible icing conditions.

Apply "LEADING EDGES DEICING FAILURE" emergency procedure.

#### Ice protection procedures

- 1 - Prior to entering IMC, as a preventive :

*If OAT ≤ 5° C :*

- "INERT SEP" switch ..... **ON**
- "IGNITION" switch ..... **ON**
- "PROP DE ICE" switch ..... **ON**
- "AIRFRAME DE ICE" switch ..... **ON**
- "WINDSHIELD DE ICE" switch ..... **ON**

- 2 - When operating under IMC :

- "INERT SEP" switch ..... **ON**
- "IGNITION" switch ..... **ON**
- "PROP DE ICE" switch ..... **ON**
- "AIRFRAME DE ICE" switch ..... **ON**
- "WINDSHIELD DE ICE" switch ..... **ON**

#### NOTE :

*When OAT is below - 35° C, avoid operations of the "AIRFRAME DEICE SYSTEM" for a too long period because the boots could be damaged. The "INERT SEP" switch must be left ON while the airplane remains in icing conditions.*

## PARTICULAR PROCEDURES

## FLIGHT INTO KNOWN ICING CONDITIONS (3/5)

**CAUTION**

**SHOULD CONDITIONS REQUIRE IT, APPLY THESE DIRECTIVES FROM BEGINNING OF TAXI ONWARDS**

**CAUTION**

**DO NOT OPERATE THE INERTIAL SEPARATOR IF THE AIRSPEED EXCEEDS 200 KIAS. THERE IS NO SPEED LIMITATION WHEN THE INERTIAL SEPARATOR IS IN FIXED POSITION**

If a high speed descent (> 200 KIAS) is anticipated into known icing conditions, position "INERT SEP" switch to ON before accelerating. This will avoid reducing speed below 200 KIAS during descent to set the inertial separator.

**IF AIRPLANE LEAVES ICING CONDITIONS, MAINTAIN "INERT SEP" ON AS LONG AS ICE THICKNESS ON NON-DEICED VISIBLE PARTS EXCEEDS 15 mm (OR ½ INCH)**

This will avoid ice fragments coming from propeller spinner and being ingested by engine.

**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**

**NOTE :**

*"IGNITION" switch may be left ON for a long period.*

*Standby compass indications are altered when windshield deicing system(s) operate(s).*

## PARTICULAR PROCEDURES

### **FLIGHT INTO KNOWN ICING CONDITIONS (4/5)**

- 3 - Procedures for holding, approach and landing in icing conditions :
  - Minimum recommended speeds are :
    - . Flaps UP            130 KIAS
    - . Flaps TO            110 KIAS
    - . Flaps LDG           90 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 speeds noted above.

## PARTICULAR PROCEDURES

**FLIGHT INTO KNOWN ICING CONDITIONS (5/5)****Ice accumulation effects**

When ice has accumulated on the unprotected surfaces of the airplane, aerodynamic characteristics may be changed.

Particularly stall speeds may increase by up to :

- Flaps UP            20 KIAS
- Flaps TO            15 KIAS
- Flaps LDG        10 KIAS

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

Indeed, in case of severe or prolonged icing, an ice concretion due to refreezing around the heated stall warning may appear. Above-recommended speeds take into account, on one side, the stall speed 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 speeds 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 speed, landing distances will be increased. In the landing configuration, using 90 KIAS approach speed increases landing distance by 20 % - refer to Chapter 5.13 "LANDING DISTANCES".



## PARTICULAR PROCEDURES

### FLIGHT INTO SEVERE ICING CONDITIONS (1/2)

**THE FOLLOWING WEATHER CONDITIONS MAY BE CONDUCTIVE  
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**

**REMARK :**

*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 aircraft has been certificated.
- 2 - Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.
- 3 - Do not engage the autopilot.
- 4 - If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot.
- 5 - If an unusual roll response or uncommanded roll control movement is observed, reduce the angle-of-attack.

## PARTICULAR PROCEDURES

**FLIGHT INTO SEVERE ICING CONDITIONS (2/2)**

- 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.
- 7 - If the flaps are extended, do not retract them until the airframe is clear of ice.
- 8 - Report these weather conditions to Air Traffic Control.

PARTICULAR PROCEDURES

**FLIGHT UNDER HEAVY PRECIPITATIONS**

- 1 - "IGNITION" switch ..... **ON**  
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**

**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**

**UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW (1/2)**

*Refer if required to paragraph "UTILIZATION BY COLD WEATHER AND VERY COLD WEATHER".*

**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**

- 1 - "INERT SEP" switch ..... **ON**
- 2 - Taxi at very slow speed (max. 5 KIAS), flaps up, brake occasionally to maintain the brake pads warm (this will prevent any subsequent locking due to freezing after takeoff).

## PARTICULAR PROCEDURES

**UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT  
TAMPED SNOW (2/2)****Before takeoff**

- 1 - If the runway is long enough, takeoff should be performed with the flaps in the up position. In that case, rotation speed must be 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.*

- 2 - "IGNITION" switch ..... **ON**
- 3 - "INERT SEP" switch ..... **ON**

**Takeoff**

- 1 - Lightly lift up nose wheel during takeoff run in order to reduce the forward resistance due to snow accumulation against the wheel.
- 2 - After takeoff, normally retract the landing gear, then perform a complete cycle (extension / retraction) at IAS  $\leq$  128 KIAS.

**Before landing**

- 1 - "IGNITION" switch ..... **ON**
- 2 - "INERT SEP" switch ..... **ON**

**Touch and Go**

Prohibited

**On the ramp, after landing or taxiing :**

- 1 - Do not use the parking brake to prevent brake lock.
- 2 - Use chocks and / or tie-down the airplane.

PARTICULAR PROCEDURES

**UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS (1/2)**

*Refer if required to paragraph "UTILIZATION BY COLD WEATHER AND VERY COLD WEATHER".*

**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**

- 1 - "INERT SEP" switch ..... **ON**
- 2 - Taxi at very slow speed (max. 5 KIAS).  
Use  $\beta$  area of power lever to adjust speed.  
Apply very smooth variations using power lever.
- 3 - Steer the airplane using the rudder.  
Make turns at a very low speed, engine torque tends to make the airplane turn to the left.
- 4 - Use brakes only at very low speed and progressively.

**Before takeoff**

- 1 - "IGNITION" switch ..... **ON**
- 2 - "INERT SEP" switch ..... **ON**

**Takeoff**

- 1 - After takeoff, normally retract the landing gear, then perform a complete cycle (extension / retraction) at IAS  $\leq$  128 KIAS.

**Before landing**

- 1 - "IGNITION" switch ..... **ON**
- 2 - "INERT SEP" switch ..... **ON**

## PARTICULAR PROCEDURES

**UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW  
RUNWAYS (2/2)****Landing**

After wheel touch

- 1 - Use reverse only if necessary and very progressively by monitoring the airplane behaviour.  
The engine torque tends to make the airplane turn to the left.
- 2 - Taxi at very slow speed (max. 5 KIAS).  
Use  $\beta$  area of power lever to adjust speed.  
Apply very smooth variations using power lever.
- 3 - Steer the airplane using the rudder.  
Make turns at a very low speed, engine torque tends to make the airplane turn to the left.
- 4 - Use brakes only at very low speed and progressively.

**On the ramp, after landing or taxiing :**

- 1 - Do not use the parking brake to prevent brake lock.
- 2 - Use chocks and / or tie-down the airplane.

PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (- 0° C TO - 25° C) AND VERY COLD WEATHER (- 25° C TO - 40° C) (1/10)

REMARK :

The procedures hereafter supplement the normal procedures for the airplane use when operating under temperatures between 0° C and - 40° C on ground.

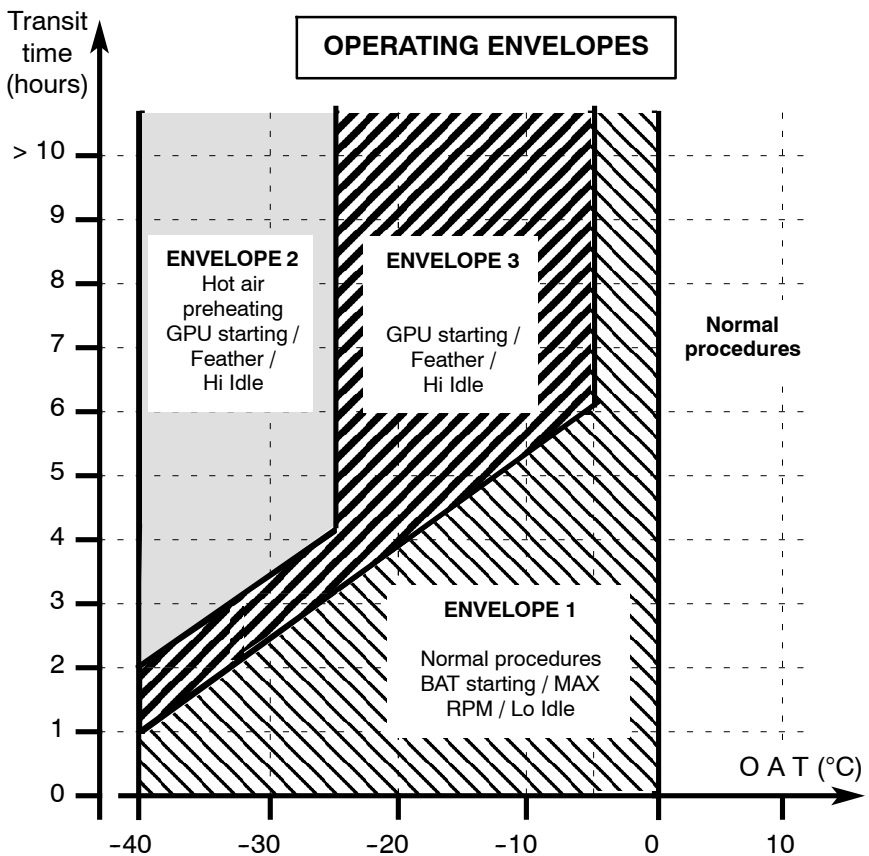


Figure 4.5.1 - OPERATING ENVELOPES BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C)

## PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0°C to - 25°C) AND VERY COLD WEATHER (- 25°C to - 40°C) (2/10)****ENVELOPE 1**

The procedures hereafter supplement 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.

Apply, according to the condition of runways and taxiways, the procedures "UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW" or the procedures "UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS".

- 2 - Carry out a complete rotation of the propeller to check its free rotation.
- 3 - 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.
- 4 - Remove chocks and / or release ties from the airplane.
- 5 - Check the free deflection of the flight controls and of the elevator trim.
- 6 - Check the free deflection of the power lever and of the propeller governor lever.

**Before starting the engine / Starting the engine / After starting the engine**

Apply normal procedures defined in Chapter(s) 4.3 and / or 4.4.



PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0°C to - 25°C) AND VERY COLD WEATHER (- 25°C to - 40°C) (3/10)**

**Taxiing / Before takeoff / Takeoff**

- 1 - On "DE-ICE SYSTEM" panel :
  - "INERT SEP" switch ..... **ON**  
**WARNING CAS MESSAGE "INERT SEP ON" ON**
  - "PITOT 1 HTR" switch ..... **ON**
  - "PITOT 2 & STALL HTR" switch ..... **ON**
  - "PROP DE-ICE" switch ..... **ON**
- 2 - Apply normal procedures
- 3 - Apply, according to the condition of runways and taxiways, the procedures "UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW" or the procedures "UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS".

**Landing / After landing**

- 1 - Apply normal procedures defined in Chapter(s) 4.3 and / or 4.4.
- 2 - Apply, according to the condition of runways and taxiways, the procedures "UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW" or the procedures "UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS".

**Shut down**

- 1 - Parking brake ..... **RELEASED**  
**WARNING CAS MESSAGE "PARK BRAKE" OFF**  
It is recommended not to use the parking brake by cold or very cold weather, so that the brakes do not stick when cooling.
- 2 - Apply normal procedures defined in Chapter(s) 4.3 and / or 4.4.
- 3 - Use chocks and / or tie-down the airplane using anchor points on ground.
- 4 - Put blanking caps and plugs on air inlets, exhaust stubs, pitots and static ports.

## PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C) (4/10)****ENVELOPE 2**

The procedures hereafter supplement or replace the normal procedures for the airplane use when operating in the "envelope 3" defined in Figure 4.5.1.

**Preflight inspection**

- 1 - Preheat the engine and the cabin.

Preheating the engine and the cabin 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,
- in the cabin by half-opening the upper half-door.

- 2 - Remove any snow or ice from the wings, stabilizers and movable surfaces.

Apply, according to the condition of runways and taxiways, the procedures "UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW" or the procedures "UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS".

- 3 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly before takeoff.
- 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 the power lever and of the propeller governor lever.

PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C) (5/10)**

9 -	"IGNITION" switch	ON during 30 seconds
	WARNING CAS MESSAGE	"IGNITION" ON
	then "IGNITION" switch	AUTO
	WARNING CAS MESSAGE	"IGNITION" OFF

This enables to preheat spark igniters before starting the engine.

**Before starting the engine**

Apply normal procedures defined in Chapter(s) 4.3 and / or 4.4.

**Starting the engine**

The starting must be mandatorily performed using an external power source (GPU).

- 1 - Ground power unit ..... **CONNECTED**
- 2 - "SOURCE" selector ..... **GPU**
  - WARNING CAS MESSAGE "GPU DOOR" ON
  - WARNING CAS MESSAGE "BAT OFF" ON
  - Voltmeter ..... **VOLTAGE CHECKED**  
**(U = 28 Volts)**
- 3 - Engine controls
  - "MAN OVRD" control ..... **OFF (Notched)**

**CAUTION**  
**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER**  
**MUST NOT BE MOVED BEHIND THE FLIGHT IDLE**  
**POSITION**

## PARTICULAR PROCEDURES

### UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C) (6/10)

- Power lever ..... **IDLE**

- Propeller governor lever ..... **Feather**

- Condition lever ..... **CUT OFF**

4 - Fuel panel

- "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**

**WARNING CAS MESSAGE "FUEL PRESS" OFF**

- Fuel pressure indicator ..... **Check**

5 - Propeller ..... **AREA CLEAR**

6 - "ENGINE START" panel

- "IGNITION" switch ..... **ON**  
**WARNING CAS MESSAGE "IGNITION" ON**

- "STARTER" switch ..... **ON**

**WARNING CAS MESSAGE "STARTER" ON**

Ng ≈ 13 %

- Condition lever ..... **HI / IDLE**

Move directly condition lever 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.*

■ 7 - Engine instruments ..... **Check NG = 69% (± 2%)  
(Oil pressure / ITT = green sector)**

PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C) (6/10)**

- Power lever ..... **IDLE**

- Propeller governor lever ..... **Feather**

- Condition lever ..... **CUT OFF**

4 - Fuel panel

- "AUX BP" switch ..... **ON**

**WARNING CAS MESSAGE "AUX BOOST PMP ON" ON**

**WARNING CAS MESSAGE "FUEL PRESS" OFF**

- Fuel pressure indicator ..... **Check**

5 - Propeller ..... **AREA CLEAR**

6 - "ENGINE START" panel

- "IGNITION" switch ..... **ON**  
**WARNING CAS MESSAGE "IGNITION" ON**

- "STARTER" switch ..... **ON**

**WARNING CAS MESSAGE "STARTER" ON**

Ng ≈ 13 %

- Condition lever ..... **HI / IDLE**

Move directly condition lever 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.*

7 - Engine instruments ..... **Check NG = 68 % (± 1%)  
(Oil pressure / ITT = green sector)**



## PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY  
COLD WEATHER (- 25° C to - 40° C) (8/10)****Taxiing / Before takeoff / Takeoff**

Apply procedures defined for Envelope 1.

**Landing / After landing / Shut down**

Apply procedures defined for Envelope 1.

PARTICULAR PROCEDURES

**UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C) (9/10)**

**ENVELOPE 3**

The procedures defined for the "envelope 3" are also applicable for the "envelope 2". However it is possible to start the engine using GPU **without preheating of the engine and the cabin** with a heater. In that case the procedure "After starting the engine" is modified as follows :

**Preflight inspection / Before starting the engine / Starting the engine**

Apply the procedures defined for the Envelope 3.

**After starting the engine**

- 1 - "ECS" panel

As soon as the current flow is lower than 100 A :

- "BLEED VALVE" switch ..... **ON**
- "CABIN TEMP" selector ..... **FULL HOT**

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.

- 2 - Propeller governor lever

As soon as the oil temperature is greater than 0°C :

- Propeller governor lever ..... **MAX. RPM**
- Perform 2 propeller regulations

- 3 - Apply normal procedures defined in Chapter(s) 4.3 and / or 4.4.



## PARTICULAR PROCEDURES

### UTILIZATION BY COLD WEATHER (- 0° C to - 25° C) AND VERY COLD WEATHER (- 25° C to - 40° C) (10/10)

#### Taxiing / Before takeoff / Takeoff

Apply procedures defined for Envelope 1.

#### Landing / After landing / Shut down

Apply procedures defined for Envelope 1.

#### Complement

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 8.9.

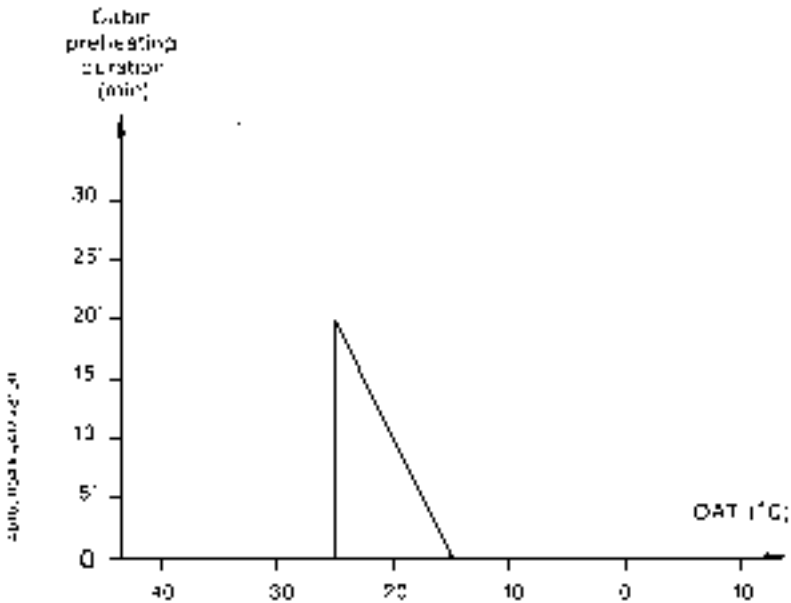


Figure 4.5.2 - PREHEATING DURATION

## PARTICULAR PROCEDURES

### LANDING PROCEDURE WITH STRONG HEADWIND OR CROSSWIND (1/2)

If landing must be performed with strong headwind or crosswind, increase approach speed by the greatest of these 2 following values :

$$- \Delta V = \frac{(\text{WIND DOWN} - 10)}{2} \quad (\text{Ex. WIND DOWN} = 30 \text{ kt i.e. } \Delta V = 10 \text{ kt})$$

*The wind down is the longitudinal component of the wind.*

- Gust amplitude

Use flaps LDG.

It is not desirable to adopt configuration with flaps TO. 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, maintain airplane in drift correction at the latest until the beginning of flare.

In short final, on a short runway, it is necessary to use normal approach speed (80 KIAS) with flaps LDG, in order to avoid an excessive speed. Indeed, in this case, landing distance indicated in Chapter 5.13, would not be respected.

Before touch-down, generate a slideslip with the rudder in order to align fuselage with the runway (ie left crosswind, left wing low).

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.

Retract flaps immediately after landing.

Flap travel is slow and will not have an appreciable effect on landing performance.

## PARTICULAR PROCEDURES

**LANDING PROCEDURE WITH STRONG HEADWIND OR  
CROSSWIND (2/2)**

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 second taxi phase after landing and during first taxi phase before takeoff.

**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.

PARTICULAR PROCEDURES

**UTILIZATION ON GRASS RUNWAY**

**CAUTION**  
**THE SMALL WHEELS OF THE AIRPLANE AND ITS WEIGHT MAY  
LEAD IT TO SINK IN SOPPY OR LOOSE GROUND**

■ Before planning the landing, ensure that the field is hard, smooth and dry enough. Landing and, a fortiori, takeoff shall not be envisaged if any doubt exists about the condition of such a runway.

**Particular directives**

**TAXI / TAKEOFF**

- 1 - "INERT SEP" switch ..... **ON**
- 2 - Reverse ..... **Do not use**  
In fact, on a flat runway with grass, it is necessary to adopt a power greater than the one obtained when the power lever is set to IDLE, so the pilot will not be tempted to use the reverse.

**LANDING**

- 1 - "INERT SEP" switch ..... **ON**

*After wheel touch down :*

- 2 - Reverse ..... **Only if necessary**

Do not maintain reverse at speeds below 40 KIAS to avoid ingestion of foreign matter.

Indeed, under this speed, using the reverse makes a cloud of solid particles (dusts, sand, gravels, trocken grass, and so on ...) appear around the front face of the airplane. This will damage the propeller and, after ingestion, the engine internal components (compressor and turbine blades).

**PARTICULAR PROCEDURES****GPS NAVIGATION (1/2)****Set up conditions**

- Verify if the data base is current.
- Verify that altitude data is valid for the GPS prior to flight.
- In case of B-RNAV use :

During the preflight planning phase, the availability of GPS integrity (RAIM) shall be confirmed for the intended flight (route and time).

RAIM computation is automatically done by G1000 system.

B-RNAV flight dispatch shall not be made in the event of a continuous loss of RAIM for more than 5 minutes predicted in any part of the intended flight.

When less than 24 satellites are available (or less than 23 if equipment uses pressure altitude information), the pilot must make sure that RAIM function is available on the projected route and for the flight period in B-RNAV areas. An alarm is provided by G1000 system in that case.

When 23 or more satellites are available, the prediction of satellite position is valid for 7 days. Their predicted availability is ensured for 48 hours by EUROCONTROL.

When less than 23 satellites are available, the predicted availability of RAIM shall be confirmed short before each flight.

**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.

## PARTICULAR PROCEDURES

### GPS NAVIGATION (2/2)

#### Non precision approach with coupled autopilot

Coupling with autopilot may be made in "NAV" mode, except in the following cases :

- holding pattern,
  - landing pattern turn,
  - interrupted approach,
- which have to be made in "HDG" mode.

For memory, the approach particular point name in the GARMIN system is as follows :

- IA = IAF
- FA = FAF ou FAP
- MA = MAP
- MH = MAHP

# SECTION 5

## PERFORMANCE

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**5.1 - ACOUSTIC LIMITATION**

	Maximum noise level permissible	Demonstrated noise level
ICAO, Annex 16, Chapter 6, Appendix 3	<b>80 dB(A)</b>	<b>73.3 dB(A)</b>
ICAO, Annex 16, Chapter 10, Appendix 6	<b>88 dB(A)</b>	<b>80.4 dB(A)</b>

TBM 700 airplane has received the noise limitation type certificate Nr N181 dated 31st January 1990 replaced by the Type Certificate Data Sheet EASA.A.010 on 14th July 2004.

## **5.1A - FLYOVER NOISE LEVEL**

Flyover noise level measured in accordance with 14 CFR Part 36 Appendix F : 77.4 dB (A).

**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.*

## 5.2 - 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	127	70	69	60	58
150	152	80	80	70	68
175	177	90	90	80	78
200	205	100	101	90	88
225	228	120	121	100	98
250	253	140	141	110	108
266	271	160	162	120	118
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	146	81	79	69	67
173	175	92	92	81	78
201	204	104	104	92	90
230	233	115	116	104	101
259	262	138	139	115	113
288	292	161	162	127	124
307	311	184	187	138	136

Figure 5.2.1 - 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 5.2.2 - ALTERNATE STATIC SOURCE (BLEED LO)

## 5.3 - CABIN PRESSURIZATION ENVELOPE

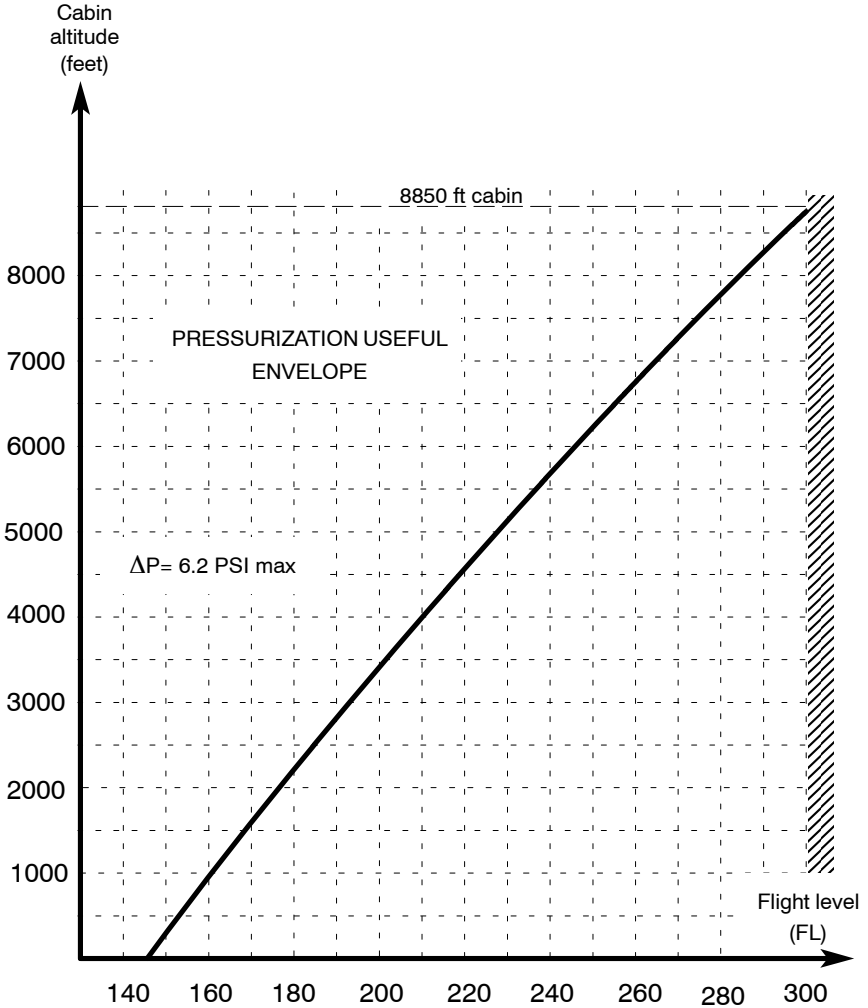


Figure 5.3.1 - CABIN PRESSURIZATION ENVELOPE

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## 5.4 - 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 5.4.1 - SAT - OAT CONVERSIONS

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## 5.5 - STALL SPEEDS

AIR- PLANE 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

Figure 5.5.1 - STALL SPEEDS

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## 5.6 - WIND COMPONENTS

EXAMPLE : Angle between wind direction and flight path : 50°  
 Headwind : 8 kts  
 Crosswind : 10 kts  
 Wind speed : 13 kts

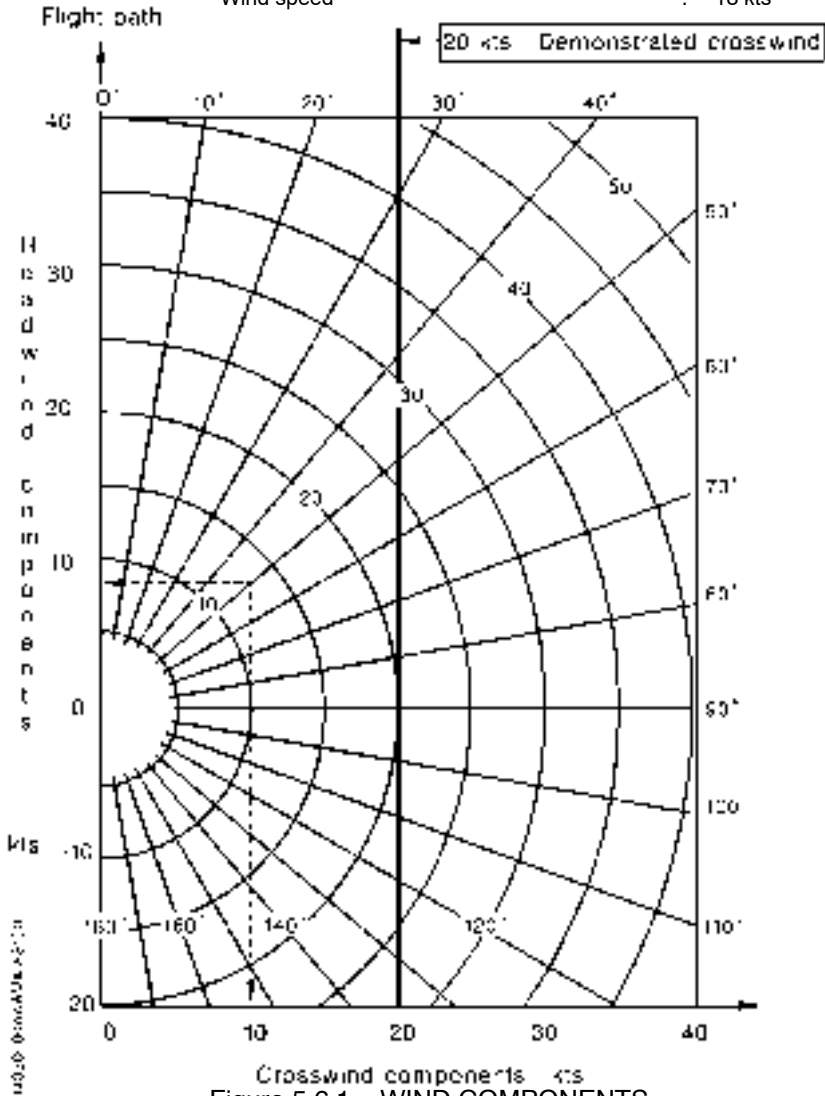


Figure 5.6.1 - WIND COMPONENTS

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## 5.7 - ENGINE OPERATION

The following tables must be used during normal operation of the airplane.

The following conditions are given :

- $N_p = 2000$  RPM,
- BLEED LO.

The torque must be set at or below the value corresponding to the local conditions of flight level and temperature.

Example : for FL = 260 and OAT = - 30°C, the following tables give the maximum torque to be set.

Maximum climb power : TRQ = 84 % for IAS = 130 KIAS  
(Add 1 % of TRQ for each additional 10 KIAS on climb airspeed)  
(cf. tables Figures 5.7.1A and 5.7.1B)

Maximum cruise power : TRQ = 98 %  
(cf. tables Figures 5.7.2A and 5.7.2B)

Recommended cruise power : TRQ = 92 %  
(cf. tables Figures 5.7.3A and 5.7.3B)

### CAUTION

**THE TRQ SETTING MUST NEVER EXCEED 100 % FOR  
NP = 2000 RPM**

#### REMARK :

*The engine ITT limit at 800°C during continuous operation may be used in case of operational need. However, in order to ensure a good engine aging, an ITT limit at 785°C is recommended during continuous operation (climb and cruise).*

**ENGINE OPERATION**

Conditions : **Maximum climb power (FL ≤ 200)**  ISA  
 Landing gear and flaps UP  
 IAS = 130 KIAS - Np = 2000 RPM - BLEED LO

**NOTE :**  
 Add 1 % of TRQ for each additional 10 KCAS on climb airspeed

OAT (°C)	FLIGHT LEVEL (FL)										
	100	110	120	130	140	150	160	170	180	190	200
- 24											
- 22											
- 20											
- 18											100
- 16											99
- 14											97
- 12										100	95
- 10										98	93
- 08									100	96	91
- 06									99	94	89
- 04								100	97	92	87
- 02								99	95	90	85
0								97	93	87	82
+ 02							100	95	90	85	80
+ 04							98	93	88	82	78
+ 06						100	95	91	86	80	75
+ 08						98	93	88	83	78	72
+ 10					100	95	90	86	81	74	69
+ 12				100	97	93	88	83	78	71	66
+ 14				99	95	90	85	80	74	69	
+ 16			100	97	92	88	82	77	71		
+ 18			99	94	90	84	79	67			
+ 20		100	96	92	86	81	67				
+ 22		98	94	88	83	68					
+ 24	100	96	90	76	67						
+ 26	97	84	76	67							
+ 28	84	75	67								
+ 30	74	68									
+ 32	69										

**CAUTION**  
**THE TRQ SETTING MUST NEVER EXCEED 100 % FOR Np = 2000 RPM**

Figure 5.7.1A - ENGINE OPERATION  
 [Maximum climb power (FL ≤ 200)]

### ENGINE OPERATION

Conditions : **Maximum climb power (FL ≥ 200)**  ISA

Landing gear and flaps UP

IAS = 130 KIAS - Np = 2000 RPM - BLEED LO

NOTE :

Add 1 % of TRQ for each additional 10 KCAS on climb airspeed

OAT (°C)	FLIGHT LEVEL (FL)										
	200	210	220	230	240	250	260	270	280	290	300
- 64										100	94
- 62										97	92
- 60									100	95	90
- 58									99	93	88
- 56									97	91	85
- 54		<b>TRQ = 100 %</b>						100	94	89	84
- 52								98	92	87	82
- 50							100	95	90	85	80
- 48							99	93	88	83	79
- 46							97	92	87	82	77
- 44						100	95	90	85	80	76
- 42						98	93	88	83	79	75
- 40						97	92	87	82	78	73
- 38					100	95	90	85	81	76	72
- 36					98	94	89	84	79	74	70
- 34					97	92	87	82	77	73	68
- 32				100	95	91	86	81	76	71	66
- 30				99	94	89	84	79	74	69	65
- 28				97	92	87	82	77	72	68	63
- 26			100	95	90	85	80	75	70	66	61
- 24			98	93	88	83	78	73	69	64	59
- 22		100	95	91	86	81	76	71	67	62	58
- 20		98	94	89	84	79	74	70	65	60	57
- 18	100	96	92	87	82	77	73	68	63	59	55
- 16	99	94	90	85	80	75	71	66	61	57	53
- 14	97	92	88	83	78	74	69	64	59	55	
- 12	95	90	86	81	76	72	67	62	57	53	
- 10	93	88	84	79	74	70	65	60	55		
- 08	91	86	82	77	72	68	63	58	53		
- 06	89	84	80	75	70	65	60	56			
- 04	87	82	77	73	68	63	58	54			
- 02	85	80	75	70	66	60	55				
0	82	78	73	68	63	57	53				
+ 02	80	75	70	65	60	55					
+ 04	78	73	67	62	57						
+ 06	75	70	65	59							
+ 08	72	67	62								
+ 10	69	64									
+ 12	66										

### CAUTION

**THE TRQ SETTING MUST NEVER EXCEED 100 % FOR Np = 2000 RPM**

Figure 5.7.1B - ENGINE OPERATION

[Maximum climb power (FL ≥ 200)]

ENGINE OPERATION

Conditions : **Maximum cruise power (FL ≤ 200)**  ISA

Landing gear and flaps UP  
Np = 2000 RPM - BLEED LO

NOTE :

Use preferably recommended cruise power

OAT (°C)	FLIGHT LEVEL (FL)											
	100	110	120	130	140	150	160	170	180	190	200	
- 24												
- 22												
- 20												
- 18												
- 16												
- 14												
- 12												
- 10												
- 08												100
- 06												99
- 04												97
- 02											100	95
0											98	93
+ 02										100	95	91
+ 04										98	93	88
+ 06									100	96	91	85
+ 08									98	93	88	82
+ 10								100	96	91	84	78
+ 12								98	93	87	81	75
+ 14								97	91	85	79	
+ 16							100	93	87	82		
+ 18						100	96	90	84			
+ 20						98	92	86				
+ 22					100	95	89					
+ 24				100	97	84						
+ 26		100	92	84								
+ 28	100	92	83									
+ 30	91	83										
+ 32	82											

**CAUTION**

**THE TRQ SETTING MUST NEVER EXCEED 100 % FOR Np = 2000 RPM**

Figure 5.7.2A - ENGINE OPERATION  
[Maximum cruise power (FL ≤ 200)]



### ENGINE OPERATION

Conditions : **Maximum cruise power (FL ≥ 200)**  ISA

Landing gear and flaps UP  
Np = 2000 RPM - BLEED LO

NOTE :  
Use preferably recommended cruise power

OAT (°C)	FLIGHT LEVEL (FL)										
	200	210	220	230	240	250	260	270	280	290	300
- 64											
- 62											
- 60											100
- 58											98
- 56										100	96
- 54										98	94
- 52			<b>TRQ = 100 %</b>							97	92
- 50										100	95
- 48								98	93	88	
- 46								97	91	86	
- 44							100	95	89	84	
- 42							99	93	88	82	
- 40							97	91	86	80	
- 38						100	95	90	84	79	
- 36						99	93	88	82	77	
- 34						97	91	86	81	75	
- 32					100	95	89	84	79	73	
- 30					98	93	88	82	77	71	
- 28					96	91	86	80	75	69	
- 26					100	94	89	84	78	73	
- 24					98	92	87	82	76	71	
- 22				100	96	90	85	80	74	69	
- 20				98	94	88	83	78	72	67	
- 18				97	92	86	81	76	70	65	
- 16			100	95	90	84	79	74	68	63	
- 14			98	93	88	82	77	72	66	61	
- 12		100	96	91	86	80	74	69	64	59	
- 10		98	94	88	84	78	72	67	62	57	
- 08	100	96	92	86	81	75	70	65	59	54	
- 06	99	94	89	84	79	73	67	62	56	52	
- 04	97	92	87	81	77	71	65	59	54		
- 02	95	90	85	79	74	68	62	56			
0	93	87	82	76	71	65	60				
+ 02	91	85	80	73	69	62					
+ 04	88	82	77	71	66						
+ 06	85	79	74	68							
+ 08	82	76	72								
+ 10	78	73									
+ 12	75										

### CAUTION

**THE TRQ SETTING MUST NEVER EXCEED 100 % FOR Np = 2000 RPM**

Figure 5.7.2B - ENGINE OPERATION [Maximum cruise power (FL ≥ 200)]

ENGINE OPERATION

Conditions : **Normal (recommended) cruise power (FL ≤ 200)**  ISA  
 Landing gear and flaps UP  
 Np = 2000 RPM - BLEED LO

OAT (°C)	FLIGHT LEVEL (FL)												
	100	110	120	130	140	150	160	170	180	190	200		
- 24													
- 22													
- 20													
- 18													
- 16													
- 14												100	
- 12												98	
- 10												96	
- 08											100	94	
- 06											98	92	
- 04											100	96	90
- 02											99	93	87
0									100	96	91	85	
+ 02									98	93	88	82	
+ 04								100	95	90	85	79	
+ 06								98	93	88	83	76	
+ 08							100	95	90	85	81	74	
+ 10							98	93	88	83	78	71	
+ 12						100	95	90	86	80	74	67	
+ 14						98	93	88	82	76	62		
+ 16					100	95	91	85	72	63			
+ 18				100	97	93	84	72	63				
+ 20			100	99	95	81	72	64					
+ 22	100	94	88	80	72	64							
+ 24	93	88	80	72	65								
+ 26	87	79	71	66									
+ 28	79	73	67										
+ 30	74	69											
+ 32	70												

**CAUTION**  
**THE TRQ MUST NEVER EXCEED 100 % FOR Np = 2000 RPM**

Figure 5.7.3A - ENGINE OPERATION  
 [Normal (recommended) cruise power (FL ≤ 200)]

## ENGINE OPERATION

Conditions : **Normal (recommended) cruise power (FL ≥ 200)**  ISA

Landing gear and flaps UP

Np = 2000 RPM - BLEED LO

OAT (°C)	FLIGHT LEVEL (FL)										
	200	210	220	230	240	250	260	270	280	290	300
- 64											100
- 62											98
- 60										100	95
- 58										98	93
- 56										96	90
- 54									100	94	88
- 52									98	92	86
- 50								100	96	90	84
- 48								99	94	88	82
- 46								97	92	86	80
- 44							100	95	90	85	78
- 42								99	94	88	76
- 40								97	92	86	75
- 38							100	95	90	84	74
- 36							98	94	87	82	72
- 34							97	92	85	80	69
- 32					100		95	90	83	78	67
- 30					98		93	88	81	76	66
- 28				100	96		91	86	79	74	64
- 26				98	94		89	83	77	72	62
- 24				96	92		87	81	75	70	60
- 22			100	94	90		85	79	73	68	58
- 20			98	92	87		83	76	71	66	57
- 18		100	96	90	85		80	74	69	64	55
- 16		98	93	88	83		78	72	67	62	53
- 14	100	96	91	86	81		76	70	65	60	51
- 12	98	94	89	83	78		73	67	63	58	50
- 10	96	92	87	81	76		71	65	60	56	48
- 08	94	89	84	78	74		69	63	58	54	46
- 06	92	87	82	76	71		66	60	56	52	48
- 04	90	84	79	74	68		64	58	54	50	
- 02	87	82	77	71	66		61	56	52		
0	85	79	74	68	63		58	53			
+ 02	82	77	72	66	60		55				
+ 04	79	74	69	63	58						
+ 06	76	71	67	60							
+ 08	74	68	64								
+ 10	71	65									
+ 12	67										

**TRQ = 100 %**

### CAUTION

**THE TRQ MUST NEVER EXCEED 100 % FOR Np = 2000 RPM**

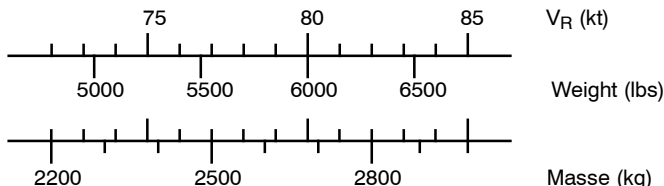
Figure 5.7.3B - ENGINE OPERATION  
[Normal (recommended) cruise power (FL ≥ 200)]

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## 5.8 - TAKEOFF DISTANCES

### WEIGHT : 5512 lbs (2500 kg)

- Associated conditions :
- Landing gear DN and flaps TO
  - 15° of attitude - TRQ = 100 %
  - Np = 2000 RPM - BLEED LO
  - Hard, dry and level runway
  - GR = Ground roll (in ft)
  - D<sub>50</sub> = Takeoff distance (clear to 50 ft) (in ft)
  - Rotation speed choice (V<sub>R</sub>)



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	787	1280	886	1411	951	1493	1017	1591
2000	886	1411	984	1558	1066	1657	1132	1772
4000	984	1558	1099	1722	1181	1837	1280	1968
6000	1099	1722	1230	1903	1329	2051	1444	2215
8000	1230	1903	1394	2149	1526	2329	1657	2510
PRESSURE ALTITUDE ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1083	1690	1148	1788	1214	1903	1247	1969
2000	1214	1870	1296	1985	1378	2133	1444	2231
4000	1363	2100	1476	2247	1575	2411	1640	2526
6000	1575	2379	1690	2559	1837	2756	1919	2887
8000	1804	2707	1968	2920	2100	3133	2198	3281

Figure 5.8.1 - TAKEOFF DISTANCES - 5512 lbs (2500 kg)

- Corrections :
- . Reduce total distances of 10 % every 10 kts of headwind
  - . Increase total distances of 30 % every 10 kts of tail-wind
  - . Increase by :
    - 7 % on hard grass    25 % on high grass
    - 10 % on short grass    30 % on slippery runway
    - 15 % on wet runway

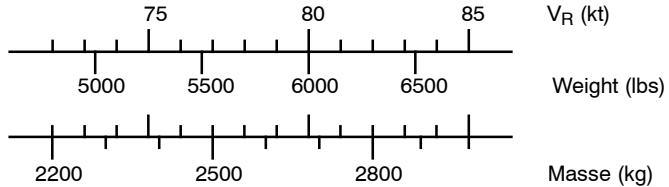
**NOTE :**

Between ISA + 30°C and ISA + 37°C, it may be necessary to cut-off the Bleed in order to set TRQ = 100 % during takeoff while respecting the engine limitations. In this case, reduce power after takeoff to set the Bleed ON.

TAKEOFF DISTANCES

**WEIGHT : 6579 lbs (2984 kg)**

- Associated conditions :
- Landing gear DN and flaps TO
  - 15° of attitude - TRQ = 100 %
  - Np = 2000 RPM - BLEED LO
  - Hard, dry and level runway
  - GR = Ground roll (in ft)
  - D<sub>50</sub> = Takeoff distance (clear to 50 ft) (in ft)
  - 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	1083	1673	1214	1870	1280	2001	1378	2133
2000	1214	1870	1345	2067	1444	2198	1542	2362
4000	1345	2067	1509	2297	1640	2461	1739	2625
6000	1509	2297	1706	2559	1837	2723	1968	2920
8000	1706	2559	1903	2854	2067	3051	2231	3281
PRESSURE ALTITUDE ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1476	2264	1575	2395	1690	2559	1755	2657
2000	1673	2493	1772	2657	1903	2854	1969	2953
4000	1870	2789	2001	2953	2149	3182	2231	3314
6000	2100	3117	2297	3346	2461	3609	2543	3740
8000	2428	3543	2657	3839	2854	4134	2969	4298

Figure 5.8.2 - TAKEOFF DISTANCES - 6579 lbs (2984 kg)

- Corrections :
- . Reduce total distances of 10 % every 10 kts of headwind
  - . Increase total distances of 30 % every 10 kts of tail-wind
  - . Increase by :
 

7 %	on hard grass	25 %	on high grass
10 %	on short grass	30 %	on slippery runway
15 %	on wet runway		

NOTE :

Between ISA + 30°C and ISA + 37°C, it may be necessary to cut-off the Bleed in order to set TRQ = 100 % during takeoff while respecting the engine limitations. In this case, reduce power after takeoff to set the Bleed ON.

## 5.9 - CLIMB PERFORMANCE

### CLIMB SPEEDS (IAS = 130 KIAS)

Conditions : Maximum climb power  
Landing gear and flaps UP  
IAS = 130 KIAS - BLEED LO

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
4850 lbs (2200 kg)	SL	3060	2920	2800	2690	2590	2480
	2000	3030	2890	2770	2660	2550	2455
	4000	3000	2860	2740	2630	2520	2415
	6000	2970	2830	2700	2590	2480	2380
	8000	2930	2800	2660	2550	2440	2340
5512 lbs (2500 kg)	SL	2600	2485	2380	2285	2190	2105
	2000	2570	2455	2350	2250	2160	2080
	4000	2540	2425	2320	2220	2130	2045
	6000	2510	2395	2290	2185	2090	2010
	8000	2480	2350	2250	2150	2035	1975
6579 lbs (2984 kg)	SL	2050	1955	1875	1795	1720	1640
	2000	2025	1925	1840	1765	1690	1620
	4000	1995	1900	1815	1735	1660	1585
	6000	1970	1870	1780	1700	1625	1555
	8000	1935	1840	1745	1665	1590	1520

Figure 5.9.1 - CLIMB SPEEDS (IAS = 130 KIAS)

### CLIMB PERFORMANCE

#### CLIMB SPEEDS (IAS = 160 KIAS)

Conditions : Maximum climb power  
 Landing gear and flaps UP  
 IAS = 160 KIAS - BLEED LO

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
4850 lbs (2200 kg)	SL	2680	2560	2440	2330	2220	2120
	2000	2640	2500	2390	2280	2180	2080
	4000	2590	2460	2340	2230	2130	2030
	6000	2550	2420	2290	2180	2080	1980
	8000	2500	2360	2240	2130	2030	1925
5512 lbs (2500 kg)	SL	2290	2180	2000	1980	1890	1805
	2000	2250	2135	2030	1940	1850	1765
	4000	2200	2090	1990	1895	1805	1725
	6000	2150	2050	1945	1845	1760	1680
	8000	2110	2000	1895	1795	1730	1625
6579 lbs (2984 kg)	SL	1820	1730	1650	1570	1490	1415
	2000	1780	1690	1600	1530	1460	1380
	4000	1740	1650	1560	1490	1410	1345
	6000	1700	1610	1520	1450	1370	1305
	8000	1660	1570	1480	1400	1330	1255

Figure 5.9.2 - CLIMB SPEEDS (IAS = 160 KIAS)



## CLIMB PERFORMANCE

### TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : **ISA - 20°C**  
 Maximum climb power  
 Landing gear and flaps UP  
 IAS = 130 KIAS - 2000 RPM - BLEED LO

**NOTE :**

*Time, consumption and distance from the 50 ft*

Pressure altitude (feet)	WEIGHT 4850 lbs (2200 kg)					WEIGHT 5512 lbs (2500 kg)					WEIGHT 6579 lbs (2984 kg)				
	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	
SL	00.00	0	0	0	0	00.00	0	0	0	0	00.00	0	0	0	0
2000	00.45	4	3	1.1	1	00.45	4	3	1.1	2	01.00	5	4	1.3	2
4000	01.30	6	5	1.6	3	01.30	8	6	2.1	3	02.00	10	8	2.6	4
6000	02.00	10	7	2.6	4	02.15	11	9	2.9	5	03.00	14	11	3.7	6
8000	02.45	12	10	3.2	6	03.00	15	12	4.0	7	04.00	19	15	5	9
10000	03.15	15	12	4.0	7	04.00	18	14	4.8	9	05.00	23	18	6	11
12000	04.00	18	14	4.8	9	04.45	21	17	5.5	11	06.00	27	22	7.1	14
14000	04.45	21	17	5.5	11	05.30	25	19	6.6	13	07.15	32	25	8.5	16
16000	05.30	24	19	6.3	13	06.30	28	22	7.4	15	08.15	36	28	9.5	19
18000	06.00	27	21	7.1	15	07.15	31	25	8.2	17	09.30	40	32	10.6	22
20000	07.00	29	23	7.7	17	08.00	35	27	9.2	20	10.30	44	35	11.6	25
22000	07.45	32	25	8.5	19	09.00	38	30	10.0	22	11.45	49	38	12.9	29
24000	08.30	35	27	9.3	21	10.00	41	32	10.8	25	13.00	53	42	14	32
26000	09.15	37	29	9.8	23	11.00	44	35	11.6	28	14.00	57	45	15.1	36
28000	10.00	40	32	10.6	26	12.00	48	37	12.7	31	15.30	62	49	16.4	40
30000	11.00	43	34	11.4	28	13.00	51	40	13.5	34	16.45	67	52	17.7	45

Figure 5.9.3 - TIME, CONSUMPTION AND CLIMB DISTANCE  
(IAS = 130 KIAS) / ISA - 20°C

**CLIMB PERFORMANCE**

**TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)**

Conditions : **ISA**  
 Maximum climb power  
 Landing gear and flaps UP  
 IAS = 130 KIAS - 2000 RPM - BLEED LO

**NOTE :**  
*Time, consumption and distance from the 50 ft*

Pressure altitude (feet)	WEIGHT 4850 lbs (2200 kg)					WEIGHT 5512 lbs (2500 kg)					WEIGHT 6579 lbs (2984 kg)				
	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	
SL	00.00	0	0	0	0	00.00	0	0	0	0	00.00	0	0	0	0
2000	00.45	4	3	1.1	2	00.45	4	3	1.1	2	01.00	5	4	1.3	2
4000	01.30	7	6	1.8	3	01.45	8	7	2.1	4	02.15	11	9	2.9	5
6000	02.15	11	8	2.9	5	02.30	12	10	3.2	6	03.15	16	13	4.2	7
8000	03.00	14	11	3.7	7	03.30	16	13	4.2	8	04.30	21	17	5.5	10
10000	03.45	17	14	4.5	8	04.15	20	16	5.3	10	05.30	26	20	6.9	13
12000	04.30	20	16	5.3	10	05.15	24	19	6.3	12	06.45	31	24	8.2	16
14000	05.00	24	19	6.3	12	06.15	28	22	7.4	15	08.00	36	28	9.5	19
16000	06.00	27	21	7.1	14	07.00	32	25	8.5	17	09.00	41	32	10.8	22
18000	06.45	30	23	7.9	17	08.00	35	28	9.2	20	10.30	46	36	12.2	26
20000	07.30	33	26	8.7	19	09.00	39	31	10.3	23	11.45	50	40	13.2	29
22000	08.30	36	28	9.5	21	10.00	43	34	11.4	26	13.00	55	43	14.5	33
24000	09.15	39	31	10.3	24	11.00	47	37	12.4	29	14.30	60	47	15.9	38
26000	10.15	43	33	11.4	27	12.15	51	40	13.5	33	16.00	66	52	17.4	43
28000	11.30	46	36	12.1	31	13.45	55	43	14.5	37	18.00	72	57	19	49
30000	12.45	50	39	13.2	36	15.30	60	47	15.9	43	20.30	79	62	20.9	58

Figure 5.9.4 - TIME, CONSUMPTION AND CLIMB DISTANCE  
(IAS = 130 KIAS) / ISA

## CLIMB PERFORMANCE

### TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : **ISA + 20°C**  
 Maximum climb power  
 Landing gear and flaps UP  
 IAS = 130 KIAS - 2000 RPM - BLEED LO

**NOTE :**

*Time, consumption and distance from the 50 ft*

Pressure altitude (feet)	WEIGHT 4850 lbs (2200 kg)					WEIGHT 5512 lbs (2500 kg)					WEIGHT 6579 lbs (2984 kg)				
	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	
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	2	01.00	5	4	1.3	2	01.15	6	5	1.6	3
4000	01.30	8	6	2.1	4	01.45	9	7	2.4	4	02.15	12	10	3.2	5
6000	02.15	12	9	3.2	5	02.45	14	11	3.7	6	03.30	18	14	4.8	8
8000	03.00	16	12	4.2	7	03.45	18	14	4.8	9	04.45	24	19	6.3	11
10000	04.00	19	15	5.0	9	04.45	23	18	6.1	11	06.00	29	23	7.7	15
12000	05.00	23	18	6.1	12	05.45	27	21	7.1	14	07.30	35	27	9.2	18
14000	05.45	26	21	6.9	14	06.45	31	24	8.2	17	08.45	40	32	10.6	22
16000	06.30	30	23	7.9	16	07.45	35	28	9.2	19	10.00	46	36	12.2	25
18000	07.30	34	26	9.0	19	08.45	40	31	10.6	23	11.30	52	40	13.7	30
20000	08.30	37	29	9.8	22	10.00	44	35	11.6	27	13.15	58	45	15.3	35
22000	09.45	41	32	10.8	26	11.30	49	39	12.9	31	15.15	64	50	16.9	41
24000	11.00	45	36	11.9	30	13.00	54	43	14.3	36	17.30	72	56	19	48
26000	12.30	50	39	13.2	35	15.00	60	47	15.9	43	20.30	80	63	21.1	58
28000	14.30	55	43	14.5	42	17.30	67	52	17.7	51	24.30	91	72	24	72
30000	17.00	62	48	16.4	51	21.00	75	59	19.8	63	30.30	107	84	28.3	94

Figure 5.9.5 - TIME, CONSUMPTION AND CLIMB DISTANCE  
(IAS = 130 KIAS) / ISA + 20°C

**CLIMB PERFORMANCE**

**TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)**

Conditions : **ISA - 20°C**

Maximum climb power

Landing gear and flaps UP

IAS = 160 KIAS up to 20000 ft ; - 4 KIAS / 2000 ft then

2000 RPM - BLEED LO

**NOTE :**

*Time, consumption and distance from the 50 ft*

Pressure altitude (feet)	WEIGHT 4850 lbs (2200 kg)					WEIGHT 5512 lbs (2500 kg)					WEIGHT 6579 lbs (2984 kg)				
	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	
SL	00.00	0	0	0	0	00.00	0	0	0	0	00.00	0	0	0	0
2000	00.45	4	3	1.1	2	01.00	4	3	1.1	2	01.00	6	4	1.6	3
4000	01.30	7	5	1.8	4	01.45	9	7	2.4	5	02.15	11	9	2.9	6
6000	02.15	11	9	2.9	6	02.45	13	10	3.4	7	03.30	16	13	4.2	9
8000	03.00	14	11	3.7	8	03.30	17	13	4.5	10	04.30	21	17	5.5	12
10000	04.00	18	14	4.8	11	04.30	21	16	5.5	13	05.45	27	21	7.1	16
12000	04.45	21	17	5.5	13	05.30	25	20	6.6	15	07.00	32	25	8.5	20
14000	05.30	25	19	6.6	16	06.30	29	23	7.7	19	08.15	37	29	9.8	24
16000	06.30	28	22	7.4	18	07.30	33	26	8.7	22	09.30	42	33	11.1	28
18000	07.15	31	25	8.2	21	08.30	37	29	9.8	25	11.00	47	37	12.4	32
20000	08.15	35	27	9.2	24	09.45	41	32	10.8	29	12.30	52	41	13.7	37
22000	09.00	38	30	10.0	28	10.45	45	35	11.9	33	13.45	58	45	15.3	42
24000	10.00	41	32	10.8	31	12.00	49	39	12.9	37	15.15	63	49	16.6	47
26000	11.00	45	35	11.9	34	13.00	53	41	14.0	41	16.45	68	53	18	53
28000	12.00	48	37	12.7	37	14.00	56	44	14.8	44	18.15	73	57	19.3	58
30000	13.00	51	40	13.5	41	15.00	60	47	15.9	48	19.45	78	61	20.6	63

Figure 5.9.6 - TIME, CONSUMPTION AND CLIMB DISTANCE  
(IAS = 160 KIAS) / ISA - 20°C

## CLIMB PERFORMANCE

### TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : **ISA**

Maximum climb power

Landing gear and flaps UP

IAS = 160 KIAS up to 20000 ft ; - 4 KIAS / 2000 ft then

2000 RPM - BLEED LO

**NOTE :**

*Time, consumption and distance from the 50 ft*

Pressure altitude (feet)	WEIGHT 4850 lbs (2200 kg)					WEIGHT 5512 lbs (2500 kg)					WEIGHT 6579 lbs (2984 kg)				
	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	
SL	00.00	0	0	0	0	00.00	0	0	0	0	00.00	0	0	0	0
2000	00.45	4	3	1.1	2	01.00	5	4	1.3	3	01.15	6	5	1.6	3
4000	01.30	8	6	2.1	4	02.00	10	8	2.6	5	02.30	12	10	3.2	7
6000	02.30	12	10	3.2	7	03.00	14	11	3.7	8	03.45	18	15	4.8	10
8000	03.30	16	13	4.2	10	04.00	19	15	5.0	11	05.00	24	19	6.3	14
10000	04.30	20	16	5.3	12	05.00	24	19	6.3	14	06.30	30	24	7.9	18
12000	05.15	24	19	6.3	15	06.00	28	22	7.4	18	08.00	36	28	9.5	23
14000	06.15	28	22	7.4	18	07.15	33	26	8.7	21	09.15	42	33	11.1	28
16000	07.15	32	25	8.5	21	08.30	37	29	9.8	25	10.45	48	38	12.7	33
18000	08.15	36	28	9.5	25	09.45	42	33	11.1	29	12.30	54	42	14.3	38
20000	09.15	40	31	10.6	29	11.00	47	37	12.4	34	14.00	60	47	15.9	44
22000	10.15	44	34	11.6	32	12.00	52	41	13.7	39	15.45	67	52	17.7	50
24000	11.15	47	37	12.4	36	13.30	56	44	14.8	44	17.30	73	57	19.3	56
26000	12.30	51	40	13.5	41	15.00	62	49	16.4	50	19.30	79	62	20.9	64
28000	14.00	56	44	14.8	46	16.30	66	52	17.4	55	21.45	87	68	23.0	72
30000	15.30	60	47	15.8	52	18.30	72	57	19.0	62	24.30	95	75	25.1	83

Figure 5.9.7 - TIME, CONSUMPTION AND CLIMB DISTANCE  
(IAS = 160 KIAS) / ISA

**CLIMB PERFORMANCE**

**TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)**

Conditions : **ISA + 20°C**

Maximum climb power

Landing gear and flaps UP

IAS = 160 KIAS up to 20000 ft ; - 4 KIAS / 2000 ft then

2000 RPM - BLEED LO

**NOTE :**

*Time, consumption and distance from the 50 ft*

Pressure altitude (feet)	WEIGHT 4850 lbs (2200 kg)					WEIGHT 5512 lbs (2500 kg)					WEIGHT 6579 lbs (2984 kg)				
	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	
SL	00.00	0	0	0	0	00.00	0	0	0	0	00.00	0	0	0	0
2000	01.00	5	4	1.3	3	01.00	5	4	1.3	3	01.15	7	6	1.8	4
4000	01.45	9	7	2.4	5	02.15	11	8	2.9	6	02.45	14	11	3.7	8
6000	02.45	14	11	3.7	8	03.15	16	13	4.2	9	04.15	21	16	5.5	12
8000	03.45	18	14	4.8	11	04.30	21	17	5.5	13	05.30	28	22	7.4	16
10000	04.45	23	18	6.1	14	05.30	27	21	7.1	17	07.15	34	27	9.0	21
12000	05.45	27	21	7.1	17	06.45	32	25	8.5	21	08.45	41	32	10.8	26
14000	06.45	32	25	8.5	21	08.00	37	29	9.8	25	10.15	48	38	12.7	32
16000	08.00	36	28	9.5	25	09.30	43	33	11.4	29	12.00	55	43	14.5	38
18000	09.00	41	32	10.8	29	11.00	48	38	12.7	35	14.00	62	49	16.4	45
20000	10.30	46	36	12.2	34	12.30	55	43	14.5	41	16.15	71	56	18.8	53
22000	12.15	52	41	13.7	41	14.30	62	49	16.4	49	19.15	81	63	21.4	64
24000	14.15	58	45	15.3	48	17.00	69	54	18.2	58	22.45	92	72	24.3	78
26000	16.30	65	51	17.2	57	20.00	78	61	20.6	69	27.30	106	83	28.0	96
28000	19.15	72	56	19.0	68	23.45	88	69	23.2	84	34.00	124	98	32.8	123
30000	23.00	82	64	21.7	83	29.00	102	80	26.9	105	46.00	155	121	41.0	170

Figure 5.9.8 - TIME, CONSUMPTION AND CLIMB DISTANCE  
(IAS = 160 KIAS) / ISA + 20°C

## CLIMB PERFORMANCE

### CLIMB PERFORMANCE AFTER GO-AROUND

Conditions : Maximum climb power  
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
4850 lbs (2200 kg)	SL	2270	2100	2000	1910	1820	1740	1650
	2000	2240	2070	1960	1870	1780	1695	1620
	4000	2200	2030	1920	1830	1730	1650	1570
	6000	2160	1980	1880	1780	1690	1600	1520
	8000	2120	1940	1830	1730	1630	1545	1465
5512 lbs (2500 kg)	SL	1900	1750	1660	1580	1500	1435	1355
	2000	1860	1720	1630	1550	1470	1395	1330
	4000	1820	1680	1590	1500	1430	1350	1285
	6000	1790	1630	1550	1460	1380	1305	1235
	8000	1750	1590	1500	1410	1330	1255	1185
6579 lbs (2984 kg)	SL	1410	1300	1230	1165	1105	1045	985
	2000	1380	1265	1195	1130	1065	1010	955
	4000	1345	1230	1155	1090	1025	970	915
	6000	1310	1190	1115	1050	985	925	870
	8000	1270	1145	1070	1000	940	880	825

Figure 5.9.9 - CLIMB PERFORMANCE AFTER GO-AROUND

**CLIMB PERFORMANCE**

**CLIMB PERFORMANCE - FLAPS TO**

Conditions : Climb maximum power  
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
4850 lbs (2200 kg)	SL	3170	2970	2850	2730	2620	2520	2410
	2000	3160	2950	2820	2700	2600	2490	2395
	4000	3140	2920	2800	2670	2570	2460	2365
	6000	3110	2900	2760	2650	2540	2430	2330
	8000	3080	2870	2740	2610	2500	2395	2295
5512 lbs (2500 kg)	SL	2710	2540	2430	2330	2230	2145	2050
	2000	2700	2520	2400	2300	2200	2120	2035
	4000	2680	2490	2380	2270	2180	2090	2005
	6000	2650	2460	2350	2250	2150	2060	1975
	8000	2620	2440	2320	2220	2120	2030	1940
6579 lbs (2984 kg)	SL	2140	2000	1910	1830	1750	1680	1600
	2000	2120	1975	1880	1800	1720	1650	1585
	4000	2100	1950	1860	1775	1700	1620	1555
	6000	2075	1925	1830	1750	1670	1595	1525
	8000	2050	1895	1805	1720	1640	1565	1495

Figure 5.9.10 - CLIMB PERFORMANCE - FLAPS TO



## 5.10 - CRUISE PERFORMANCE

Conditions : ISA  
Weight 5512 lbs (2500 kg)

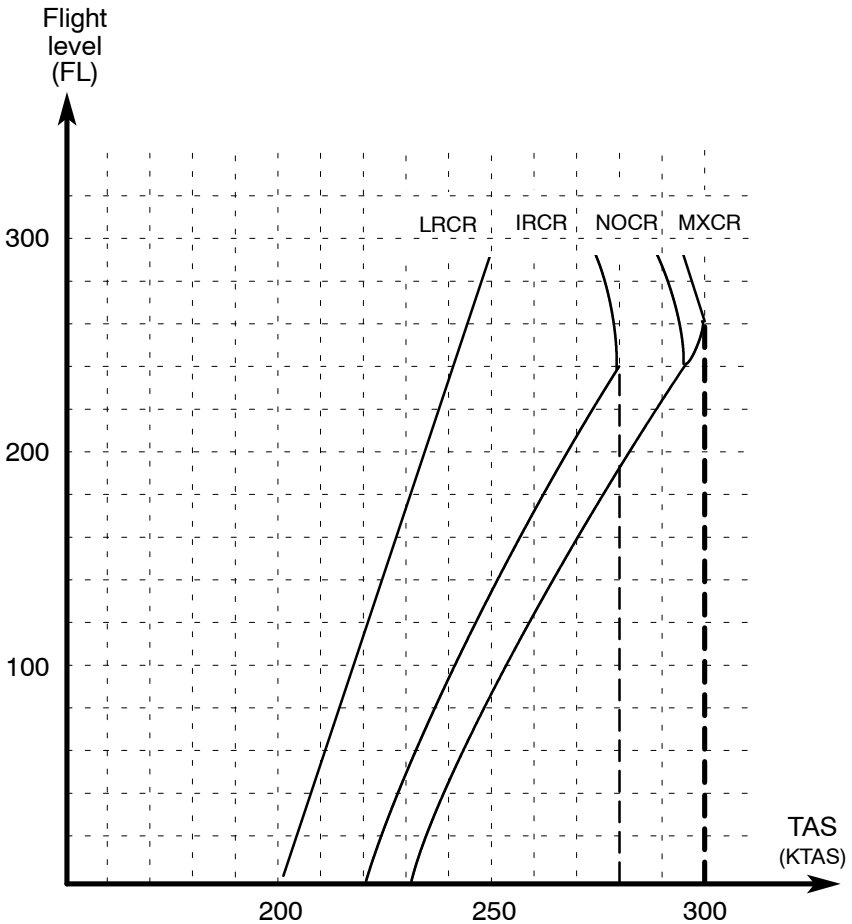


Figure 5.10.1 - CRUISE PERFORMANCE

**CRUISE PERFORMANCE**

**Maximum cruise**

Conditions : **ISA - 20°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**  
*Use preferably recommended cruise power*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	- 4	100	304	239	80.3	231	226	230	225	229	224
5000	- 14	100	275	216	72.6	226	237	225	236	223	235
10000	- 24	100	250	196	66.0	221	249	220	248	218	246
15000	- 34	100	232	182	61.2	216	263	214	261	213	259
18000	- 40	100	223	175	58.9	213	271	211	269	210	267
20000	- 44	100	218	171	57.6	211	277	209	275	208	273
21000	- 46	100	216	170	57.1	210	280	208	278	207	276
22000	- 48	100	214	168	56.5	209	283	207	281	206	279
23000	- 50	100	212	166	56.0	208	286	206	284	205	282
24000	- 52	100	210	165	55.6	207	290	205	287	203	285
25000	- 54	100	209	164	55.3	206	293	204	291	202	288
26000	- 56	100	208	163	54.9	205	296	203	294	201	291
27000	- 58	100	207	162	54.7	204	300	202	297	200	294
28000	- 60	100	206	162	54.4	203	303	201	301	199	298
29000	- 62	100	206	161	54.3	202	307	200	304	198	301
30000	- 64	100	205	161	54.2	201	310	199	308	197	305

Figure 5.10.2 - CRUISE PERFORMANCE -  
Maximum cruise / ISA - 20°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### Maximum cruise

Conditions : **ISA - 10°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**  
*Use preferably recommended cruise power*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 6	100	308	242	81.4	229	228	228	227	227	226
5000	- 4	100	279	219	73.6	224	240	223	238	222	237
10000	- 14	100	254	199	67.0	219	252	218	251	216	249
15000	- 24	100	234	184	61.9	214	266	213	264	211	262
18000	- 30	100	225	177	59.4	211	274	209	272	208	270
20000	- 34	100	220	173	58.2	209	281	207	278	206	276
21000	- 36	100	218	171	57.6	208	284	206	281	205	279
22000	- 38	100	216	170	57.1	207	287	205	285	204	282
23000	- 40	100	215	168	56.7	206	290	204	288	202	285
24000	- 42	100	213	167	56.3	205	293	203	291	201	288
25000	- 44	100	212	166	55.9	204	297	202	294	200	291
26000	- 46	100	210	165	55.6	203	300	201	298	199	295
27000	- 48	100	209	164	55.3	202	304	200	301	198	298
28000	- 50	100	209	164	55.2	201	307	199	305	197	302
29000	- 52	97	201	158	53.2	197	307	195	303	193	300
30000	- 54	93	194	152	51.2	193	306	190	301	188	298

Figure 5.10.3 - CRUISE PERFORMANCE -  
Maximum cruise / ISA - 10°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### *Maximum cruise*

Conditions : **ISA - 5°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

*Use preferably recommended cruise power*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 11	100	310	243	81.8	228	230	227	229	226	228
5000	+ 1	100	280	220	74.1	223	241	222	240	221	238
10000	- 9	100	255	200	67.4	218	254	217	252	216	250
15000	- 19	100	235	185	62.2	213	267	212	265	210	263
18000	- 25	100	226	178	59.8	210	276	208	274	207	272
20000	- 29	100	222	174	58.6	208	282	206	280	205	278
21000	- 31	100	220	173	58.1	207	285	205	283	204	281
22000	- 33	100	218	171	57.5	206	289	204	286	203	284
23000	- 35	100	216	170	57.1	205	292	203	289	202	287
24000	- 37	100	215	168	56.7	204	295	202	293	200	290
25000	- 39	100	213	167	56.3	203	298	201	296	199	293
26000	- 41	100	212	166	56.0	202	302	200	299	198	296
27000	- 43	99	210	165	55.5	200	304	198	301	196	299
28000	- 45	96	202	159	53.5	197	304	194	301	193	298
29000	- 47	92	195	153	51.5	193	303	190	300	188	296
30000	- 49	88	188	147	49.6	188	302	186	298	183	294

**Figure 5.10.4 - CRUISE PERFORMANCE -  
Maximum cruise / ISA - 5°C**

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### Maximum cruise

Conditions : **ISA**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**  
*Use preferably recommended cruise power*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 16	100	312	245	82.3	228	231	227	230	226	229
5000	+ 6	100	282	221	74.5	223	243	221	241	220	240
10000	- 4	100	257	201	67.8	217	255	216	253	215	252
15000	- 14	100	237	186	62.5	212	269	211	267	209	265
18000	- 20	100	228	179	60.2	209	278	208	275	206	273
20000	- 24	100	223	175	58.9	207	284	205	281	204	279
21000	- 26	100	221	174	58.5	206	287	204	285	203	282
22000	- 28	100	220	172	58.0	205	290	203	288	202	285
23000	- 30	100	218	171	57.5	204	293	202	291	201	289
24000	- 32	100	216	170	57.1	203	297	201	294	199	292
25000	- 34	100	215	169	56.8	202	300	200	298	198	295
26000	- 36	99	209	164	55.2	200	303	198	300	197	298
27000	- 38	95	202	159	53.5	196	302	194	298	193	297
28000	- 40	91	195	153	51.6	192	301	189	297	188	295
29000	- 42	88	188	148	49.8	188	299	186	296	184	293
30000	- 44	84	181	142	47.9	184	298	182	294	178	288

Figure 5.10.5 - CRUISE PERFORMANCE -  
Maximum cruise / ISA

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

**Maximum cruise**

Conditions : **ISA + 5°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**  
*Use preferably recommended cruise power*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 21	100	313	246	82.8	227	232	226	231	225	230
5000	+ 11	100	283	223	74.9	222	244	221	243	219	241
10000	+ 1	100	258	202	68.1	217	256	215	255	214	253
15000	- 9	100	238	187	62.9	211	270	210	268	208	267
18000	- 15	100	229	180	60.6	208	279	207	277	205	275
20000	- 19	100	224	176	59.3	206	285	204	283	203	281
21000	- 21	100	223	175	58.9	205	288	203	286	202	284
22000	- 23	100	221	174	58.5	204	291	202	289	201	287
23000	- 25	100	220	172	58.0	203	295	201	292	200	290
24000	- 27	100	218	172	57.7	202	298	200	296	198	293
25000	- 29	97	211	166	55.9	199	299	197	296	195	294
26000	- 31	94	204	161	54.0	196	299	193	296	192	293
27000	- 33	90	197	155	52.0	192	298	189	294	188	292
28000	- 35	87	190	149	50.1	188	297	185	293	183	290
29000	- 37	83	182	143	48.2	183	296	181	292	178	287
30000	- 39	80	176	138	46.4	179	294	177	290	173	284

Figure 5.10.6 - CRUISE PERFORMANCE -  
Maximum cruise / ISA + 5°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### Maximum cruise

Conditions : **ISA + 10°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 26	100	315	247	83.2	226	233	225	233	224	231
5000	+ 16	100	285	224	75.4	221	245	220	244	219	242
10000	+ 6	100	259	203	68.4	216	258	214	256	213	255
15000	- 4	100	240	188	63.3	211	272	209	270	208	268
18000	- 10	100	231	181	60.9	208	281	206	278	204	277
20000	- 14	100	226	177	59.7	206	287	203	284	202	283
21000	- 16	100	224	176	59.2	205	291	202	287	201	286
22000	- 18	100	223	175	58.9	203	294	201	291	200	289
23000	- 20	98	218	171	57.6	201	295	200	294	197	290
24000	- 22	96	211	166	55.7	198	296	196	293	194	290
25000	- 24	92	204	160	53.9	195	296	192	292	191	290
26000	- 26	89	197	155	52.0	191	296	188	291	186	288
27000	- 28	86	190	150	50.3	187	295	185	290	182	287
28000	- 30	82	184	144	48.5	184	294	181	289	178	285
29000	- 32	79	176	139	46.6	179	292	176	287	173	282
30000	- 34	75	170	133	44.9	175	290	172	285	168	279

**NOTE :**

Use preferably recommended cruise power

Figure 5.10.7 - CRUISE PERFORMANCE -  
Maximum cruise / ISA + 10°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

**Maximum cruise**

Conditions : **ISA + 20°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**  
*Use preferably recommended cruise power*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 36	100	319	250	84.3	225	236	224	235	223	233
5000	+ 26	100	289	227	76.3	220	248	218	246	217	245
10000	+ 16	100	262	206	69.3	214	261	213	259	211	257
15000	+ 6	100	243	190	64.1	209	275	207	273	206	270
18000	0	100	234	183	61.7	206	284	204	281	202	279
20000	- 4	97	225	177	59.4	202	288	201	287	199	284
21000	- 6	94	218	171	57.5	198	288	198	286	196	283
22000	- 8	92	211	166	55.7	196	288	193	285	191	282
23000	- 10	88	204	160	53.9	195	292	190	284	188	281
24000	- 12	86	197	155	52.0	188	287	185	283	184	280
25000	- 14	82	190	149	50.2	185	286	182	282	179	278
26000	- 16	79	183	144	48.3	181	285	178	281	175	276
27000	- 18	76	176	139	46.6	176	283	174	279	170	274
28000	- 20	72	170	133	44.8	172	281	169	276	166	272
29000	- 22	69	163	128	43.1	168	280	164	274	161	268
30000	- 24	66	156	122	41.2	164	278	160	272	156	265

**Figure 5.10.8 - CRUISE PERFORMANCE -  
Maximum cruise / ISA + 20°C**

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).



## CRUISE PERFORMANCE

### **Normal (recommended) cruise**

Conditions : **ISA - 20°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

Power recommended by PRATT & WHITNEY CANADA

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	- 4	100	304	239	80.3	231	226	230	225	229	224
5000	- 14	100	275	216	72.6	226	237	225	236	223	235
10000	- 24	100	250	196	66.0	221	249	220	248	218	246
15000	- 34	100	232	182	61.2	216	263	214	261	213	259
18000	- 40	100	223	175	58.9	213	271	211	269	210	267
20000	- 44	100	218	171	57.6	211	277	209	275	208	273
21000	- 46	100	216	170	57.1	210	280	208	278	207	276
22000	- 48	100	214	168	56.5	209	283	207	281	206	279
23000	- 50	100	212	166	56.0	208	286	206	284	205	282
24000	- 52	100	210	165	55.6	207	290	205	287	203	285
25000	- 54	100	209	164	55.3	206	293	204	291	202	288
26000	- 56	100	208	163	54.9	205	296	203	294	201	291
27000	- 58	100	207	162	54.7	204	300	202	297	200	294
28000	- 60	100	206	162	54.4	203	303	201	301	199	298
29000	- 62	100	206	161	54.3	202	307	200	304	198	301
30000	- 64	100	205	161	54.2	201	310	199	308	197	305

Figure 5.10.9 - CRUISE PERFORMANCE -  
Normal cruise / ISA - 20°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

***Normal (recommended) cruise***

Conditions : **ISA - 10°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

*Power recommended by PRATT & WHITNEY CANADA*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 6	100	308	242	81.4	229	228	228	227	227	226
5000	- 4	100	279	219	73.6	224	240	223	238	222	237
10000	- 14	100	254	199	67.0	219	252	218	251	216	249
15000	- 24	100	234	184	61.9	214	266	213	264	211	262
18000	- 30	100	225	177	59.4	211	274	209	272	208	270
20000	- 34	100	220	173	58.2	209	281	207	278	206	276
21000	- 36	100	218	171	57.6	208	284	206	281	205	279
22000	- 38	100	216	170	57.1	207	287	205	285	204	282
23000	- 40	100	215	168	56.7	206	290	204	288	202	285
24000	- 42	100	213	167	56.3	205	293	203	291	201	288
25000	- 44	100	212	166	55.9	204	297	202	294	200	291
26000	- 46	100	210	165	55.6	203	300	201	298	199	295
27000	- 48	99	207	162	54.7	201	302	199	299	196	296
28000	- 50	96	199	157	52.7	197	302	195	298	192	294
29000	- 52	92	193	151	50.9	193	300	191	297	188	293
30000	- 54	88	185	145	48.9	188	298	186	295	184	291

Figure 5.10.10 - CRUISE PERFORMANCE -  
Normal cruise / ISA - 10°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### **Normal (recommended) cruise**

Conditions : **ISA - 5°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

Power recommended by PRATT & WHITNEY CANADA

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			I/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 11	100	310	243	81.8	228	230	227	229	226	228
5000	+ 1	100	280	220	74.1	223	241	222	240	221	238
10000	- 9	100	255	200	67.4	218	254	217	252	216	250
15000	- 19	100	235	185	62.2	213	267	212	265	210	263
18000	- 25	100	226	178	59.8	210	276	208	274	207	272
20000	- 29	100	222	174	58.6	208	282	206	280	205	278
21000	- 31	100	220	173	58.1	207	285	205	283	204	281
22000	- 33	100	218	171	57.5	206	289	204	286	203	284
23000	- 35	100	216	170	57.1	205	292	203	289	202	287
24000	- 37	100	215	168	56.7	204	295	202	293	200	290
25000	- 39	100	213	167	56.3	203	298	201	296	199	293
26000	- 41	98	208	163	54.9	200	299	198	295	196	293
27000	- 43	95	201	158	53.1	196	298	194	296	192	292
28000	- 45	91	195	153	51.4	193	298	190	295	187	290
29000	- 47	87	188	147	49.6	188	297	186	293	183	288
30000	- 49	83	181	142	47.7	184	295	182	291	179	287

Figure 5.10.11 - CRUISE PERFORMANCE -  
Normal cruise / ISA - 5°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

***Normal (recommended) cruise***

Conditions : **ISA**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

*Power recommended by PRATT & WHITNEY CANADA*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 16	100	312	245	82.3	228	231	227	230	226	229
5000	+ 6	100	282	221	74.5	223	243	221	241	220	240
10000	- 4	100	257	201	67.8	217	255	216	253	215	252
15000	- 14	100	237	186	62.5	212	269	211	267	209	265
18000	- 20	100	228	179	60.2	209	278	208	275	206	273
20000	- 24	100	223	175	58.9	207	284	205	281	204	279
21000	- 26	100	221	174	58.5	206	287	204	285	203	282
22000	- 28	100	220	172	58.0	205	290	203	288	202	285
23000	- 30	100	218	171	57.5	204	293	202	291	201	289
24000	- 32	100	216	170	57.1	203	297	201	294	199	292
25000	- 34	97	209	164	55.3	199	296	197	294	195	291
26000	- 36	94	203	159	53.6	195	295	194	293	191	290
27000	- 38	90	196	154	51.9	192	295	190	292	187	287
28000	- 40	86	190	149	50.1	188	294	186	291	183	286
29000	- 42	83	183	144	48.3	184	293	182	289	178	284
30000	- 44	78	176	138	46.5	180	291	177	287	174	282

Figure 5.10.12 - CRUISE PERFORMANCE -  
Normal cruise / ISA

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### **Normal (recommended) cruise**

Conditions : **ISA + 5°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

Power recommended by PRATT & WHITNEY CANADA

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 21	100	313	246	82.8	227	232	226	231	225	230
5000	+ 11	100	283	223	74.9	222	244	221	243	219	241
10000	+ 1	100	258	202	68.1	217	256	215	255	214	253
15000	- 9	100	238	187	62.9	211	270	210	268	208	267
18000	- 15	100	229	180	60.6	208	279	207	277	205	275
20000	- 19	100	224	176	59.3	206	286	204	283	203	281
21000	- 21	100	223	175	58.9	205	288	203	286	202	284
22000	- 23	100	221	174	58.5	204	291	202	289	201	287
23000	- 25	97	216	170	57.1	201	292	199	290	198	287
24000	- 27	95	209	164	55.1	198	292	196	290	194	287
25000	- 29	92	202	159	53.4	194	292	192	289	190	286
26000	- 31	89	195	153	51.5	190	291	189	289	186	285
27000	- 33	84	188	148	49.8	187	290	185	287	181	283
28000	- 35	81	182	143	48.0	183	290	180	286	177	281
29000	- 37	78	175	137	46.2	179	288	176	284	172	278
30000	- 39	74	171	134	45.2	174	286	171	281	168	276

Figure 5.10.13 - CRUISE PERFORMANCE -  
Normal cruise / ISA + 5°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

***Normal (recommended) cruise***

Conditions : **ISA + 10°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

*Power recommended by PRATT & WHITNEY CANADA*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 26	100	315	247	83.2	226	233	225	233	224	231
5000	+ 16	100	285	224	75.4	221	245	220	244	219	242
10000	+ 6	100	259	203	68.4	216	258	214	256	213	255
15000	- 4	100	240	188	63.3	211	272	209	270	208	268
18000	- 10	100	231	181	60.9	208	281	206	278	204	277
20000	- 14	100	226	177	59.7	206	287	203	284	202	283
21000	- 16	98	220	173	58.1	203	288	202	286	199	283
22000	- 18	96	214	168	56.5	200	289	198	286	196	284
23000	- 20	92	207	162	54.7	197	289	195	286	192	283
24000	- 22	90	200	157	52.8	193	289	191	286	188	282
25000	- 24	87	193	152	51.1	190	288	187	285	185	281
26000	- 26	83	187	147	49.4	185	287	184	284	181	279
27000	- 28	79	181	142	47.7	182	286	179	282	176	277
28000	- 30	76	174	137	46.0	178	285	175	280	172	275
29000	- 32	73	167	131	44.1	173	283	170	278	167	272
30000	- 34	69	166	130	43.9	169	280	166	276	162	269

Figure 5.10.14 - CRUISE PERFORMANCE -  
Normal cruise / ISA + 10°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### **Normal (recommended) cruise**

Conditions : **ISA + 20°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

**NOTE :**

Power recommended by PRATT & WHITNEY CANADA

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 36	100	319	250	84.3	225	236	224	235	223	233
5000	+ 26	100	289	227	76.3	219	248	218	246	217	245
10000	+ 16	100	262	206	69.3	214	261	213	259	211	257
15000	+ 6	100	243	190	64.1	209	275	207	273	206	270
18000	0	96	226	177	59.7	202	279	201	278	199	275
20000	- 4	90	213	167	56.3	196	280	194	277	193	275
21000	- 6	87	206	162	54.4	193	279	191	277	189	274
22000	- 8	84	200	157	52.8	189	279	187	276	185	274
23000	- 10	81	193	152	51.0	185	278	184	275	182	272
24000	- 12	78	187	146	49.3	181	276	180	274	178	271
25000	- 14	76	180	141	47.6	177	275	176	273	173	269
26000	- 16	72	173	136	45.8	173	273	172	271	169	267
27000	- 18	69	167	131	44.1	169	272	168	270	164	264
28000	- 20	66	160	126	42.3	164	269	163	268	159	261
29000	- 22	63	157	120	40.6	160	268	159	265	154	257
30000	- 24	60	147	115	38.8	156	265	154	262	149	254

Figure 5.10.15 - CRUISE PERFORMANCE -  
Normal cruise / ISA + 20°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### *Intermediate cruise*

Conditions : **ISA - 20°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	<sup>us</sup> gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	- 4	88	286	225	75.6	220	215	219	214	218	213
5000	- 14	88	257	202	68.0	215	226	213	222	212	221
10000	- 24	88	233	183	61.6	210	238	209	236	208	234
15000	- 34	88	214	168	56.5	206	250	204	248	202	246
18000	- 40	88	205	161	54.2	203	258	201	256	199	254
20000	- 44	88	200	157	52.8	201	264	199	262	197	259
21000	- 46	88	198	155	52.2	200	267	198	265	196	262
22000	- 48	88	195	153	51.6	199	270	197	268	195	265
23000	- 50	88	193	152	51.1	198	273	196	271	194	268
24000	- 52	88	192	151	50.7	197	276	195	274	193	271
25000	- 54	88	190	149	50.2	196	279	194	277	192	274
26000	- 56	88	188	148	49.7	195	283	193	280	191	277
27000	- 58	88	187	147	49.4	194	286	192	283	190	280
28000	- 60	88	186	146	49.1	193	289	191	286	189	283
29000	- 62	88	185	145	48.9	192	293	190	290	188	286
30000	- 64	87	183	144	48.3	190	294	188	292	185	287

Figure 5.10.16 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA - 20°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).



## CRUISE PERFORMANCE

### *Intermediate cruise*

Conditions : **ISA - 10°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	us gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 6	88	289	227	76.3	219	218	218	217	217	216
5000	- 4	88	261	205	68.9	214	229	212	226	210	224
10000	- 14	88	236	185	62.3	209	241	208	239	206	237
15000	- 24	88	217	170	57.2	204	254	203	252	201	250
18000	- 30	88	207	162	54.7	201	262	200	260	198	257
20000	- 34	88	202	159	53.4	199	268	198	265	196	263
21000	- 36	88	199	157	52.7	198	271	196	268	195	266
22000	- 38	88	198	155	52.2	197	274	196	271	193	268
23000	- 40	88	195	153	51.6	196	277	195	274	192	271
24000	- 42	88	194	152	51.2	195	280	193	277	191	274
25000	- 44	88	192	151	50.7	194	283	192	280	190	277
26000	- 46	88	190	150	50.3	192	285	191	283	188	279
27000	- 48	85	185	146	49.0	189	285	188	283	185	279
28000	- 50	82	179	141	47.3	186	285	184	281	182	278
29000	- 52	79	173	135	45.6	183	285	180	280	177	276
30000	- 54	76	166	130	43.9	179	283	176	279	173	274

Figure 5.10.17 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA - 10°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

***Intermediate cruise***

Conditions : **ISA - 5°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 11	88	290	228	76.7	218	219	217	218	216	217
5000	+ 1	88	262	206	69.3	213	230	211	227	210	225
10000	- 9	88	237	186	62.7	208	242	207	241	205	239
15000	- 19	88	218	171	57.5	203	255	202	253	200	251
18000	- 25	88	209	164	55.1	200	263	199	261	197	259
20000	- 29	88	203	160	53.7	198	269	197	267	195	264
21000	- 31	88	201	158	53.1	197	272	196	270	194	267
22000	- 33	88	199	156	52.5	196	275	195	273	193	270
23000	- 35	88	197	155	52.0	195	278	194	276	191	273
24000	- 37	88	195	153	51.5	194	281	193	279	190	276
25000	- 39	87.5	193	151	50.9	192	283	191	281	188	278
26000	- 41	84.7	187	146	49.3	189	283	187	281	185	277
27000	- 43	82	181	142	47.7	185	283	184	280	181	276
28000	- 45	79	174	137	46.0	182	282	180	279	177	274
29000	- 47	76	167	131	44.2	178	281	175	277	172	272
30000	- 49	73.3	161	126	42.5	174	280	171	275	168	270

Figure 5.10.18 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA - 5°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### *Intermediate cruise*

Conditions : **ISA**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 16	88	292	229	77.1	218	221	216	219	215	218
5000	+ 6	88	264	207	69.8	213	232	210	228	209	227
10000	- 4	88	239	188	63.1	208	243	206	242	205	240
15000	- 14	88	219	172	57.9	203	257	201	255	199	253
18000	- 20	88	210	165	55.5	199	265	198	263	196	260
20000	- 24	88	204	161	54.0	197	271	196	269	194	266
21000	- 26	88	202	159	53.5	196	273	195	272	193	269
22000	- 28	88	200	157	52.8	195	277	194	275	192	272
23000	- 30	88	198	156	52.4	194	280	193	278	191	275
24000	- 32	87.3	195	153	51.5	193	283	191	280	188	276
25000	- 34	84.3	188	148	49.8	189	282	188	279	185	275
26000	- 36	81.2	182	143	48.1	185	281	184	278	181	274
27000	- 38	78	176	138	46.4	182	280	180	277	177	272
28000	- 40	75	169	133	44.6	178	279	176	276	172	270
29000	- 42	72	162	128	42.9	174	277	171	273	168	268
30000	- 44	69	156	122	41.2	170	276	167	271	163	265

Figure 5.10.19 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

***Intermediate cruise***

Conditions : **ISA + 5°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 21	88	293	230	77.5	217	222	216	221	215	220
5000	+ 11	88	266	209	70.2	212	233	209	229	208	228
10000	+ 1	88	240	188	63.4	207	245	205	243	204	242
15000	- 9	88	220	173	58.2	202	258	200	256	199	254
18000	- 15	88	211	166	55.8	199	266	197	264	195	262
20000	- 19	88	206	162	54.4	196	272	195	270	193	268
21000	- 21	88	204	160	53.9	195	275	194	273	192	270
22000	- 23	88	201	158	53.1	194	278	193	276	190	272
23000	- 25	85.6	195	153	51.5	191	279	189	276	187	272
24000	- 27	82.7	189	148	49.9	188	279	186	276	183	272
25000	- 29	79.8	182	143	48.2	185	278	182	275	180	271
26000	- 31	76.9	176	139	46.6	181	277	179	274	175	269
27000	- 33	74	170	134	45.0	177	275	174	272	172	269
28000	- 35	71	164	129	43.3	173	274	170	270	166	264
29000	- 37	68.1	157	124	41.6	169	273	166	268	162	262
30000	- 39	65.2	151	119	39.9	165	271	161	266	158	260

Figure 5.10.20 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA + 5°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

## CRUISE PERFORMANCE

### *Intermediate cruise*

Conditions : **ISA + 10°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l/h	kg/h	<sup>us</sup> gal/h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 26	88	295	232	77.9	216	223	215	222	214	221
5000	+ 16	88	267	210	70.6	211	234	209	230	208	229
10000	+ 6	88	241	189	63.7	206	246	205	245	203	243
15000	- 4	88	221	174	58.5	201	259	199	258	198	255
18000	- 10	88	212	167	56.1	198	268	196	266	194	263
20000	- 14	88	207	162	54.6	196	274	194	272	192	269
21000	- 16	86.5	201	158	53.1	194	275	191	272	189	269
22000	- 18	84	195	153	51.5	190	275	188	272	186	269
23000	- 20	81	190	149	50.1	187	275	185	271	182	268
24000	- 22	78	183	144	48.3	184	275	181	271	178	267
25000	- 24	75.5	177	139	46.8	180	273	177	270	174	266
26000	- 26	73	171	134	45.2	176	272	174	269	170	263
27000	- 28	70	165	130	43.6	172	271	169	267	168	265
28000	- 30	67	159	124	41.9	168	269	165	265	161	258
29000	- 32	64	153	120	40.3	164	268	160	262	157	256
30000	- 34	61	146	115	38.6	160	266	156	260	153	255

Figure 5.10.21 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA + 10°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

***Intermediate cruise***

Conditions : **ISA + 20°C**  
Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						4850 lbs (2200 kg)		5512 lbs (2500 kg)		6173 lbs (2800 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 36	88	299	235	79.0	215	225	214	224	213	223
5000	+ 26	88	271	212	71.5	210	237	208	233	206	232
10000	+ 16	88	245	192	64.6	205	249	203	247	202	245
15000	+ 6	88	224	176	59.3	199	262	198	260	196	258
18000	0	84	209	164	55.2	192	266	190	263	189	261
20000	- 4	79	196	154	51.9	186	266	185	263	182	260
21000	- 6	76.4	190	150	50.3	183	266	181	263	179	259
22000	- 8	74	184	144	48.6	180	265	178	262	175	258
23000	- 10	71.2	178	140	47.0	176	264	174	262	171	257
24000	- 12	69	172	135	45.4	173	264	171	261	167	255
25000	- 14	66	165	130	43.7	169	262	166	259	162	253
26000	- 16	63.4	159	125	42.1	165	261	162	256	158	250
27000	- 18	60.7	154	120	40.6	160	258	157	254	153	247
28000	- 20	58	148	116	39.0	157	257	153	251	148	243
29000	- 22	55.5	141	111	37.2	152	254	148	248	142	238
30000	- 24	53	135	106	35.7	148	252	143	244	136	232

Figure 5.10.22 - CRUISE PERFORMANCE -  
Intermediate cruise / ISA + 20°C

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

### CRUISE PERFORMANCE

#### Long Range Cruise (5512 lbs - 2500 kg)

Conditions : Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

LEGEND :	OAT : °C	IAS : KIAS
	FF : us gal/h	
	FF : lbs/h	TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20° C		ISA - 10° C		ISA		ISA + 10° C		ISA + 20° C	
15000	60.5	- 34 46.4 304	176 214	- 24 47.0 309	174 216	- 14 47.6 311	172 219	- 4 48.2 315	171 221	+ 6 48.9 320	169 223
18000	59	- 40 43.2 282	171 218	- 30 43.7 287	169 221	- 20 44.4 291	168 223	- 10 45.0 295	166 226	0 45.7 300	165 228
19000	58.5	- 42 42.2 276	169 220	- 32 42.7 280	167 222	- 22 43.4 284	166 225	- 12 44.1 289	164 227	- 2 44.7 293	163 229
20000	58	- 44 41.2 269	168 222	- 34 41.7 273	166 224	- 24 42.4 278	164 226	- 14 43.1 282	163 228	- 4 43.7 287	161 231
21000	57.5	- 46 40.4 265	166 223	- 36 40.8 267	164 225	- 26 41.5 271	163 228	- 16 42.1 276	161 230	- 6 42.7 280	160 232
22000	57	- 48 39.5 258	165 224	- 38 39.9 262	163 227	- 28 40.6 265	161 229	- 18 41.2 269	159 232	- 8 41.7 273	158 234
23000	56.5	- 50 38.7 254	163 226	- 40 39.1 256	161 228	- 30 39.7 260	159 231	- 20 40.3 265	158 233	- 10 40.9 267	156 235
24000	56	- 52 37.9 249	161 227	- 42 38.3 251	159 230	- 32 38.8 254	158 232	- 22 39.4 258	156 234	- 12 40.0 262	154 237
25000	55.5	- 54 37.2 243	159 228	- 44 37.6 247	158 231	- 34 38.1 249	156 233	- 24 38.6 254	154 236	- 14 39.2 256	153 238
26000	55	- 56 36.5 238	157 229	- 46 36.9 243	156 232	- 36 37.4 245	154 235	- 26 37.8 247	152 237	- 16 38.3 251	151 239
27000	54.5	- 58 35.8 234	156 230	- 48 36.2 238	154 233	- 38 36.7 240	152 236	- 28 37.1 243	151 238	- 18 37.6 247	149 240
28000	54	- 60 35.1 229	154 231	- 50 35.5 234	152 235	- 40 36.1 236	151 237	- 30 36.5 238	149 239	- 20 37.0 243	147 241
29000	53.5	- 62 34.6 227	152 232	- 52 35.0 229	150 236	- 42 35.5 231	149 239	- 32 35.9 236	147 241	- 22 36.3 238	145 242

Figure 5.10.23 - CRUISE PERFORMANCE -  
Long Range Cruise (5512 lbs - 2500 kg)

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).

**CRUISE PERFORMANCE**

**Long Range Cruise (6173 lbs - 2800 kg)**

Conditions : Landing gear and flaps UP  
2000 RPM (\*) - BLEED LO

LEGEND :	OAT : °C	IAS : KIAS
	FF : us gal/h	
	FF : lbs/h	TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C		ISA - 10°C		ISA		ISA + 10°C		ISA + 20°C	
15000	65.5	- 34	179	- 24	177	- 14	176	- 4	174	+ 6	172
		48.1		48.8		49.5		50.1		50.8	
		315	218	320	220	324	223	328	225	333	227
18000	64	- 40	174	- 30	172	- 20	171	- 10	169	0	167
		45.0		45.7		46.2		47.0		47.6	
		295	222	300	225	302	227	309	230	311	232
19000	63.5	- 42	172	- 32	170	- 22	169	- 12	167	- 2	166
		44.1		44.7		45.3		46.0		46.6	
		289	223	293	226	298	229	302	231	304	233
20000	63	- 44	170	- 34	169	- 24	167	- 14	166	- 4	164
		43.2		43.7		44.4		45.0		45.6	
		282	225	287	227	291	230	295	233	298	234
21000	62.5	- 46	169	- 36	167	- 26	166	- 16	164	- 6	162
		42.3		42.9		43.5		44.1		44.6	
		278	226	280	229	284	232	289	234	293	236
22000	62	- 48	167	- 38	165	- 28	164	- 18	162	- 8	161
		41.5		42.0		42.5		43.2		43.7	
		271	227	276	230	278	233	282	236	287	238
23000	61.5	- 50	165	- 40	164	- 30	162	- 20	161	- 10	159
		40.6		41.1		41.7		42.3		42.9	
		267	229	269	232	273	235	278	237	280	239
24000	61	- 52	164	- 42	162	- 32	161	- 22	159	- 12	157
		39.8		40.3		40.8		41.5		42.0	
		260	230	265	233	267	236	271	238	276	240
25000	60.5	- 54	162	- 44	160	- 34	159	- 24	157	- 14	155
		39.0		39.6		40.1		40.7		41.2	
		256	232	260	235	262	237	267	239	269	241
26000	60	- 56	160	- 46	159	- 36	157	- 26	155	- 16	153
		38.3		38.8		39.4		39.9		40.4	
		251	233	254	236	258	239	262	241	265	243
27000	59.5	- 58	159	- 48	157	- 38	155	- 28	153	- 18	151
		37.6		38.2		38.7		39.2		39.8	
		247	235	249	237	254	240	258	242	260	244
28000	59	- 60	157	- 50	155	- 40	153	- 30	151	- 20	149
		37.0		37.5		38.0		38.6		39.1	
		243	236	245	238	249	241	254	243	256	245
29000	58.5	- 62	155	- 52	153	- 42	151	- 32	149	- 22	147
		36.5		37.0		37.5		38.0		38.5	
		238	238	243	239	245	242	249	244	251	246

Figure 5.10.24 - CRUISE PERFORMANCE -  
Long Range Cruise (6173 lbs - 2800 kg)

(\*) Propeller RPM utilization between 1600 and 2000 RPM is possible without changing performance. Display the TRQ indicated in table with Np = 2000 RPM, then reduce Np without resetting power lever (within limits permitted by torque limiter).



## 5.11 - TIME, CONSUMPTION AND DESCENT DISTANCE

Conditions : Power as required to maintain constant Vz  
Landing gear and flaps UP  
CAS = 230 KCAS - 2000 RPM - BLEED LO

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	
30000	20.00	70	55	18.5	92	15.00	50	39	13.2	70	12.00	37	29	9.8	57
28000	18.40	67	53	17.7	85	14.00	47	37	12.4	65	11.10	34	27	9	52
26000	17.20	63	49	16.6	80	13.00	43	34	11.4	60	10.25	32	25	8.4	48
24000	16.00	58	45	15.3	72	12.00	41	32	10.8	55	09.35	29	23	7.7	43
22000	14.40	54	42	14.3	65	11.00	37	29	9.8	50	08.50	27	21	7.1	39
20000	13.20	49	39	12.9	58	10.00	34	27	9	45	08.00	24	19	6.3	35
18000	12.00	45	35	11.9	50	09.00	31	24	8.2	40	07.10	23	18	6.1	31
16000	10.40	40	31	10.6	45	08.00	28	22	7.4	35	06.25	20	16	5.3	27
14000	09.20	35	28	9.2	40	07.00	24	19	6.3	30	05.35	18	14	4.8	23
12000	08.00	31	24	8.2	33	06.00	20	16	5.3	25	04.50	15	12	4	20
10000	06.40	26	20	6.9	27	05.00	18	14	4.8	20	04.00	13	10	3.4	16
8000	05.20	21	16	5.5	20	04.00	14	11	3.7	16	03.10	10	8	2.6	13
6000	04.00	16	12	4.2	15	03.00	11	9	2.9	12	02.25	8	6	2.1	10
4000	02.40	10	8	2.6	10	02.00	8	6	2.1	8	01.35	5	4	1.3	6
2000	01.20	5	4	1.3	5	01.00	4	3	1.1	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 5.11.1 - TIME, CONSUMPTION AND DESCENT DISTANCE

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## 5.12 - HOLDING TIME

Conditions : Landing gear and flaps UP  
 IAS = 120 KIAS - 2000 RPM - BLEED LO  
 TRQ ≈ 30 %

Pressure altitude (feet)	FUEL USED DURING HOLDING TIME											
	Weight 4850 lbs (2200 kg)						Weight 5512 lbs (2500 kg)					
	10 min			30 min			10 min			30 min		
	l	kg	us gal	l	kg	us gal	l	kg	us gal	l	kg	us gal
SL	29	23	7.7	87	69	23.0	31	24	8.2	93	72	24.6
5000	25	20	6.6	75	60	19.8	27	21	7.1	81	63	21.4
10000	23	18	6.1	69	54	18.2	24	19	6.3	72	57	19.0
15000	20	16	5.3	60	48	15.8	22	17	5.8	66	51	17.4
20000	19	15	5.0	57	45	15.0	20	16	5.3	60	48	15.8

Figure 5.12.1 - HOLDING TIME

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## 5.13 - LANDING DISTANCES

**WEIGHT : 6250 lbs (2835 kg)**

- Associated conditions :
- Landing gear DN and flaps LDG
  - Approach speed IAS = 80 KIAS
  - Touch-down speed IAS = 65 KIAS
  - Maximum braking without reverse
  - Hard, dry and level runway
  - GR = Ground roll (in ft)
  - D<sub>50</sub> = Landing distance (clear to 50 ft) (in ft)

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 5.13.1 - LANDING DISTANCES - 6250 lbs (2835 kg)

- Corrections :
- . Reduce total distances of 10 % every 10 kt of headwind
  - . Increase total distances of 30 % every 10 kt of tail-wind

Other runway surfaces require the following correction factors :

- Increase by :
- 7 % on hard grass
  - 10 % on short grass
  - 15 % on wet runway
  - 25 % on high grass
  - 30 % on slippery runway

**LANDING DISTANCES**

**WEIGHT : 5071 lbs (2300 kg)**

- Associated conditions :
- Landing gear DN and flaps LDG
  - Approach speed IAS = 80 KIAS
  - Touch-down speed IAS = 60 KIAS
  - Maximum braking without reverse
  - Hard, dry and level runway
  - GR = Ground roll (in ft)
  - D<sub>50</sub> = Landing distance (clear to 50 ft) (in ft)

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 5.13.2 - LANDING DISTANCES - 5071 lbs (2300 kg)

- Corrections :
- . Reduce total distances of 10 % every 10 kt of headwind
  - . Increase total distances of 30 % every 10 kt of tail-wind

Other runway surfaces require the following correction factors :

- Increase by :
- |      |                |      |                    |
|------|----------------|------|--------------------|
| 7 %  | on hard grass  | 25 % | on high grass      |
| 10 % | on short grass | 30 % | on slippery runway |
| 15 % | on wet runway  |      |                    |

# SECTION 6

## WEIGHT AND BALANCE

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## **6.1 - GENERAL**

This section contains the procedure for determining the basic empty weight and the balance corresponding to the TBM 700 airplane. Procedures for calculating the weight and the balance for various flight operations are also provided. A list of equipment available for this airplane is included at the end of this section.

It should be noted that 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.

**IT IS THE PILOT'S RESPONSIBILITY TO ENSURE THAT THE AIRPLANE IS LOADED PROPERLY AND THE WEIGHT AND BALANCE LIMITS ARE ADHERED TO.**

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## **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.*

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### **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).
- the other one is in the rear of the pressurized cabin with maximum baggage capacity of 220 lbs (100 kg).

Stowing straps are provided for securing parcels and baggage on compartment floor.

#### **WARNING**

**IT IS THE PILOT'S RESPONSIBILITY TO CHECK THAT ALL THE 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 WILL BE PERFORMED IN COMPLIANCE WITH REGULATIONS CONCERNING TRANSPORT OF DANGEROUS PRODUCT AND ANY OTHER APPLICABLE REGULATION**

**DO NOT ALLOW ANY LIVE ANIMALS, FULL BOTTLES, CLOSED CONTAINERS AND / OR AEROSOLS IN FORWARD NON-PRESSURIZED COMPARTMENT**

Baggage compartments loading must be done in accordance with the weight and balance limits of the airplane.

Generally, if rear seats are not used, first load aft compartment, then, if required, FWD compartment.

If rear seats are used, first load FWD compartment, then, if required, aft compartment.

Weight and balance graph should be checked to ensure the airplane is within the allowable limits.

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## 6.4 - DETERMINING WEIGHT AND BALANCE

### GENERAL

This paragraph is intended to provide the pilot with a simple and rapid means of determining weight and balance of his airplane.

IT IS THE PILOT'S RESPONSIBILITY TO ENSURE THAT THE AIRPLANE IS LOADED PROPERLY AND THE WEIGHT AND BALANCE LIMITS ARE ADHERED TO.

Empty weight to be considered is the weight noted on last weighing form. To this empty weight corresponds a basic balance, expressed in percent of mean aerodynamic chord. Empty weight and the corresponding balance allow to calculate the airplane basic index.

If airplane empty weight has varied since last weighing form, refer to paragraph "DETERMINING EMPTY AIRPLANE CHARACTERISTICS" to determine new empty weight and the corresponding balance (for instance : optional equipment installation).

**UTILIZATION OF WEIGHT AND BALANCE GRAPH** (Figures 6.4.1 and 6.4.1A, 6.4.2 and 6.4.2A, 6.4.3 and 6.4.3A)

### CAUTION

**LOADING SAMPLE (FIGURE 6.4.1 OR 6.4.1A) IS ONLY GIVEN AS AN EXAMPLE ; FOR CALCULATION CONCERNING YOUR AIRPLANE, REFER TO THE GRAPH CORRESPONDING TO ITS VALIDITY**

EXAMPLES :

	<b>SAMPLE 1</b> Fig. 6.4.1	<b>SAMPLE 2</b> Fig. 6.4.1A
<b>1 - Airplane basic characteristics :</b>		
W = Empty weight	: 1860 kg	4100 lbs
CG = Balance (m.a.c. %)	: 16 %	16 %
<b>2 - Foreseen loading :</b>		
1 Pilot and 1 front Passenger	: 150 kg	400 lbs
2 Intermediate Passengers	: 100 kg	300 lbs
2 Rear Passengers	: 100 kg	200 lbs
Cargo in aft compartment	: 60 kg	100 lbs
Fuel	: 500 kg	1000 lbs

**3 - Utilization of weight and balance graph :**

- Record airplane basic characteristics in ①.
- Compute basic index with the formula described in ② and record the result in ③.
- Record foreseen loading in ④ and compute total weight of the loaded airplane.

**NOTE :**

*Intermediate calculation of total weight without fuel allows, taking into account the "Maximum Weight" limit, computing rapidly fuel quantity liable to be loaded.*

*A conversion scale (lb / us gal) allows quick computation from fuel pounds to us gallons.*

- Note computed index ③ on upper index scale and proceed as follows :
  - a) Vertically mark a line downwards up to interception of oblique lines of first heading "Front seats".
  - b) Then continue the line horizontally following direction given by arrow according to indicated value of loading (400 lbs or 150 kg in example) **(the weight indicated in the arrow gives pitch value between two oblique lines)**.
  - c) Then continue the line vertically downwards up to interception of oblique lines of second heading and work in the same way as before (procedure described in b).
  - d) Proceed in the same way for remaining headings.
- Draw then a vertical line ⑤ corresponding to final index (loaded airplane) up to interception of horizontal line representing airplane total weight ⑥.
- Read corresponding balance (28.7 % or 30.2 % in example) by checking that obtained point is inside the weight and balance envelope.  
Check also that the total zero fuel weight does not exceed the max. zero fuel weight of 6001 lbs (2722 kg). If not, reconsider airplane loading.
- Record these data on your navigation log.



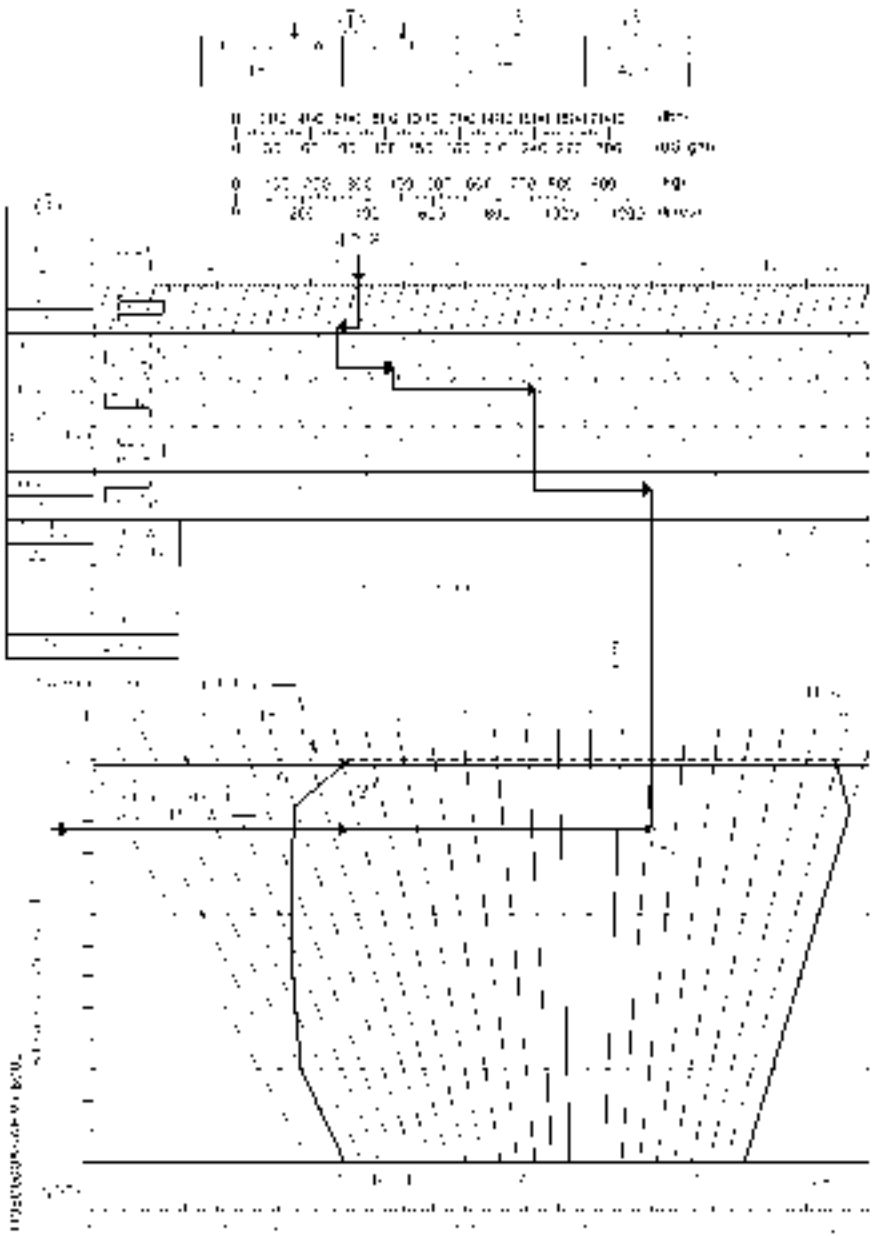


Figure 6.4.1 - LOADING SAMPLE (in Kg and Litres)

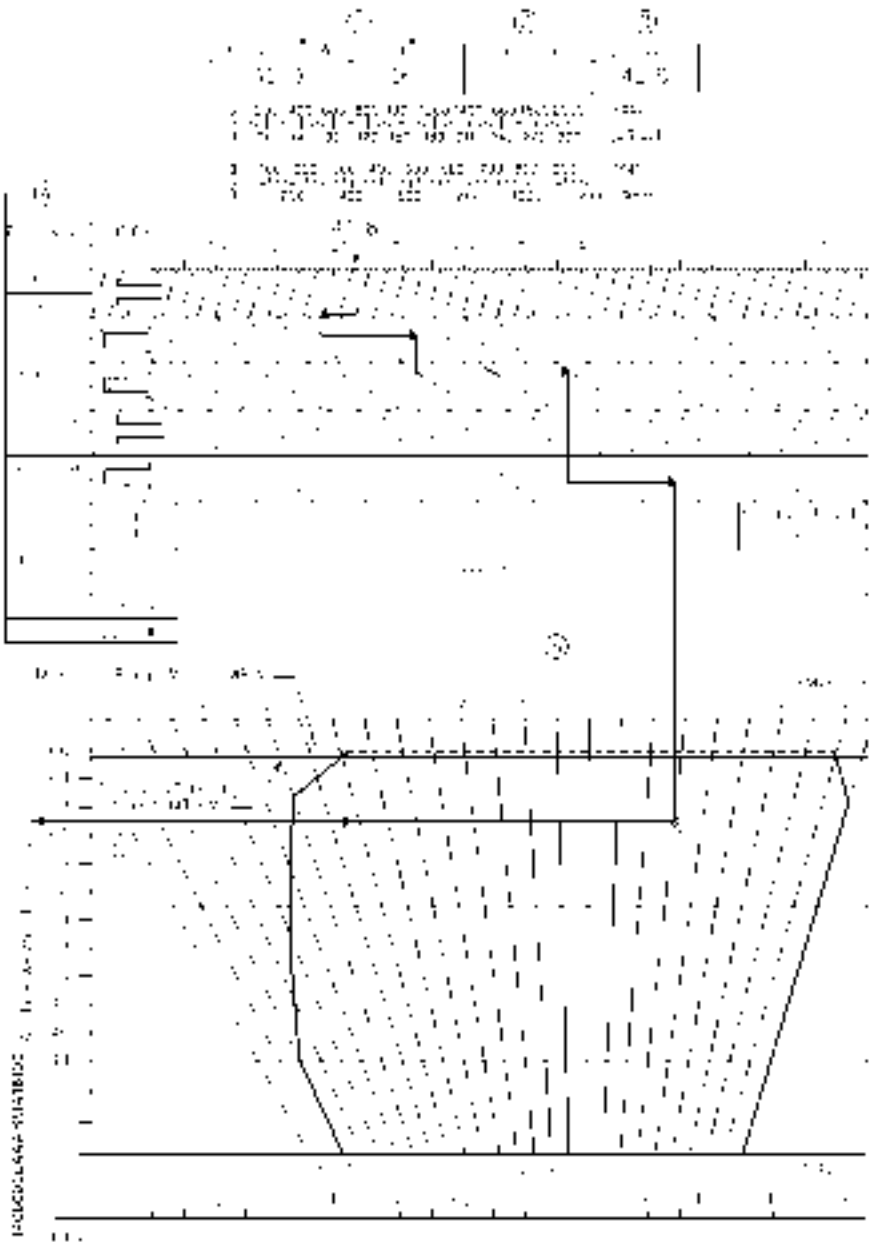


Figure 6.4.1A - LOADING SAMPLE (in lbs and us gal)

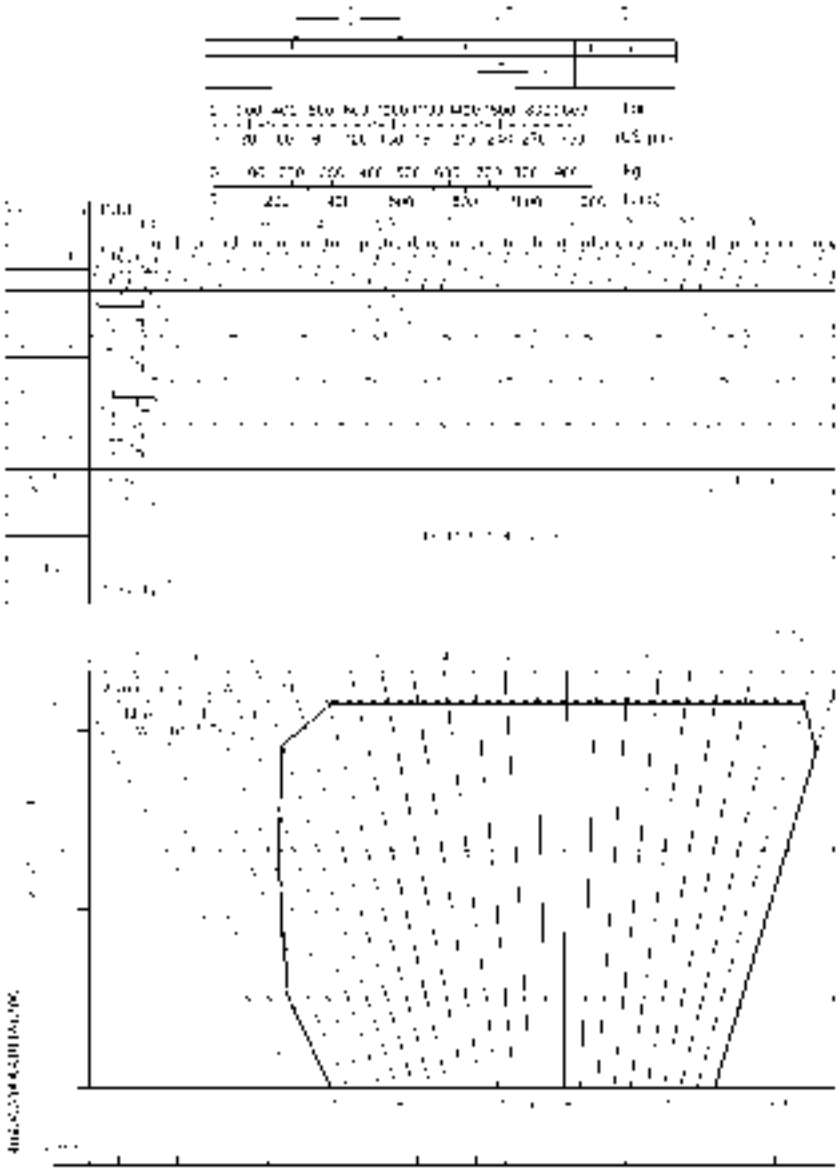


Figure 6.4.2 - WEIGHT AND BALANCE GRAPH (in Kg and Litres)  
Valid S / N 1 to 23, 25, 28, 33 and 35, except airplanes equipped as a retrofit with modification Nr MOD 70-019-25

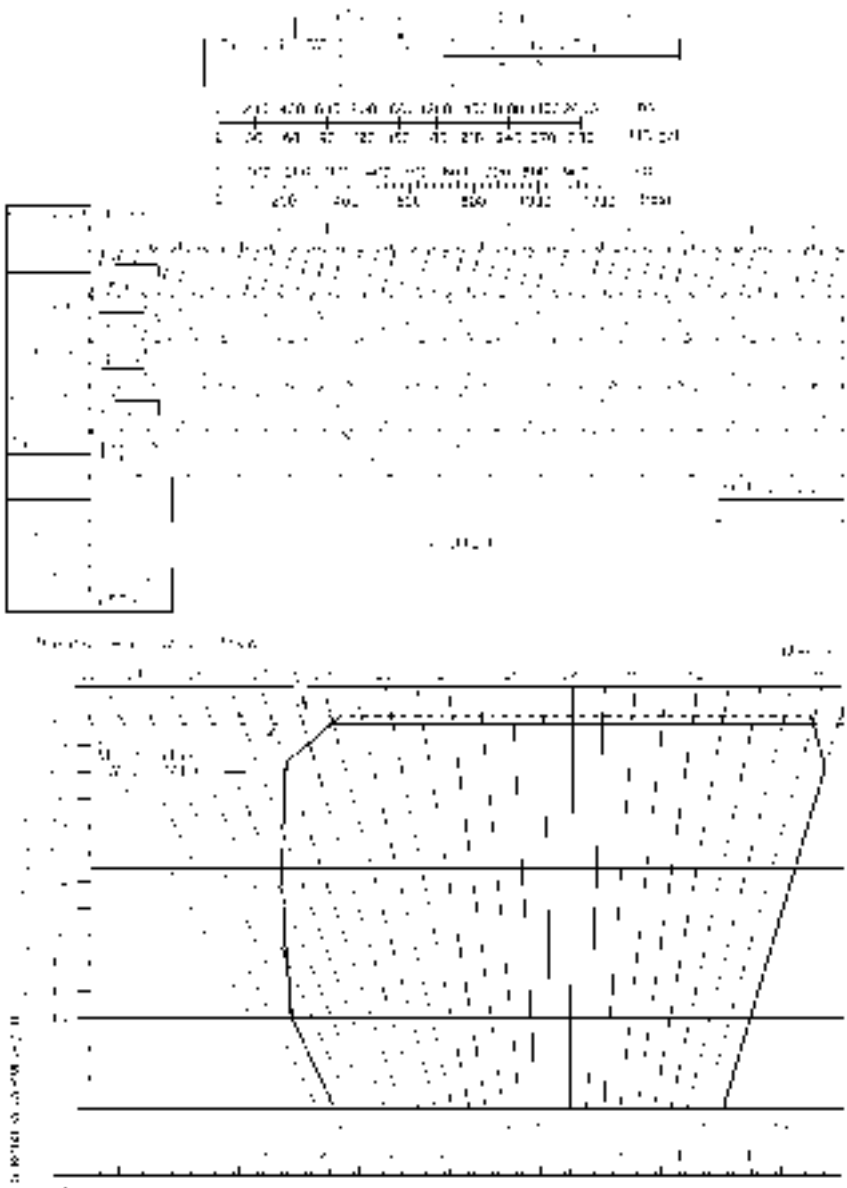


Figure 6.4.2A - WEIGHT AND BALANCE GRAPH (in lbs and us gal)  
Valid S / N 1 to 23, 25, 28, 33 and 35, except airplanes equipped as a retrofit with modification Nr MOD 70-019-25

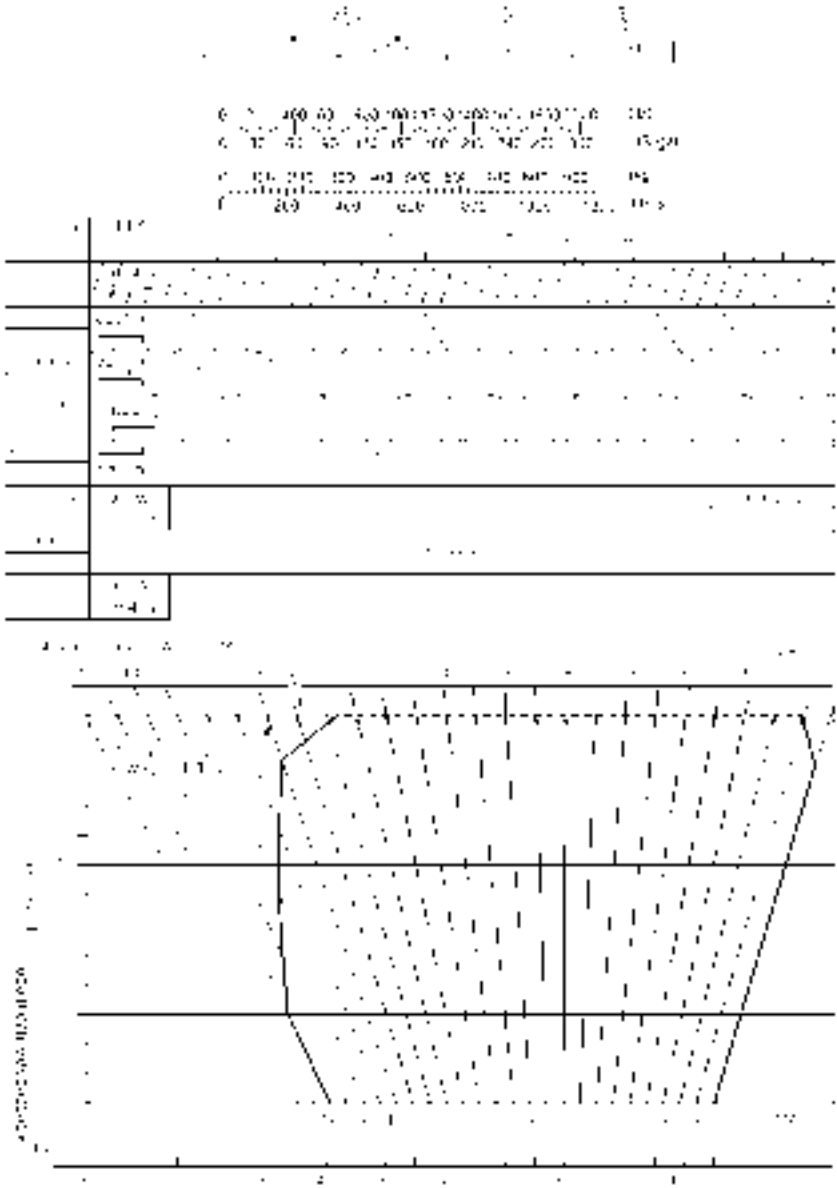


Figure 6.4.3 - WEIGHT AND BALANCE GRAPH (in Kg and Litres)  
Valid S / N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes equipped  
as a retrofit with modification Nr MOD 70-019-25

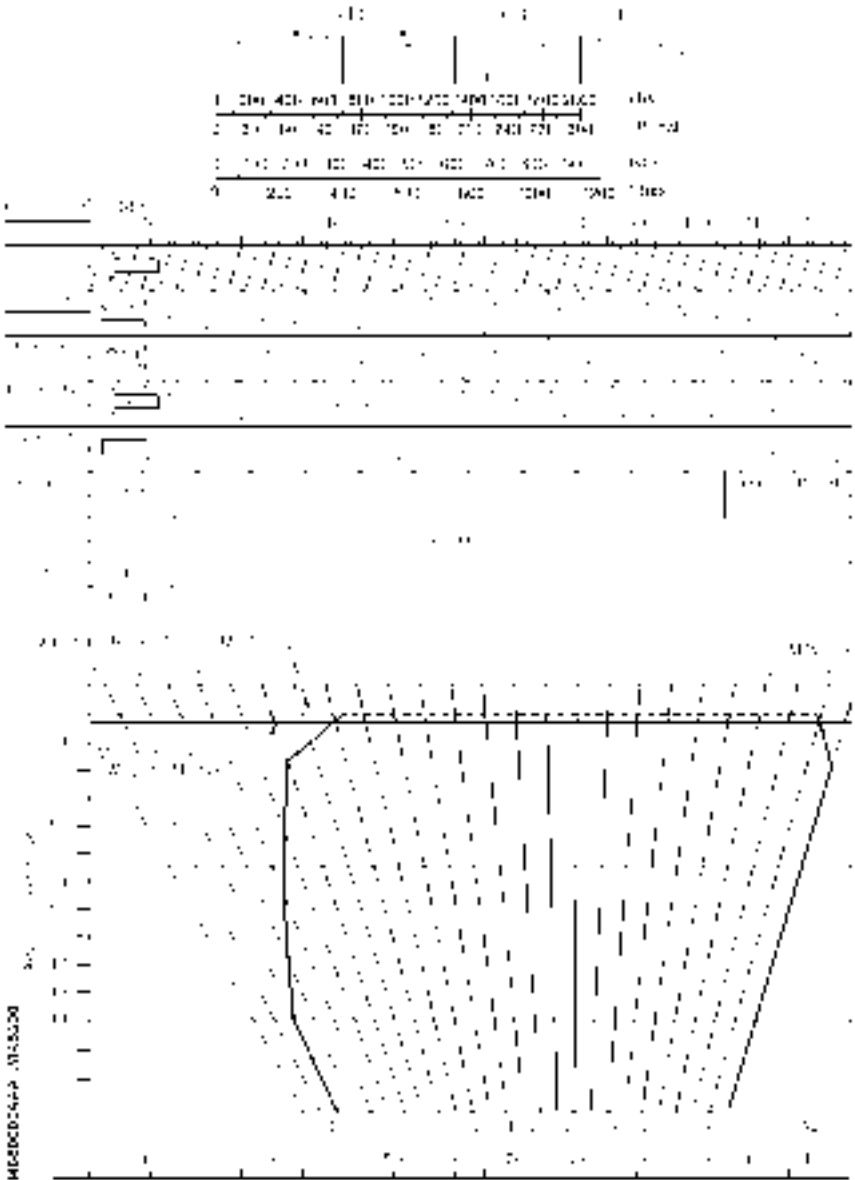


Figure 6.4.3A - WEIGHT AND BALANCE GRAPH (in lbs and us gal)  
Valid S / N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes equipped  
as a retrofit with modification Nr MOD 70-019-25

## 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.

List of equipment (paragraph 6.5) contains the standard and optional equipment, as well as their characteristics (weight, arm).

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 6.4.4 - 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.*

Front seats	: 180.5 in. (4.585 m)	} Valid S / N 1 to 23, 25,
Intermediate seats	: 219.1 in. (5.565 m)	} 28, 33 and 35, <u>except</u>
Rear seats	: 259.3 in. (6.585 m)	} airplanes equipped as
FWD cargo compart.	: 128.0 in. (3.250 m)	} a retrofit with
Aft bagg. compart.	: 297.6 in. (7.560 m)	} modification
Fuel	: 189.8 in. (4.820 m)	} Nr MOD 70-019-25

Front seats	: 180.5 in. (4.585 m)	} Valid S / N 24, 26, 27,
Intermediate seats	: 222.1 in. (5.641 m)	} 29 to 32, 34, 36 to 9999,
Rear divan (2 seats)	: 272.3 in. (6.916 m)	} <u>plus</u> airplanes equipped
FWD cargo compart.	: 128.0 in. (3.250 m)	} as a retrofit with
Aft bagg. compart.	: 303.0 in. (7.695 m)	} modification
Fuel	: 189.8 in. (4.820 m)	} Nr MOD 70-019-25



## 6.5 - LIST OF EQUIPMENT

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

### LIST OF CRITICAL RVSM EQUIPMENT

Equipment listed hereafter, or later approved versions, is required for RVSM operation.

Equipment	*	**	P/N
Barometric altimeter : - GDC74B (Air data computer) - GDU1XXX (Display)	2 3	2 2	P/N 011-01110-01 P/N 011-00916-10 or P/N 011-01108-10
Autopilot Altitude Hold function : - GMC710 (AFCS mode controller) - GIA63W (Integrated Avionics Computer) - GRS77	1 2 2	1 2 2	P/N 011-01020-10 P/N 011-01105-020 P/N 011-00868-10
ATC : - 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	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>01 - SPECIFIC OPTIONAL EQUIPMENT</b>			
S	01026B	Flight ceiling at 31000 ft		/	/

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>21 - ENVIRONMENTAL SYSTEM</b>			
		<b>21-20 - Distribution</b>			
S		Cabin fan 11-93364	HONEYWELL LMB	7.716 (3.500)	292.72 (7.435)
		<b>21-30 - Pressurization control</b>			
S	0276-00A	Cabin pressure sensor CP0304	FALGAYRAS	/	/
S		Cabin altitude warn switch 214 C40.3.261	CONDEC/ EATON	0.077 (0.035)	153.94 (3.910)
S		Cabin pressurization dump solenoid valve 5112-1	AEROSPACE	0.441 (0.200)	181.10 (4.600)
S		Cabin ΔP warn switch 17-600-01	UMA	0.143 (0.065)	139.76 (3.550)
S		Check valve 985C-63-3	LE BOZEC	0.198 (0.090)	118.11 (3.000)
S		Outflow valve controller 130618-1	GARRETT	1.653 (0.750)	157.48 (4.000)
S		Outflow valve 103760-1	GARRETT	1.543 (0.700)	317.32 (8.060)
S		Safety valve 103760-2	GARRETT	1.543 (0.700)	317.32 (8.060)
		<b>21-50 - Temperature conditioning system</b>			
O	0285-21A	Ground conditioning fan (TBM700A) T700A21.50100100	SOCATA	13.911 (6.310)	90.55 (2.300)
O	0285-21B	Ground conditioning fan (TBM700B) T700A21.50100100	SOCATA	13.911 (6.310)	90.55 (2.300)
S		Cooling turbine 2204600-1	GARRETT	6.537 (2.965)	98.43 (2.500)
S		Ground conditioning heat M5922H-9A1	DYNAMIC AIR	13.911 (6.310)	90.55 (2.300)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
S		Heat exchanger 195980-1	GARRETT	12.599 (5.715)	114.17 (2.900)
S		Heat exchanger 195980-3	GARRETT	12.599 (5.715)	114.17 (2.900)
S		Overheat switch 1173T200	NEO DYN	0.110 (0.050)	114.17 (2.900)
S		Pilot regulator 3214102-1	GARRETT	0.573 (0.260)	116.14 (2.950)
S		Pressure regulating and shut-off valve 3213876-9	GARRETT	4.564 (2.070)	114.17 (2.900)
S		Temperature control sensor 622446-1	GARRETT	0.628 (0.285)	133.86 (3.400)
S		Temperature control valve 979432-2	GARRETT	2.469 (1.120)	106.30 (2.700)
S		Temperature control valve 979432-5	GARRETT	2.469 (1.120)	106.30 (2.700)
S		Water separator 85020-8	GARRETT	2.249 (1.020)	94.49 (2.400)
		<b>21-55 - Vapor cycle cooling system</b>			
A	21002A	Vapor cycle cooling system (TBM700A)	SOCATA (KEITH)	67.681 (30.700)	315.98 (8.026)
A	21002B	Vapor cycle cooling system (TBM700B)	SOCATA (KEITH)	67.681 (30.700)	318.50 (8.090)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>22 - AUTO FLIGHT</b>			
S	0276-00A	AFCS composed of :	GFC 700	GARMIN	
		. Pitch servo and Servo mount	GSA 81 GSM 85	GARMIN 3.79 or 3.88 (1.72 or 1.76)	247.40 (6.284)
		. Roll servo and Servo mount	GSA 81 GSM 85	GARMIN 3.79 or 3.88 (1.72 or 1.76)	231.10 (5.870)
		. Yaw servo and Servo mount	GSA 81 GSM 85	GARMIN 3.79 or 3.88 (1.72 or 1.76)	253.70 (6.444)
		. Pitch trim servo and Servo mount	GSA 81 GSM 85	GARMIN 4.04 (1.83)	157.87 (4.010)
		. Trim adapter	GTA 82	GARMIN 1.30 (0.59)	240.87 (6.118)
		. AFCS Control Unit	GMC 710	GARMIN 0.91 (0.41)	156.61 (3.978)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
<b>23 - COMMUNICATIONS</b>					
S		Cockpit loud-speaker (Qty 2) AB 100 SC	ALPINE ELECTRONICS	0.77 (0.350)	181.10 (4.600)
S	0276-00A	Dual audio system with integrated Marker Beacon Receiver # 1 GMA 1347C	GARMIN	2.59 (1.17)	153.35 (3.895)
S	0276-00A	Dual audio system with integrated Marker Beacon Receiver # 2 GMA 1347C	GARMIN	2.59 (1.17)	153.35 (3.895)
S	0276-00A	G1000 COM # 1 system . Transceiver (integrated in the GIA 63W Integrated Avionics Unit # 1 : refer to ATA 34-28) . VHF antenna (under fuselage) 16-21B-P3	GARMIN GARMIN CHELTON	0.86 (0.390)	271.65 (6.900)
S	0276-00A	G1000 COM # 2 system . Transceiver (integrated in the GIA 63W Integrated Avionics Unit # 2 : refer to ATA 34-28) . VHF antenna (upper fuselage) 16-21B-P3	GARMIN GARMIN CHELTON	0.86 (0.390)	271.65 (6.900)
S		Static dischargers Type 2-16SC-1	CHELTON	Neglig.	/
A	23009A	Additional equipment for electrostatic dischargers	CHELTON	Neglig.	/
A	0276-00B	Data link XM Radio GDL 69A interfaced with G1000 system	GARMIN	2.55 (1.16)	150.67 (3.827)
O	23011A	Radio headset H10-13.4	DAVID CLARK	/	/

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
O	23011B	Radio headset 7001	PELTOR	/	/
O	23011C	Radio headset HMEC 25-KA	SENNHEISER	/	/
O	23011D	Radio stereo-headset HMEC 25-KA-S	SENNHEISER	/	/
O	23011E	Radio stereo-headset HMEC 25-KAX	SENNHEISER	/	/
O	23011F	Radio stereo-headset Serie X	BOSE	/	/
O	23011G	Radio stereo-headset HMEC 25-6A	SENNHEISER	/	/
O	0288-23A	VHF COM # 3 KTR 908	KING	/	/
O	0331-23E	Weather Data Link and Satellite Phone GSR 56 with antenna CI 490-1 (Whole capability pre-installed) From S/N 296	GARMIN	0.61 (0.276)	58.00 (1.474)
O	0331-23F	Weather Data Link and Satellite Phone GSR 56 with antenna CI 490-22 (Whole capability pre-installed) From S/N 14	GARMIN	0.61 (0.276)	58.00 (1.474)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>24 - ELECTRICAL POWER</b>			
		<b>24-30 - DC generation</b>			
R		Electric power center 160GC02Y02	ECE	11.023 (5.000)	127.95 (3.250)
R		Electric power center 160GC02AY02 (Ignition priority + contact splitting)	ECE	11.023 (5.000)	127.95 (3.250)
R		Electric power center (Freon) 160GC02Y03	ECE	11.023 (5.000)	127.95 (3.250)
R		Electric power center 160GC02Y04 (Freon + ignition priority)	ECE	11.023 (5.000)	127.95 (3.250)
R		Electric power center 160GC02Y05 (Freon + ignition priority + contact splitting) S/N 92-9999 and S/N 1-92 after SB 70-031-24	ECE	11.023 (5.000)	127.95 (3.250)
R		Stand-by generator T700A2430045900	SOCATA	12.125 (5.500)	102.36 (2.600)
R		Stand-by generator T700A2430080900	SOCATA	12.125 (5.500)	102.36 (2.600)
R		Starter generator 8012F	AUXILEC	24.471 (11.100)	110.24 (2.800)
S	24001C	Battery 4076-1	SAFT	83.334 (37.800)	112.00 (2.845)
O	24002B	Lead-Acid battery RG-380E/44	CONCORDE	85.979 (39.000)	112.20 (2.850)
A	0303-24	Charger/Maintainer for lead acid battery (Airplanes equipped with OPT70-24002)		0.220 (0.100)	114.17 (2.900)



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
S		<b>24-40 - External power supply</b>  Ground power receptacle MS 3506-1	QPL (AIRCRAFT APPLIANCES AND EQUI. LTD)	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	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>25 - EQUIPMENT AND FURNISHINGS</b>			
A	25001A	Toilets	SOCATA	30.055 (13.633)	285.91 (7.262)
A	25003A	Pilot piddle pak (TBM700A)	SOCATA	0.220 (0.100)	174.01 (4.420)
A	25003B	Pilot piddle pak	SOCATA	0.220 (0.100)	174.01 (4.420)
A	25004A	Leather upholstery - version A "American L."	SOCATA	6.614 (3.000)	212.60 (5.400)
A	25004B	Leather upholstery - version B "Wentworth"	SOCATA	6.614 (3.000)	212.60 (5.400)
A	25004C	Leather upholstery - version C "Design"	SOCATA	6.614 (3.000)	212.60 (5.400)
A	25004D	Leather upholstery - version D "Autolux"	SOCATA	6.614 (3.000)	212.60 (5.400)
A	0386-25	Leather upholstery "Vulcain"	SOCATA	6.614 (3.000)	6.614 (3.000)
A	25005A	JEPPESEN filing cabinet (TBM700A)	SOCATA	12.302 (5.580)	201.06 (5.107)
A	25005B	JEPPESEN filing cabinet - PPI	SOCATA	18.739 (8.500)	202.76 (5.150)
A	25005C	JEPPESEN filing cabinet - Composite	SOCATA	14.991 (6.800)	202.76 (5.150)
A	25006A	Storage box (TBM700A)	SOCATA	11.155 (5.060)	201.06 (5.107)
A	25006B	Refreshment cabinet (TBM700A)	SOCATA	15.873 (7.200)	201.06 (5.107)
A	25006C	Storage box - PPI	SOCATA	20.282 (9.200)	202.76 (5.150)
A	25006D	Refreshment cabinet - PPI	SOCATA	23.589 (10.700)	202.76 (5.150)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	25006E	Storage box - Composite	SOCATA	16.314 (7.400)	202.76 (5.150)
A	25006F	Refreshment cabinet - Composite	SOCATA	18.960 (8.600)	202.76 (5.150)
A	25007A	Retractable table	SOCATA	4.123 (1.870)	244.25 (6.204)
A	25009A	Audio cabinet ( <u>TBM700A</u> )	SOCATA	21.429 (9.720)	205.04 (5.208)
A	25009B	Audio cabinet - PPI	SOCATA	8.704 (13.020)	205.43 (5.218)
A	25009C	Audio cabinet - Composite	SOCATA	24.052 (10.910)	206.14 (5.236)
A	25013B	Map holder on R.H. control wheel	SOCATA	0.463 (0.210)	167.72 (4.260)
O		LED lighted chart holder	MADELEC SYSTEM	0.595 (0.270)	/
O	25017A	Window panel blinds and upper door locking safety device ( <u>TBM700A</u> )	SOCATA	Δ Negli- gible	/
A	25018A	Smoke goggles	PURITAN	0.573 (0.260)	200.00 (5.080)
A	25021A	Coat hanger	SOCATA	Negli- gible	/
O	25022A	Upholstery panels modifications - Version A	SOCATA	Δ 7.720 (Δ 3.500)	216.53 (5.500)
O	25022B	Upholstery panels modifications - Version B	SOCATA	Δ 5.510 (Δ 2.500)	216.53 (5.500)
O	25022C	Upholstery panels modifications - Version C	SOCATA	Δ 5.510 (Δ 2.500)	216.53 (5.500)
A	25024A	Carpet protecting mat - version A ( <u>TBM700A</u> )	SOCATA	5.730 (2.600)	246.10 (6.250)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	25024B	Carpet protecting mat - version B (TBM700B)	SOCATA	5.730 (2.600)	246.10 (6.250)
O	25025A	Cabin furnishings "LUXE" (TBM700B)	SOCATA	Δ 7.720 (Δ 3.500)	288.38 (7.325)
O	25025B	Cabin furnishings "VIP" (TBM700B)	SOCATA	Δ 7.720 (Δ 3.500)	288.38 (7.325)
A	25026A	Partition net between the cabin and the baggage compartment	SOCATA	2.756 (1.250)	289.53 (7.354)
A	25028A	28V plugs - Lighter	SOCATA	/	/
A	25031	Cargo transportation capability without pilot door (TBM700B)	SOCATA	20.393 (9.250)	289.53 (7.354)
A	25032	Front seats ease covers	SOCATA	2.756 (1.250)	183.78 (4.668)
A	0151-25	CD reader	PCD 7100 PS ENGINEERING	2.200 (1.000)	205.04 (5.208)
A	0174-25C	Optional 12V plugs	SOCATA	3.307 (1.500)	195.28 (4.960)
A	0174-25D	Optional 12V plugs (plug on R.H. side lining)	SOCATA	3.307 (1.500)	195.28 (4.960)
A	0229-25B	28 V plugs	SOCATA	/	/
A	0246-25B	Potty seat (Chemical toilets cabinet) and its associated curtain (TBM700B)	DOMETIQUE/ CATHERINEAU	54.233 (24.600)	219.96 (5.587)
A	0368-25	Storage bag for goggles	SOCATA	0.326 (0.148)	182.68 (4.640)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>Seats - Belts (Standard equipment)</b>			
S		Seats (6 places without oxygen equipment) ( <u>TBM700A</u> ) :  - Pre-MOD70-019-25 Valid S/N 1 to 23, 25, 28, 33 and 35 :			
S		. Pilot's seat T700A2512000	SOCATA	24.250 (11.000)	180.31 (4.580)
S		. Front R.H. seat T700A2512000	SOCATA	24.250 (11.000)	180.31 (4.580)
S		. Intermediate seat (R.H. or L.H.) (back to flight direction) T700A2522000	SOCATA	23.148 (10.500)	217.72 (5.330)
S		. Rear L .H. seat T700A2522001	SOCATA	24.250 (11.000)	257.09 (6.530)
S		. Rear R. H. seat T700A2522000  or	SOCATA	23.148 (10.500)	257.09 (6.530)
O		. Rear divan Model 3028 P/N 303437-3 T700A2522000990  (as a retrofit)	ERDA	74.956 (34.000)	271.30 (6.891)
S		Seats (6 places with or without oxygen equipment) :  - Post-MOD70-019-25 Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 9999 :			
S		. Pilot's seat T700A2512000 ( <u>TBM700A</u> )	PPI	29.696 (13.470)	182.68 (4.640)
S		. Pilot's seat T700A2512002 ( <u>TBM700B</u> )	PPI	29.696 (13.470)	182.68 (4.640)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
O		. Pilot's seat T700A2512002 (TBM700A)	PPI	29.696 (13.470)	182.68 (4.640)
O		. Pilot's seat T700A2512082 (TBM700B)	PPI	29.696 (13.470)	182.68 (4.640)
S		. Front R.H. seat T700A2512000 (TBM700A)	PPI	29.696 (13.470)	182.68 (4.640)
S		. Front R.H. seat T700A2512002 (TBM700B)	PPI	29.696 (13.470)	182.68 (4.640)
O		. Front R.H. seat T700A2512002 (TBM700A)	PPI	29.696 (13.470)	182.68 (4.640)
O		. Front R.H. seat T700A2512082 (S/N 128 only)	PPI	29.696 (13.470)	182.68 (4.640)
O		. Front R.H. seat T700A2512082 (TBM700B)	PPI	29.696 (13.470)	182.68 (4.640)
S		. Intermediate seats (R.H. and L.H.) (back to flight direction) (TBM700A) T700A2522000	PPI	25.507 (11.570)	218.31 (5.545)
S		. Intermediate seats (R.H. and L.H.) (back to flight direction) (TBM700B) T700A2522004	PPI	25.507 (11.570)	218.31 (5.545)
O		. Intermediate seats (R.H. and L.H.) (back to flight direction) (TBM700A) T700A2522004	PPI	25.507 (11.570)	218.31 (5.545)
S		. Rear divan Model 3028 P/N 303437-3 T700A2522000 (TBM700A - Pre-MOD70-023)	ERDA	74.956 (34.000)	231.30 (6.891)
S		. Double chair T700A2521201 (TBM700A - Post-MOD70-023)	PPI	57.319 (26.000)	271.30 (6.891)
O		. Double chair T700A2521230 (TBM700A - Post-MOD70-023)	PPI	57.319 (26.000)	271.30 (6.891)
S		. Rear divan T700B2520018 (TBM700B)	PPI	57.319 (26.000)	271.30 (6.891)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
S		Belt and harness T700A2510007	ANJOU AERONAU- TIQUE	1.786 (0.810)	192.91 or 287.40 (4.900 or 7.300)
		<b>Leather seats - Belts</b>			
O		. Pilot's seat T700A2512000 (TBM700A)	SOCATA	27.56 (12.500)	182.68 (4.640)
O		. Pilot's seat T700A2512082 (TBM700B)	SOCATA	27.56 (12.500)	182.68 (4.640)
O		. Front R.H. seat T700A2512000 (TBM700A)	SOCATA	27.56 (12.500)	182.68 (4.640)
O		. Front R.H. seat T700A2512002 (TBM700A - Post-MOD70-019)	SOCATA	27.56 (12.500)	182.68 (4.640)
O		. Front R.H. seat T700A2512082 (TBM700B)	SOCATA	27.56 (12.500)	182.68 (4.640)
O		. L.H. intermediate seat (back to flight direction) T700A2522000 (TBM700A)	SOCATA	24.25 (11.000)	218.30 (5.545)
O		. L.H. intermediate seat (back to flight direction) T700A2522004	SOCATA	24.25 (11.000)	218.30 (5.545)
O		. R.H. intermediate seat (back to flight direction) T700A2522000 (TBM700A)	SOCATA	24.25 (11.000)	218.30 (5.545)
O		. R.H. intermediate seat (back to flight direction) T700A2522004	SOCATA	24.25 (11.000)	218.30 (5.545)
O		. Rear Divan T700A2522000 (TBM700A - Pre-MOD70-023)	SOCATA	50.71 (23.000)	271.30 (6.891)
O		. Double chair T700A2521201 (TBM700A - Post-MOD70-023)	PPI	57.319 (26.000)	271.30 (6.891)
O		. Double chair T700A2521230 (TBM700A - Post-MOD70-023)	PPI	57.319 (26.000)	271.30 (6.891)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
O		. Double chair, L.H. Seat (TBM700B) T700B2520018	SOCATA	25.35 (11.500)	271.30 (6.891)
O		. Double chair, L.H. Seat (TBM700B) T700B2520015	SOCATA	25.35 (11.500)	271.30 (6.891)
O		. Double chair, R.H. Seat (TBM700B) T700B2520018	SOCATA	25.35 (11.500)	271.30 (6.891)
O		. Double chair, R.H. Seat (TBM700B) T700B2520015	SOCATA	25.35 (11.500)	271.30 (6.891)
		<b>25-60 - Emergency equipment</b>			
A	25019A	Axe	SOCATA	2.425 (1.100)	195.28 (4.960)
A	25020A	First aid kit	SOCATA	3.968 (1.800)	285.43 (7.250)
		<b>25-61 - Emergency locator transmitter</b>			
A		Emergency beacon JE2 or JE2NG (Not valid for U.K., Germany and Austria)	JOLLIET	3.086 (1.400)	311.02 (7.900)
O	0273-25B	ELT KANNAD 406AF Compact in cabin, of which :	SERPE-IESM	2.290 (1.040)	272.95 (6.933)
		. Antenna ANT300		0.330 (0.150)	313.39 (7.960)



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
<b>26 - FIRE PROTECTION</b>					
A	26001A	Portable fire extinguisher unit ( <u>TBM700A</u> ) FH 15 N or H1-10 AIR	AREOFEU  MAIP	4.696 (2.130) 4.266 (1.935)	176.38 (4.480) 176.38 (4.480)
A	26001B	Portable fire extinguisher unit H1-10 AIR or 863520-00	MAIP  L'HOTELLIER	4.266 (1.935) 3.638 (1.650)	192.16 (4.881) 192.16 (4.881)
A	26002D	Engine fire detection system	L'HOTELLIER	1.455 (0.660)	96.06 (2.440)
A	0391-26A	Portable fire extinguisher unit 74-00	AIR TOTAL	4.890 (2.220)	170.11 (4.321)
A	0391-26B	Portable fire extinguisher unit 74-00	AIR TOTAL	4.890 (2.220)	192.16 or 194.16 (4.881 or 4.932)
A	0391-26C	Portable fire extinguisher unit 74-00	AIR TOTAL	4.960 (2.250)	193.80 (4.923)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>27 - FLIGHT CONTROLS</b>			
		<b>27-10 - Roll control</b>			
R		Roll trim actuator 145700.01 or 145700.02	LPMI	1.543 (0.700)	212.60 (5.400)
		<b>27-20 - Yaw control</b>			
R		Rudder trim actuator 145700.01 or 145700.02	LPMI	1.543 (0.700)	395.27 (10.040)
A	27001A	AFC and electric trim control on R.H. control wheel	SOCATA	0.882 (0.400)	157.48 (4.000)
		<b>27-30 - Pitch control</b>			
S		Pitch trim actuator 145400-01 or 145400-02	LPMI	1.213 (0.550)	425.20 (10.800)
		<b>27-50 - Wing flaps (control)</b>			
R		Flap control including :	AVIAC	15.520 (7.040)	218.50 (5.550)
		- Flap motor 6157-1	AVIAC	2.866 (1.300)	216.54 (5.500)
		- Flap actuator 1-5295 / 2-5295 or 1-5297 / 2-5297	AVIAC	1.918 (0.870) 1.830 (0.830)	216.54 (5.500) 220.47 (5.600)
O	27002A	Flap control	LPMI	17.438 (7.910)	218.50 (5.550)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>28 - FUEL SYSTEM</b>			
		<b>28-20 - Fuel supply</b>			
R		Electric boost pump 2003-B	WELDON	3.483 (1.580)	129.92 (3.300)
R		Electric boost pump 2022-B	WELDON	3.483 (1.580)	129.92 (3.300)
R		Electric boost pump 1B9-5	AIRBORNE	4.409 (2.000)	129.92 (3.300)
R		Engine driven fuel pump 1127-01	IN-LHC	1.543 (0.700)	110.24 (2.800)
R		Engine driven fuel pump 1127-01A	IN-LHC	1.543 (0.700)	110.24 (2.800)
R		Engine driven fuel pump 1127-02	IN-LHC	1.543 (0.700)	110.24 (2.800)
R		Fuel sequencer unit E3-003-00	STPI	1.764 (0.800)	125.98 (3.200)
R		Fuel unit 35001C14-1	LE BOZEC	5.512 (2.500)	133.07 (3.380)
R		Fuel unit L88A15-651	INTER- TECHNIQUE	4.586 (2.080)	133.07 (3.380)
O	28001A	A35 fuel sequencer unit	TFE	1.102 (0.500)	125.98 (3.200)
		<b>28-40 - Fuel indication</b>			
R	0158-28B	Fuel gage amplifier (in us gal) 738574-1-0	INTER- TECHNIQUE	1.080 (0.490)	278.74 (7.080)
R		Inboard L.H. gage 768-403 or 762 438.1.0	INTER- TECHNIQUE	0.331 (0.150)	183.07 (4.650)
R		Inboard R.H. gage 768-404 or 762 439.1.0	INTER- TECHNIQUE	0.331 (0.150)	183.07 (4.650)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
R		Intermediate gage      766-976-1 or 762 440.1.0	INTER- TECHNIQUE	0.220 (0.100)	190.94 (4.850)
R		Low level sensor      722-447	INTER- TECHNIQUE	0.100 (0.045)	185.28 (4.706)
R		Outboard gage      766-977-1 or 762 441.1.0	INTER- TECHNIQUE	0.220 (0.100)	190.94 (4.850)
O	0427-28A	Low level sensor      747-971-1-0	ZODIAC/ INTERTECH- NIQUE	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	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>30 - ICE AND RAIN PROTECTION</b>			
S		Deicer, L.H. elevator horn T700A5520015006(920)	SOCATA	3.307 (1.500)	403.15 (10.240)
S		Deicer, R.H. elevator horn T700A5520015007(921)	SOCATA	3.307 (1.500)	403.15 (10.240)
S		Deicer, L.H. horizontal stabilizer T700A3013003000	SOCATA	4.189 (1.900)	398.42 (10.120)
S		Deicer, R.H. horizontal stabilizer T700A3013003001	SOCATA	4.189 (1.900)	398.42 (10.120)
S		Deicer, vertical stabilizer T700A3014003000	SOCATA	3.968 (1.800)	374.02 (9.500)
S		Deicer, inboard L.H. wing T700A3010001002	SOCATA	5.732 (2.600)	173.23 (4.400)
S		Deicer, inboard R.H. wing T700A3010001003	SOCATA	5.732 (2.600)	173.23 (4.400)
S		Deicer, middle L.H. wing T700A3010001004	SOCATA	3.748 (1.700)	173.23 (4.400)
S		Deicer, middle R.H. wing T700A3010001005	SOCATA	3.748 (1.700)	173.23 (4.400)
S		Deicer (Std), outboard L.H. wing T700A3010001006	SOCATA	3.307 (1.500)	173.23 (4.400)
S		Deicer, outboard R.H. wing T700A3010001007	SOCATA	3.307 (1.500)	173.23 (4.400)
S		Dual port distribution valve 1532-10C	LUCAS	2.425 (1.100)	125.98 (3.200)
S		Timer 42E25-2	LUCAS	0.772 (0.350)	177.17 (4.500)
S		Timer 42E25-2A	LUCAS	0.772 (0.350)	177.17 (4.500)
S		Water separator and filter 44E21-2A	LUCAS	1.102 (0.500)	125.98 (3.200)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
O		Deicer, outboard L.H. wing T700A3010012000 (with radar MOD70-0276-00C)	SOCATA	2.646 (1.200)	173.23 (4.400)
		<b>30-40 - Windshield deicing</b>			
S		Windshield heater controller WH 89-10	AIR SYSTEMS	0.992 (0.450)	149.61 (3.800)
S		Windshield heater controller WH 89-10A	AIR SYSTEMS	0.992 (0.450)	149.61 (3.800)
S		Windshield heater controller TWH 93-01	AIR SYSTEMS	0.992 (0.450)	149.61 (3.800)
		<b>30-60 - Propeller deicing</b>			
S		Deicing kit 67-600-2	GOODRICH	1.764 (0.800)	48.43 (1.230)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>31 - INDICATING/RECORDING SYSTEMS</b>			
		<b>31-20 - Independent instruments</b>			
O	31001A	Stop watch Q18-945-22-28-1-LE	THOMMEN	0.419 (0.190)	157.48 (4.000)
O	31002A	Hourmeter 56457-3 (engine running time)	DATCON	0.551 (0.250)	156.30 (3.970)
O	31002B	Hourmeter 56457-3 (flying time)	DATCON	0.551 (0.250)	156.30 (3.970)
		<b>31-50 - Aural warning</b>			
R		Aural warning system T700A3155011000	SOCATA	0.661 (0.300)	183.07 (4.650)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>32 - LANDING GEARS</b>			
		<b>32-10 - Main landing gear</b>			
R		L.H. main landing gear 21135-001-00	ERAM	50.044 (22.700)	200.39 (5.090)
R		L.H. main landing gear 21135-002-00	ERAM	50.044 (22.700)	200.39 (5.090)
R		R.H. main landing gear 21136-001-00	ERAM	50.044 (22.700)	200.39 (5.090)
R		R.H. main landing gear 21136-002-00	ERAM	50.044 (22.700)	200.39 (5.090)
O	0141-32	L.H. main landing gear (As spares only) D23767000	MESSIER DOWTY	51.588 (23.400)	200.39 (5.090)
O	0141-32	R.H. main landing gear (As spares only) D23768000	MESSIER DOWTY	51.588 (23.400)	200.39 (5.090)
		<b>32-20 - Nose landing gear</b>			
R		Nose gear 21130-001-00	ERAM	52.910 (24.000)	93.70 (2.380)
O	0141-32	Nose gear (As spares only) D23766000	MESSIER DOWTY	53.571 (24.300)	93.70 (2.380)
		<b>32-30 - Extension and retraction</b>			
R		Door actuator EC 6230	HRL	1.345 (0.610)	192.91 (4.900)
R		Main locking actuator 08-1480	HRL	13.228 (6.000)	208.07 (5.285)
R		Nose locking actuator 08-1480	HRL	13.228 (6.000)	110.24 (2.800)
R		Hand pump 914-8D27	TELEDYNE	2.326 (1.055)	181.10 (4.600)



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
R	060-32	<b>32-35 - Hydraulic generation</b>  Hydraulic power pack : - up to S/N 10 : 1118-02 or 03  - from S/N 11 to S/N 227 : 1118-03  - from S/N 228 and from S/N 1 (retrofit) : 1118-04	LHC	6.548 (2.970)	84.65 (2.150)
R		<b>32-40 - Wheels and brakes</b>  Brake assembly 030-19100	PARKER	14.991 (6.800)	204.33 (5.190)
R		Main tire 18x5.5-8PR TL	DUNLOP	13.228 (6.000)	204.33 (5.190)
R		Main tire 18x5.5-8/190T	MICHELIN	12.200 (5.534)	204.33 (5.190)
R		Main tire 18x5.5-8PR FLE	GOODYEAR	13.450 (6.101)	204.33 (5.190)
R		Master cylinder 010-07801	PARKER	0.882 (0.400)	145.67 (3.700)
R		Master cylinder 010-07802	PARKER	0.882 (0.400)	145.67 (3.700)
R		Nose tire 5.00x5-6PR	DUNLOP	6.400 (2.903)	89.57 (2.275)
R		Nose tire 5.00-5-10PR TL	MICHELIN	6.000 or 5.600 (2.722 or 2.540)	89.57 (2.275)
R		Nose tire 5.00x5-10-120TL	AVIATOR	5.600 (2.540)	89.57 (2.275)
R		Nose tire 5.00-5-10PR TL	GOODYEAR	6.300 (2.858)	89.57 (2.275)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
R	0408-32	Nose tire 5.00-5-10PR	GOODYEAR	6.834 (3.100)	89.57 (2.275)
R		Nose tire 5.00x5-10-120TL	AVIATOR	5.600 (2.540)	89.57 (2.275)
R		Nose wheel 40-262A	PARKER	2.976 (1.350)	89.57 (2.275)
R		Main wheel (Model 40-270) 040-27000	PARKER	11.023 (5.000)	204.33 (5.190)
R		Parking brake valve 060-01600	PARKER	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	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>33 - LIGHTS</b>			
		<b>33-10 - Instrument panel lighting</b>			
S		Panel lights regulator T700A3310025	SOCATA	Neglig.	/
S		Instrument Lighting regulator T700A3310025	SOCATA	Neglig.	/
S		Postlights (Qty: 6)	WHELEN	Neglig.	/
S		Instruments emergency lighting 2240-3	WEMAC	0.110 (0.050)	181.10 (4.600)
A	33001C	PULSELITE unit 1NC (for landing lights) P/N 1220/2410-2	PRECISE FLIGHT	1.265 (0.574)	202.60 (5.146)
		<b>33-40 - External lighting</b>			
S		L.H. wing inspection light (icing detection) T700A3340012	SOCATA	0.198 (0.090)	151.57 (3.850)
S		Landing lights 4596	GE	0.794 (0.360)	179.13 (4.550)
S		Taxi light assembly A715-1 (4587)	WHELEN	1.102 (0.500)	93.70 (2.380)
S		NAV/Anticollision system :	WHELEN		
S		- Anticollision power supply A413A HDA-DF-28 or A413A HDA-DF-14/28 or A413A HDA-CF-14/28	WHELEN	2.998 (1.360)	204.72 (5.200)
S		- R.H. navigation light assy A600 PG 28 or A600 PG D28	WHELEN	0.507 (0.230)	185.04 (4.700)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
S		- L.H. navigation light assy A600 PR 28 or A600 PR D28	WHELEN	0.507 (0.230)	185.04 (4.700)
O	33002	Halogen landing lights      Q5596	WHELEN	0.794 (0.360)	179.13 (4.550)
		Halogen taxi light              Q5587	WHELEN	1.102 (0.500)	93.70 (2.380)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>34 - NAVIGATION</b>			
		<b>34-11 - Air data systems</b>			
R		Lift transducer 799-5 or 799-8		0.88 (0.400)	173.23 (4.400)
S		Pitot heated probe AN 5812-1	QPL (AIRCRAFT APPLIANCES AND EQUI. LTD)	0.75 (0.340)	200.79 (5.100)
		<u>Pre-MOD70-0335-34 (ESI-2000)</u>			
R		Stand-by altimeter 3A43.22.35F.28.1	THOMMEN	0.90 (0.410)	157.48 (4.000)
R		Stand-by airspeed indicator 5A58.22.30K.28.1	THOMMEN	0.80 (0.363)	172.83 (4.390)
		<u>All</u>			
R		Static reference plug T700A3415017	SOCATA	Neglig.	/
S		Static reference selector TB30 77010000	SOCATA	0.220 (0.100)	157.48 (4.000)
S	0276-00A	Air Data Computer # 1 GDC 74B	GARMIN	2.315 (1.050)	150.24 (3.816)
S	0276-00A	Air Data Computer # 2 GDC 74B	GARMIN	2.315 (1.050)	150.24 (3.816)
O	0335-34D	Electronic Standby Instrument ESI-2000	L-3 Communication Avionics Systems	2.756 (1.250)	154.29 (3.919)
		<b>34-21 - Heading reference system</b>			
S	0276-00A	Attitude and Heading Reference System # 1 GRS 77	GARMIN	3.46 (1.57)	171.77 (4.363)



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>34-28 - Electronic flight instrumentation system</b>			
S	0276-00A	Integrated Flight Deck System G1000 composed of :			
		. PFD1                      GDU 1040A	GARMIN	6.53 (2.96)	155.71 (3.955)
		. PFD2                      GDU 1040A	GARMIN	6.53 (2.96)	155.71 (3.955)
		. MFD                        GDU 1500A	GARMIN	8.66 (3.93)	155.20 (3.942)
		. Engine/Airframe Interface Unit # 1 GEA 71	GARMIN	2.53 (1.15)	150.63 (3.826)
		. Engine/Airframe Interface Unit # 2 GEA 71	GARMIN	2.53 (1.15)	150.63 (3.826)
		. Integrated Avionics Unit # 1 GIA 63W	GARMIN	7.21 (3.27)	149.37 (3.794)
		. Integrated Avionics Unit # 2 GIA 63W	GARMIN	7.21 (3.27)	149.37 (3.794)
		. MFD remote controller    GCU 475	GARMIN	0.82 (0.37)	157.83 (4.009)
A	0226-00B	G1000 Synthetic Vision System	GARMIN	/	/
A	0222-00B	Electronic checklists technical content	GARMIN	/	/
		<b>34-31 - Marker</b>			
S		MARKER antenna            DM N27-3	DORNE & MARGOLIN	0.75 (0.340)	129.92 (3.300)
S		Receiver (integrated in the GMA 1347D dual audio systems : refer to ATA 23)		/	/

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>34-41 - Stormscope</b>			
A	34056C	Stormscope, G1000 coupled WX500	BFG	4.94 (2.240)	232.28 (5.900)
		. Antenna NY163	BFG	0.84 (0.380)	311.02 (7.900)
		. Processor WX500	BFG	2.27 (1.030)	255.91 (6.500)
		<b>34-42 - Weather radar</b>			
A	0276-00C	Weather radar, G1000 coupled GWX 68		9.36 (4.25)	173.46 (4.406)
		<b>34-43 - Radioaltimeter</b>			
A	34037M	Radioaltimeter KRA 405B G1000 coupled, without KNI 415 or aural warning, of which :		5.73 (2.600)	209.37 (5.318)
		. Transceiver KRA 405B	HONEYWELL	2.80 (1.270)	231.18 (5.872)
		. Antennas (Qty 2) DM 19-2-1	DORNE & MARGOLIN	0.40 (0.180)	182.09 and 205.83 (4.625 and 5.228)
A	0270-34B	Radioaltimeter RA4500 G1000 coupled, of which :		2.50 (1.134)	220.47 (5.600)
		. Transceiver RA 4500	FREEFLIGHT	1.90 (0.862)	228.00 (5.812)
		. Transmitting antenna S67-2002	SENSOR SYSTEMS	0.30 (0.136)	182.09 (4.625)
		. Receiving antenna S67-2002	SENSOR SYSTEMS	0.30 (0.136)	205.83 (5.228)
		<b>34-44 - Traffic advisory system</b>			
A	0276-00F	G1000 TAWS system	GARMIN	/	/



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	0258-00C	TAS system GTS 820, G1000 coupled, of which :		22.53 (10.220)	177.68 (4.513)
		. Processor GTS 820	GARMIN	9.92 (4.500)	143.11 (3.635)
		. Power amplifier / low noise amplifier GPA 65	GARMIN	1.90 (0.860)	221.42 (5.624)
		. Antenna (upper fuselage) GA 58	GARMIN	0.79 (0.360)	230.71 (5.860)
		. Antenna (under fuselage) GA 58	GARMIN	0.79 (0.360)	260.63 (6.620)
		<b>34-51 - NAV 1 installation</b>			
S		GS-NAV VHF antenna DM N4-17	DORNE & MARGOLIN	3.31 (1.500)	401.57 (10.200)
S		GS-NAV VHF antenna DM N4-17N	DORNE & MARGOLIN	3.31 (1.500)	401.57 (10.200)
S		Receiver (integrated in the GIA 63W Integrated Avionics Unit # 1 : refer to ATA 34-28)		/	/
		<b>34-52 - NAV 2 installation</b>			
S		Receiver (integrated in the GIA 63W Integrated Avionics Unit # 2 : refer to ATA 34-28)		/	/
		<b>34-53 - Transponder</b>			
S	0276-00A	Transponder # 1 GTX 33	GARMIN	3.87 (1.75)	149.65 (3.801)
		Mode S non diversity			
		Antenna KA 61	GARMIN	0.40 (0.18)	193.22 (4.908)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)	
A	0276-00D	Transponder # 1 Mode S diversity	GTX 33D	GARMIN	4.12 (1.87)	149.65 (3.801)
		Antenna (under fuselage)	KA 61	GARMIN	0.40 (0.18)	150.08 (3.812)
		Antenna (upper fuselage)	KA 61	GARMIN	0.40 (0.18)	193.22 (4.908)
A	0276-00E	Transponder # 2 Mode S non diversity	GTX 33	GARMIN	3.87 (1.75)	149.65 (3.801)
		Antenna	KA 61	GARMIN	0.40 (0.18)	193.22 (4.908)
<b>34-54 - Automatic Direction Finder (ADF)</b>						
A	0276-00H	ADF RA 3500 system (European countries only) , of which :		BECKER	7.61 (3.45)	214.65 (5.452)
		. Receiver P/N 0505.757-912	RA3502	BECKER	2.21 (1.000)	/
		. Antenna P/N 0832.601-912	AN3500	BECKER	3.59 (1.630)	/
		. RMI converter P/N 0856.010-912	AC3504	BECKER	1.32 (0.600)	/
<b>34-55 - DME installation</b>						
A	34014F	DME KN63, G1000 coupled		HONEYWELL	2.80 (1.27)	232.28 (5.900)
		Antenna	KA 61	HONEYWELL	0.40 (0.18)	238.82 (6.066)
<b>34-57 - Global Positioning System (GPS)</b>						
S	0276-00A	GPS/WAAS antenna GA 36		GARMIN	0.48 (0.220)	204.84 (5.203)
S	0276-00A	GPS/WAAS + XM antenna GA 37		GARMIN	0.55 (0.250)	204.84 (5.203)
<b>34-62 - Multifunction display</b>						
A	0276-00G	G1000 Chartview function		GARMIN	/	/

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>35 - OXYGEN</b>			
S		Generator 117024-02	PURITAN	0.948 (0.430)	180.31 (4.580) 209.84 (5.330) 257.09 (6.530)
S		Mask 174554 / 174555	PURITAN	0.441 (0.200)	180.31 (4.580) 209.84 (5.330) 257.09 (6.530)
S	0244-35	Mask 174095-87 (as spares for Mask 174554)	PURITAN	0.441 (0.200)	180.31 (4.580) 209.84 (5.330) 257.09 (6.530)
S	0276-00I	Upgraded chemical oxygen system		/	/
O	35001C	Gaseous oxygen system (30000 ft)	EROS/INTER TECHNIQUE	22.930 (10.400)	178.19 (4.526)
O	35001D	Gaseous oxygen system (31000 ft)	EROS/INTER TECHNIQUE	24.692 (11.200)	178.19 (4.526)



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>52 - DOORS</b>			
A	52002A	"Pilot" door ( <u>TBM700B</u> )	SOCATA	44.092 (20.000)	171.26 (4.350)
A	0342-52	Additional landing gear doors	SOCATA	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	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>56 - WINDOWS</b>			
O	56001B	Deiced R.H. windshield	SPS	Δ 1.764 (Δ 0.800)	158.27 (4.020)
R	56001B	Deiced R.H. Windshield (Std for Russian airplanes)	SPS	Δ 1.764 (Δ 0.800)	158.27 (4.020)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>57 - WINGS</b>			
S	57001A	Utilization on runways covered with melting snow	SOCATA	Δ -7.716 (Δ -3.500)	200.00 (5.080)
R	57001A	Utilization on runways covered with melting snow (Std for Russian airplanes)	SOCATA	Δ -7.716 (Δ -3.500)	200.00 (5.080)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>61 - PROPELLER</b>			
		<b>61-10 - Propeller assembly</b>			
S		Propeller (4-blade) HC-E4N.3 / E 9083 S (K)	HARTZELL	153.220 (69.500)	43.11 (1.095)
		<b>61-20 - Controls</b>			
R		Overspeed governor      A210632	WOODWARD	2.734 (1.240)	59.06 (1.500)
S		Propeller governor      8210.007	WOODWARD	2.646 (1.200)	59.06 (1.500)



S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>71 - POWER PLANT</b>			
R		Turboprop engine      PT6 A-64	P & W CANADA	496.30 (225.00)	79.72 (2.025)
S		Silentblocks (Qty 4)      95007-16	BARRY	2.921 (1.325)	79.72 (2.025)
		<b>71-60 - Air inlet</b>			
R		Inertia ice separator actuator 148600-09	LPMI	1.720 (0.780)	62.99 (1.600)
R		Inertia ice separator actuator 148600-09A	LPMI	1.720 (0.780)	62.99 (1.600)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>77 - ENGINE INDICATING</b>			
R		Compressor turbine tacho-generator (Ng) MIL-G-26611C GEU-7/A	QPL (AIRCRAFT APPLIANCES AND EQUI. LTD)	0.981 (0.445)	108.27 (2.750)
R		Propeller tacho-generator (Np) P/N 32005-007 MIL-G-26611 GEU-7/A	QPL (AIRCRAFT APPLIANCES AND EQUI. LTD)	0.981 (0.445)	55.12 (1.400)
R		Torque transducer CZ 52E8-G or 8107.200.00.10	AUXITROL/ SAGEM MORS/SEXTANT	0.452 (0.205) 0.463 (0.210)	55.12 (1.400) 53.54 (1.360)
		<b>77-12 - Fuel management</b>			
S		Fuel flow transmitter 660 526AS	SHADIN	0.683 (0.310)	110.20 (2.799)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
		<b>79 - LUBRICATION</b>			
		<b>79-20 - Distribution</b>			
R		Oil cooler L8538233	LORI	10.472 (4.750)	90.55 (2.300)
		<b>79-30 - Indicating</b>			
R	79001A	Oil pressure transmitter 8107-400-00-10	THALES	0.441 (0.200)	106.30 (2.700)
A	0169-79A	Chip detection system (2 detectors)	PWC	Neglig.	/
A	0169-79B	Chip detection system (1 detector)	PWC	Neglig.	/
A	0169-79D	Chip detection system (1 or 2 detectors) interfaced with G1000 system (capability) (Post-MOD70-0169 Versions A et B)	PWC	Neglig.	/
A	0169-79E	Chip detection system (1 detector) interfaced with G1000 system	PWC	Neglig.	/
A	0169-79F	Chip detection system (2 detectors) interfaced with G1000 system	PWC	Neglig.	/

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## **7.1 - GENERAL**

This Section provides description and operation of the TBM 700 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 G1000 integrated flight deck are detailed in the "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 700, No. 190-01247-00, or any later version as applicable. 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 pilot's operating handbook.

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## **7.2 - AIRFRAME**

The TBM 700 is a six / seven-place, low wing airplane. The structure is a semi-monocoque all-metal construction and is equipped with a retractable tricycle landing gear.

### TBM700A :

The pressurized cabin is equipped, on the left side of fuselage, with a two-piece door comprising integrated stairs allowing pilot and passengers boarding. The occupants have access to cockpit and to rear seats through a central aisle.

### TBM700B :

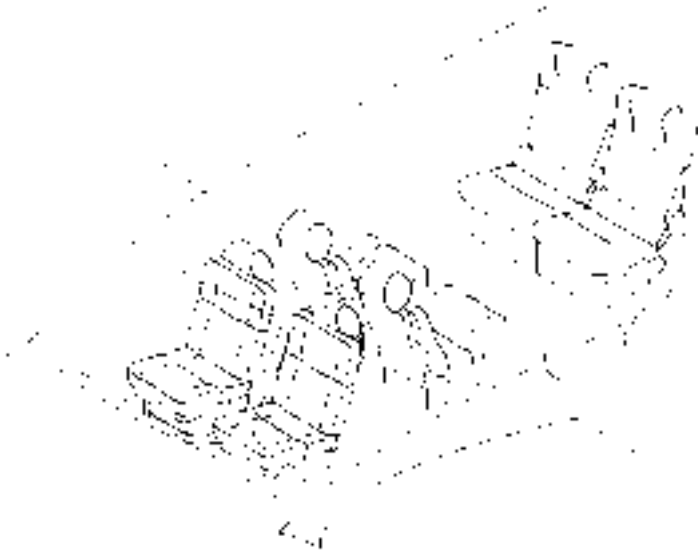
The pressurized cabin is equipped, on the left side of fuselage, with a "wide" one-piece door and folding stairs comprising a hand rail allowing pilot and passengers boarding. The occupants have access to cockpit and to rear seats through a central aisle.

A "pilot" door (if installed) located forward of the cabin on the left side allows to gain access to the cockpit by means of folding stairs.

### TBM700A & B :

The cabin rear part is a baggage compartment.

The non-pressurized section located between the firewall and pressure bulkhead is a secondary baggage compartment ; it is accessible through a door located on the left side of fuselage.



1-11-1100000000000000

Figure 7.2.1 - CABIN ARRANGEMENT

**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.

**AILERONS, SPOILERS AND PITCH 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 knob attached on the trailing edge of L.H. aileron is electrically activated by a trim knob, through an actuator.

**WING FLAPS** (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°).

The flap control knob is protected by a casing to avoid accidental operation.

A monitoring device interrupts flaps movement as soon as a deflection dissymmetry is detected.

**Wings characteristics :**

Area . . . . .	193.75 sq. ft (18 m <sup>2</sup> )
Wing loading . . . . .	34 lb/sq.ft (165.8 kg / m <sup>2</sup> )
Root chord at y = 2.13 ft (0.650 m) . . . . .	5.79 ft (1.765 m)
Tip chord . . . . .	3.67 ft (1.120 m)
Mean aerodynamic chord at y = 9.16 ft (2.793 m) . . . . .	4.95 ft (1.510 m)
Rigging angle to fuselage horizontal datum . . . . .	2°
Sweep-angle (at 25 % chord) . . . . .	0°
Dihedral (at datum plane) . . . . .	6.5°
Aspect ratio (platform reference) . . . . .	8.216
Taper ratio . . . . .	0.608
Airfoil section (at wing root) . . . . .	RA 16-43
Airfoil section (at wing tip) . . . . .	RA 13.3-43
Twist . . . . .	0°

**Aileron - spoilers characteristics :**

Global aileron area (including trim tab) . . . . .	9.65 sq.ft (0.897 m <sup>2</sup> )
Aileron trim tab area . . . . .	0.78 sq.ft (0.072 m <sup>2</sup> )
Spoiler area . . . . .	1.80 sq.ft (0.167 m <sup>2</sup> )

**Flaps characteristics :**

Type . . . . .	Single-slotted, rotational
Global flap area . . . . .	40.68 sq.ft (3.780 m <sup>2</sup> )

- 1) Geared motor
- 2) Internal actuator
- 3) Intermediate bearings
- 4) Wing flap
- 5) External actuator
- 6) Rods
- 7) Control selector

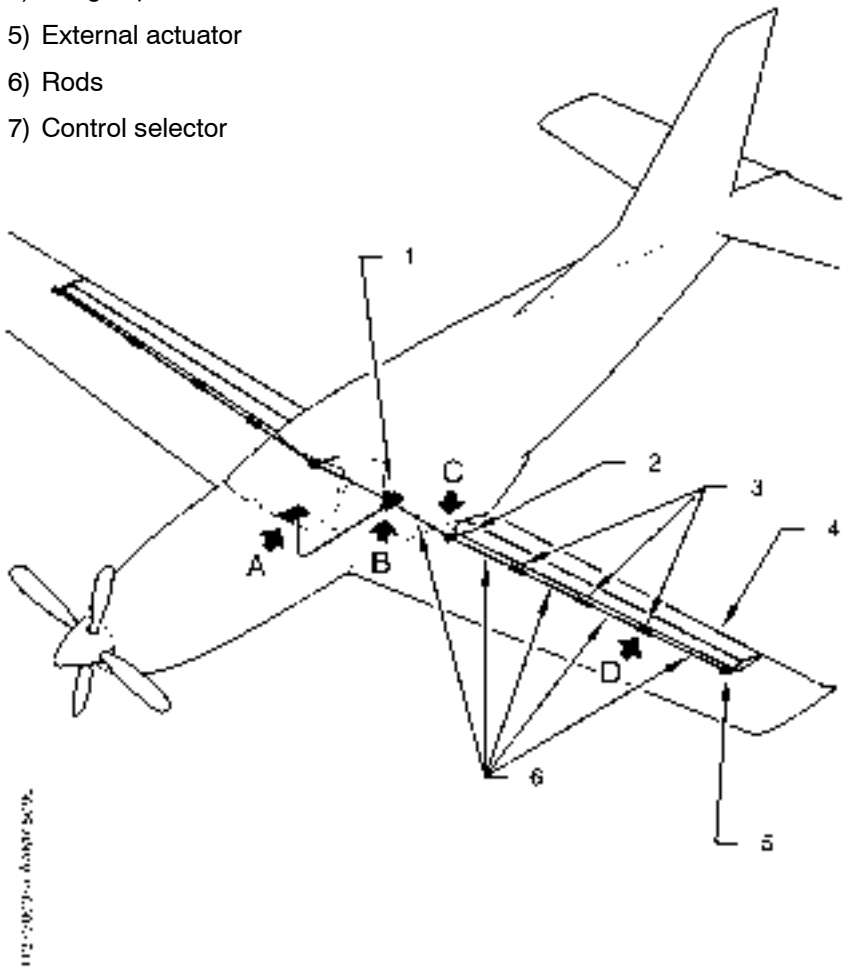


Figure 7.2.2 (1/2) - WING FLAPS

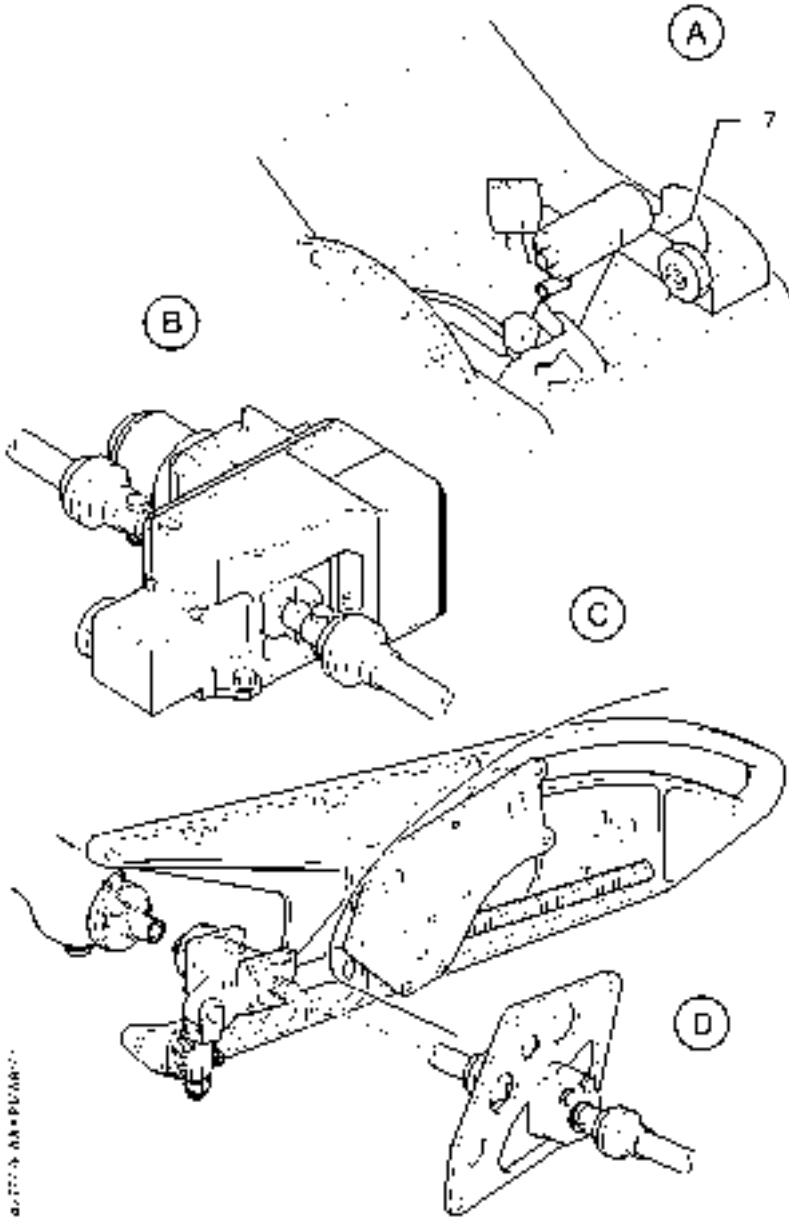


Figure 7.2.2 (2/2) - WING FLAPS



## 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.

### Horizontal stabilizer characteristics :

Overall span	16.36 ft (4.988 m)
Global area	52.52 sq.ft (4.879 m <sup>2</sup> )
Chord	3.89 ft (1.186 m)
Tip chord	2.60 ft (0.795 m)
Mean aerodynamic chord at y = 3.76 ft (1.147 m)	3.26 ft (0.995 m)
Airfoil section	NACA 64 <sub>2</sub> -A415 modified
Dihedral	6.5°
Rigging angle (leading edge up)	0.5°
Aspect ratio	5.034
Elevator global area (including trim tabs)	21.76 sq.ft (2.022 m <sup>2</sup> )
Elevator trim tab area (right datum plane)	3.47 sq.ft (0.322 m <sup>2</sup> )

### Vertical stabilizer characteristics :

Global area	33.28 sq.ft (3.092 m <sup>2</sup> )
Construction root chord	6.95 ft (2.120 m)
Reference tip chord	2.54 ft (0.775 m)
Mean aerodynamic chord	5.08 ft (1.551 m)
Construction airfoil section	NACA 63 <sub>1</sub> -A012 modified
Sweep angle (at leading edge)	45°
Aspect ratio	1.481
Rudder area (including trim tab)	11.87 sq.ft (1.103 m <sup>2</sup> )
Rudder trim tab area	1.36 sq.ft (0.126 m <sup>2</sup> )

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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 (Figure 7.3.2)

The upper panel located at the top part of the windshield, contains electrical generation control panels, engine starting, ancillary electrical systems, MASTERS switches and the "FUEL" control panel.

Rearwards of upper panel, the central part of cockpit overhead panel provides loud-speakers, a warning buzzer and cockpit floodlight.

#### Instrument panel (Figure 7.3.1)

The instrument panel consists of the G1000 integrated flight deck composed of three screens [two Primary Flight Displays (PFD) and one Multi-Function Display (MFD)] – refer to the "GARMIN" G1000 Cockpit Reference Guide for detailed description. Apart from the G1000 system, equipment listed below complete the instrument panel.

- Left area instrument panel includes (Figures 7.3.3 or 7.3.3A) :
  - Pre-MOD70-0335-34 (ESI-2000)
    - . on top : stand-by airspeed indicator and stand-by attitude indicator,
    - . at bottom : deicing controls and indicators, suction gage, NORMAL/MASK inverter, ELT remote control switch, landing gear control panel, parking brake control and left station control wheel.
  - Post-MOD70-0335-34 (ESI-2000)
    - . on top : electronic stand-by indicator,
    - . at bottom : deicing controls and indicators, NORMAL/MASK inverter, ELT remote control switch, landing gear control panel, parking brake control and left station control wheel.
- All
- Central area instrument panel includes (Figures 7.3.4 or 7.3.4A) :
  - Pre-MOD70-0335-34 (ESI-2000)
    - . on top : surmounted by the stand-by compass, stand-by altimeter and AFCS control unit,

Post-MOD70-0335-34 (ESI-2000)

. on top : surmounted by the stand-by compass, AFCS control unit,

All

. at bottom : GCU 475 control unit and outflow valve controller.

- Right area instrument panel includes (Figure 7.3.5) :
  - . on top : locations for optional equipment,
  - . at bottom : "ECS" control panel (partial), alternate static source selector, hour meter 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 on 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 (if installed).

**Pedestal console** (Figure 7.3.6)

The pedestal console, under the GCU 475 control unit, comprises flaps controls, pitch trim tab control wheel, aileron trim switch, engine controls and fuel tank selector.

**Circuit breakers panel** (Figures 7.3.7 and 7.8.3)

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 (red) and Caution (yellow) messages appear on the GDU 1500 MFD CAS display to alert crew about monitored systems discrepancies. As a message appears, an aural tone is heard. Refer to the GARMIN G1000 Cockpit Reference 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 aural tones.

**Aural warnings** (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 or the buzzer installed in cockpit overhead panel.

The aural warnings consist of :

- the aural warning box,
- the buzzer and loud-speakers.

The system uses :

- the stall warning horn,
- the VMO alarm,
- the landing gear control unit,
- the flap geared motor.

**Aural warning box**

The aural warning box consists of a box including logic circuits, which create the signals heard in the aural warning loud-speakers.

According to the airplane configuration, different signals are produced by the logic circuits :

- gear up and idle → high-pitched sound
- gear up and extended flaps → high-pitched sound
- stall → low-pitched sound
- gear up, idle and stall → alternate high-pitched and low-pitched sounds
- gear up, extended flaps and stall → alternate high-pitched and low-pitched sounds

The aural warning box is fixed under cabin floor, on L.H. side, between frames C5 and C6.

It is electrically supplied by "ESS BUS 2" bar and protected by "AURAL WARN" circuit breaker.

### **Cockpit overhead panel** (Figure 7.3.2)

This panel includes following elements :

- the loud-speaker of GMA # 1,
- the loud-speaker of GMA # 2,
- the VMO alarm buzzer,
- the "HORN TEST" knob,
- the emergency lighting rheostat.

It is attached to the cabin upper part between frames C6 and C7.

The VMO alarm buzzer is electrically supplied by "ESS BUS 2" bar and protected by "AURAL WARN" circuit breaker and the emergency lighting rheostat is electrically supplied by "BATT BUS" bar and protected by "PANEL EMER" circuit breaker.

### **Aural warning operation**

The GMA # 1 and # 2 audio control panels receive signals from the aural warning box. According to the airplane configuration, these signals are low-pitched and / or high-pitched.

The "HORN TEST" knob allows to test the correct operation of aural warnings :

- Set the "SOURCE" selector to BAT or to GPU.
- Set the "AVIONICS" MASTER switch to ON.
- Push and hold the "HORN TEST" knob :
  - . the VMO buzzer emits "bips",
  - . the loud-speakers emit alternate low-pitched and high-pitched sounds.
- Release the knob to stop the alarms.

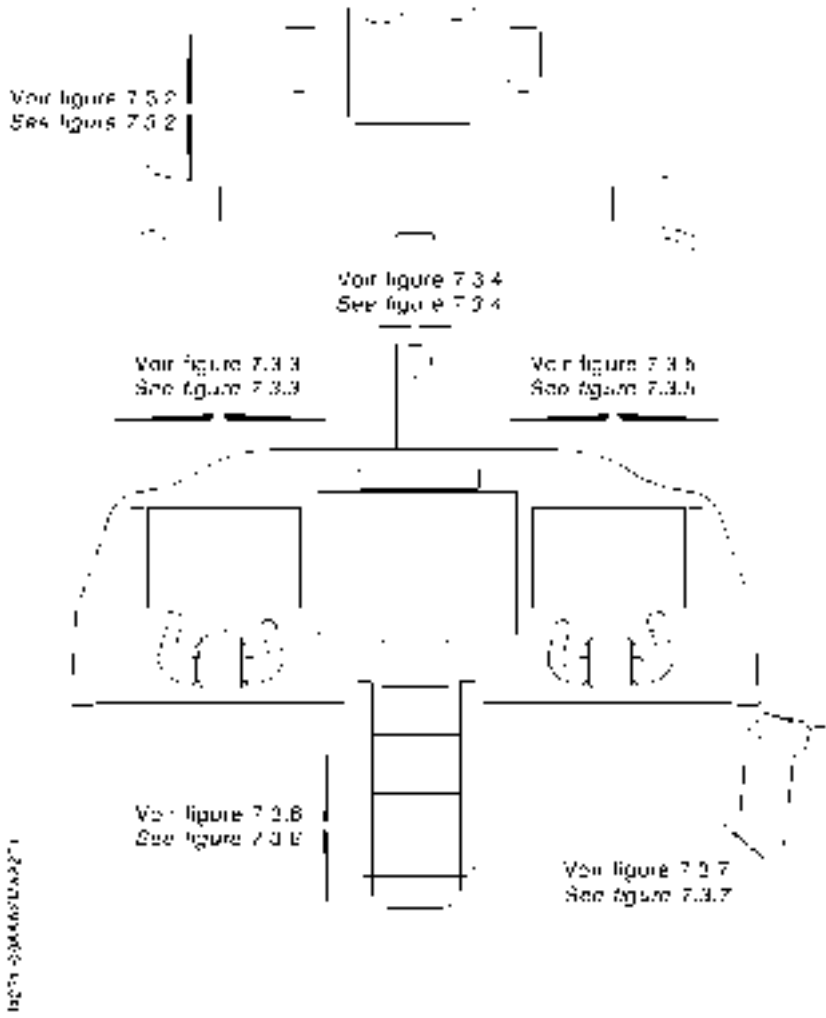
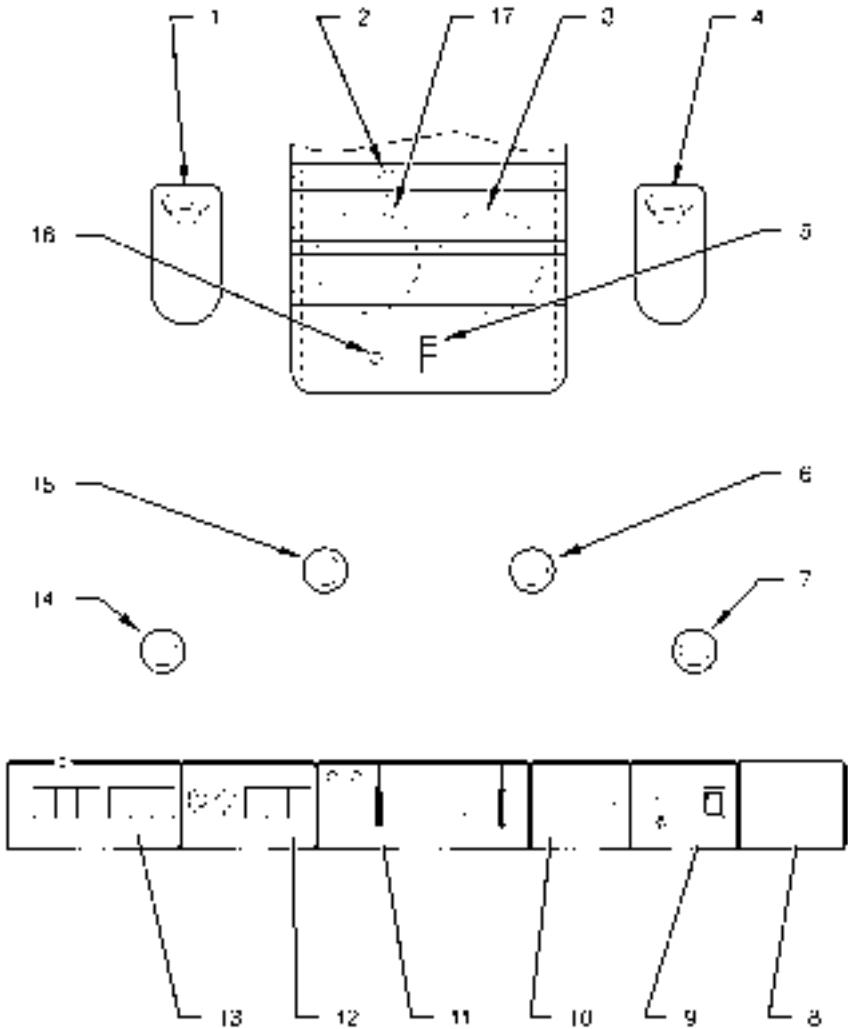


Figure 7.3.1 - INSTRUMENT PANEL ASSEMBLY  
(Typical arrangement)

- 1) L. H. instrument panel emergency lighting
- 2) Buzzer ( $V_{MO}$  alarm)
- 3) Loud-speaker of GMA # 2
- 4) R.H. instrument panel emergency lighting
- 5) Cockpit floodlight switches (rheostats)
- 6) R.H. air outlet (up to S/N 87)
- 7) R.H. cockpit floodlight
- 8) MASTERS controls ("AVIONICS" and "AP TRIMS")
- 9) "FUEL" control panel (Figure 7.7.3A)
- 10) "ENGINE START" switches (Figure 7.6.3)
- 11) "ELECTRIC POWER" switches (Figure 7.8.4)
- 12) "INT LIGHTS" internal lighting switches (Figure 7.8.6)
- 13) "EXT LIGHTS" external lighting switches (Figure 7.8.5)
- 14) L.H. cockpit floodlight
- 15) L.H. air outlet (up to S/N 87)
- 16) "HORN TEST" aural warning test knob
- 17) Loud-speaker of GMA # 1

Figure 7.3.2 (1/2) - UPPER PANEL AND COCKPIT OVERHEAD PANEL  
**Valid S / N 24, 26, 27, 29 to 32, 34, 36 to 9999 plus airplanes  
equipped as a retrofit with modification Nr MOD 70-019-25**





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Figure 7.3.2 (2/2) - UPPER PANEL AND COCKPIT OVERHEAD PANEL  
**Valid S / N 24, 26, 27, 29 to 32, 34, 36 to 9999 plus airplanes  
 equipped as a retrofit with modification Nr MOD 70-019-25**

- 1) L.H. GMA 1347 audio panel
- 2) General alarm red and amber indicators
- 3) GDU 1040 PFD1
- 4) Stand-by airspeed indicator
- 5) Stand-by attitude indicator
- 6) Landing gear configuration and control panel (Figure 7.5.1)
- 7) Parking brake control (Figure 7.5.6)
- 8) Left station control wheel tube
- 9) Deicing control and check panel (Figure 7.13.1)
- 10) L.H. station rudder pedals adjusting handle
- 11) Left station reception-micro jacks
- 12) Electric pitch trim control
- 13) Maps reading tablet
- 14) Electric rudder trim control
- 15) "AP / DISC TRM INT" red push-button
- 16) Flight conditions and instruction placard
- 17) Adjustable air outlet
- 18) Suction indicator
- 19) ELT remote control switch
- 20) Oxygen mask microphone switch (Figure 7.10.1)

Figure 7.3.3 (1/2) - LEFT INSTRUMENT PANEL  
Pre-MOD70-0335-34 (ESI-2000)

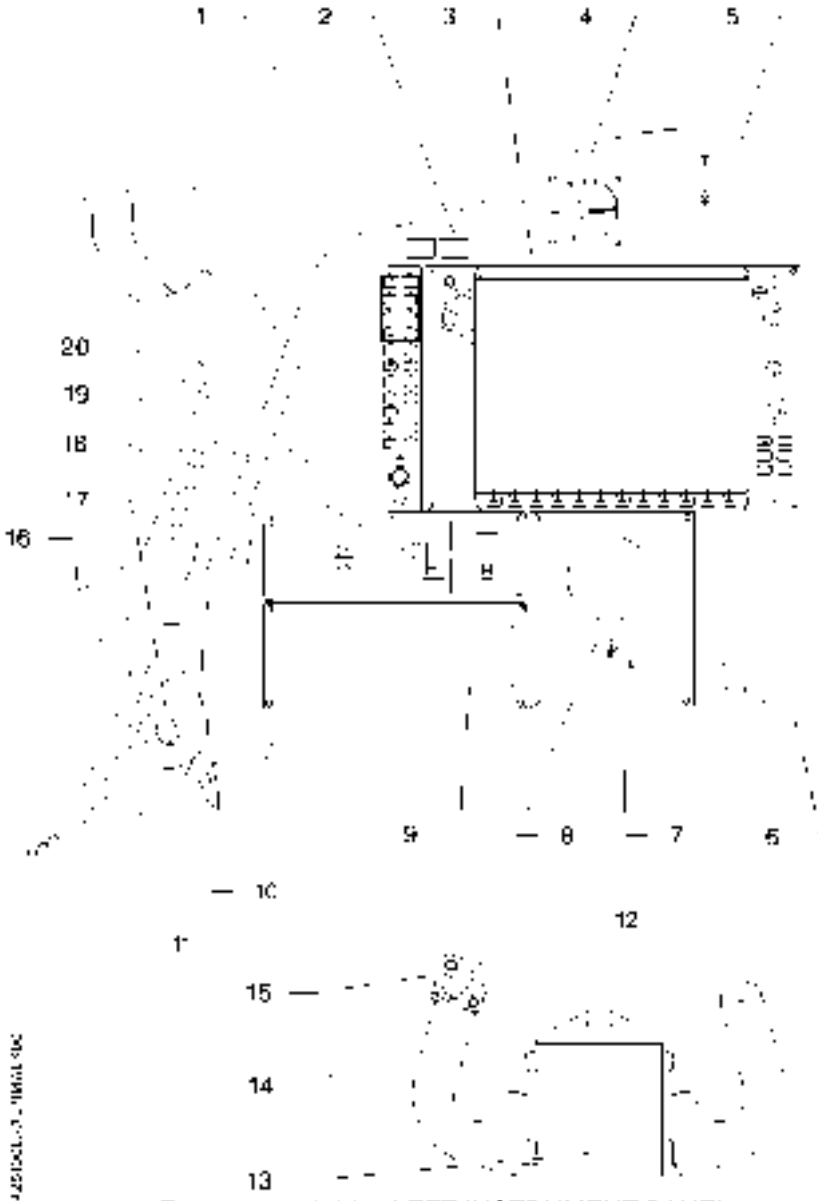


Figure 7.3.3 (2/2) - LEFT INSTRUMENT PANEL  
(Typical arrangement)  
Pre-MOD70-0335-34 (ESI-2000)

- |  |   |
|--|---|
| 1) L.H. GMA 1347 audio panel                                   | 10) Left station reception-micro jacks            |
| 2) General alarm red and amber indicators                      | 11) Electric pitch trim control                   |
| 3) GDU 1040 PFD1   | 12) Maps reading tablet                           |
| 4) Electronic Stand-by indicator                               | 13) Electric rudder trim control                  |
| 5) Landing gear configuration and control panel (Figure 7.5.1) | 14) "AP / DISC TRM INT" red push-button           |
| 6) Parking brake control (Figure 7.5.6)                        | 15) Flight conditions and instruction placard     |
| 7) Left station control wheel tube                             | 16) Adjustable air outlet                         |
| 8) Deicing control and check panel (Figure 7.13.1)             | 17) ELT remote control switch                     |
| 9) L.H. station rudder pedals adjusting handle                 | 18) Oxygen mask microphone switch (Figure 7.10.1) |

Figure 7.3.3A (1/2) - LEFT INSTRUMENT PANEL  
Post-MOD70-0335-34 (ESI-2000)

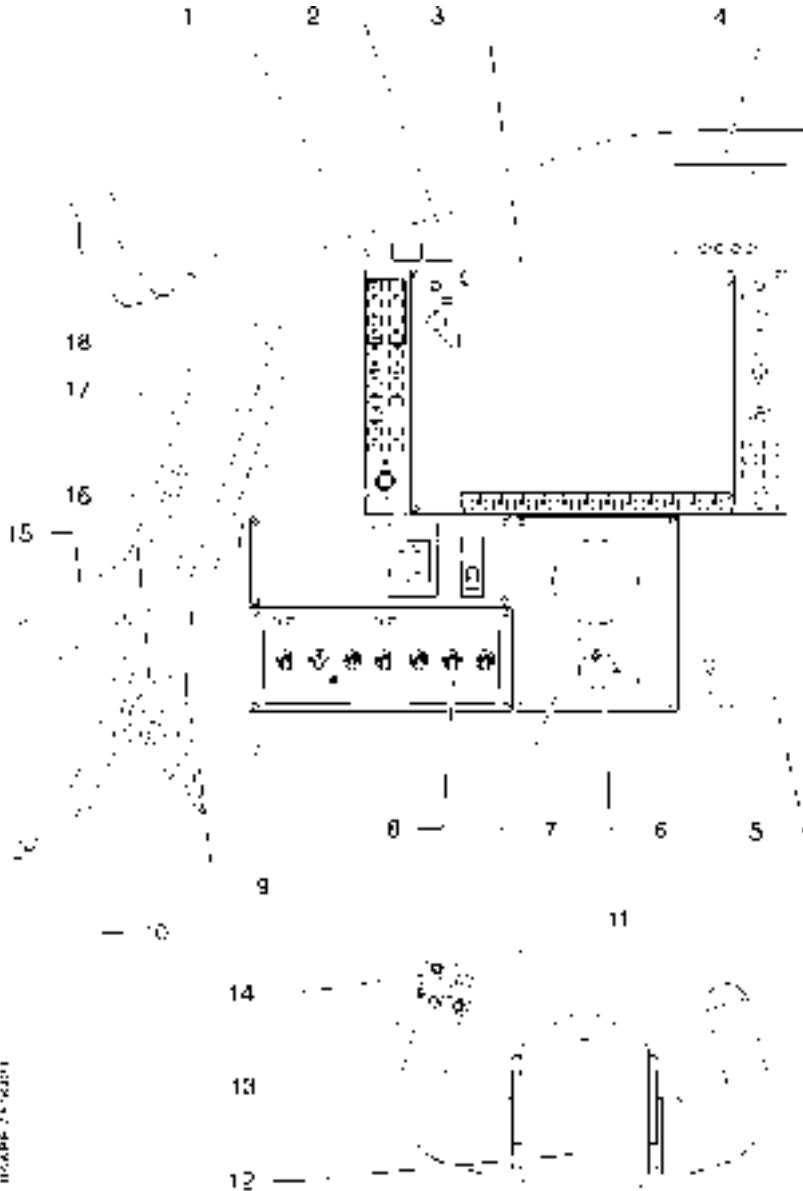


Figure 7.3.3A (2/2) - LEFT INSTRUMENT PANEL  
(Typical arrangement)

Post-MOD70-0335-34 (ESI-2000)

- 1) Stand-by altimeter
- 2) Stand-by compass
- 3) GMC 710 AFCS mode controller
- 4) Registration
- 5) Cabin pressurization control panel (Figure 7.9.2)
- 6) GCU 475 remote controller
- 7) GDU 1500 MFD

Figure 7.3.4 (1/2) - CENTRAL INSTRUMENT PANEL  
Pre-MOD70-0335-34 (ESI-2000)

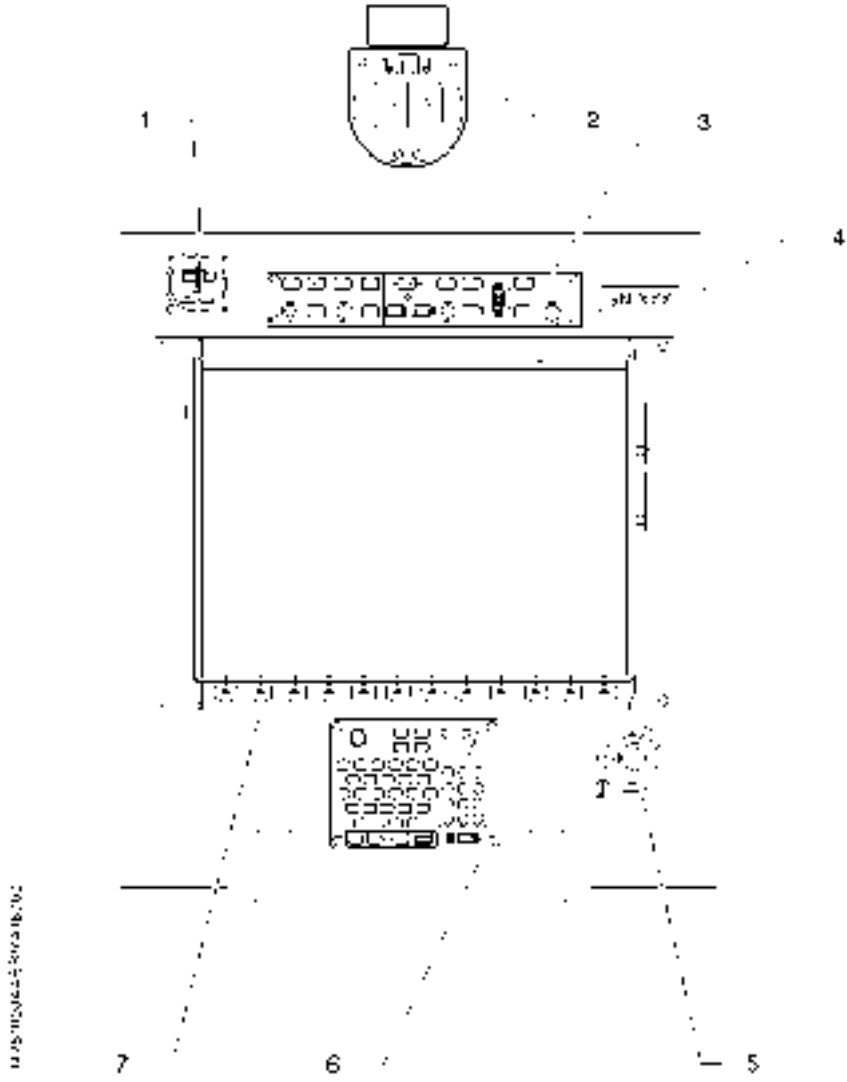


Figure 7.3.4 (2/2) - CENTRAL INSTRUMENT PANEL  
(Typical arrangement)  
Pre-MOD70-0335-34 (ESI-2000)

- 1) Stand-by compass
- 2) GMC 710 AFCS mode controller
- 3) Registration
- 4) Cabin pressurization control panel (Figure 7.9.2)
- 5) GCU 475 remote controller
- 6) GDU 1500 MFD

Figure 7.3.4A (1/2) - CENTRAL INSTRUMENT PANEL  
Post-MOD70-0335-34 (ESI-2000)



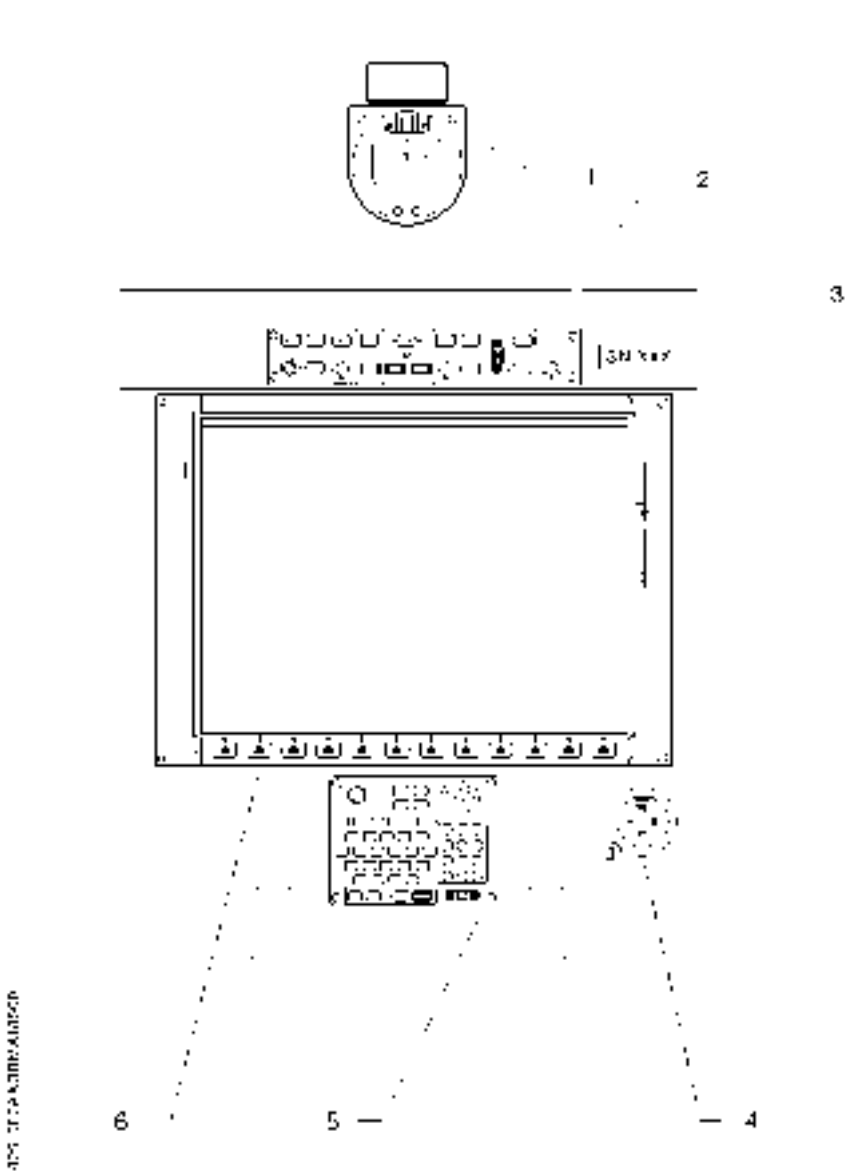


Figure 7.3.4A (2/2) - CENTRAL INSTRUMENT PANEL  
(Typical arrangement)  
Post-MOD70-0335-34 (ESI-2000)

- 1) GDU 1040 PFD2
- 2) R.H. GMA 1347 audio panel
- 3) Right station control wheel tube
- 4) Crew music
- 5) Adjustable air outlet
- 6) Right station reception-micro jacks
- 7) Hour meter
- 8) R. H. station rudder pedals adjusting handle
- 9) Circuit breakers panel postlight
- 10) Servicing plug
- 11) Cabin emergency air control ("RAM AIR" control knob)
- 12) Static source selector
- 13) "ECS" air conditioning control panel (Figure 7.9.2)
- 14) Electric pitch trim control
- 15) Electric rudder trim control
- 16) Maps reading tablet
- 17) "AP / DISC TRM INT" red push-button

Figure 7.3.5 (1/2) - RIGHT INSTRUMENT PANEL

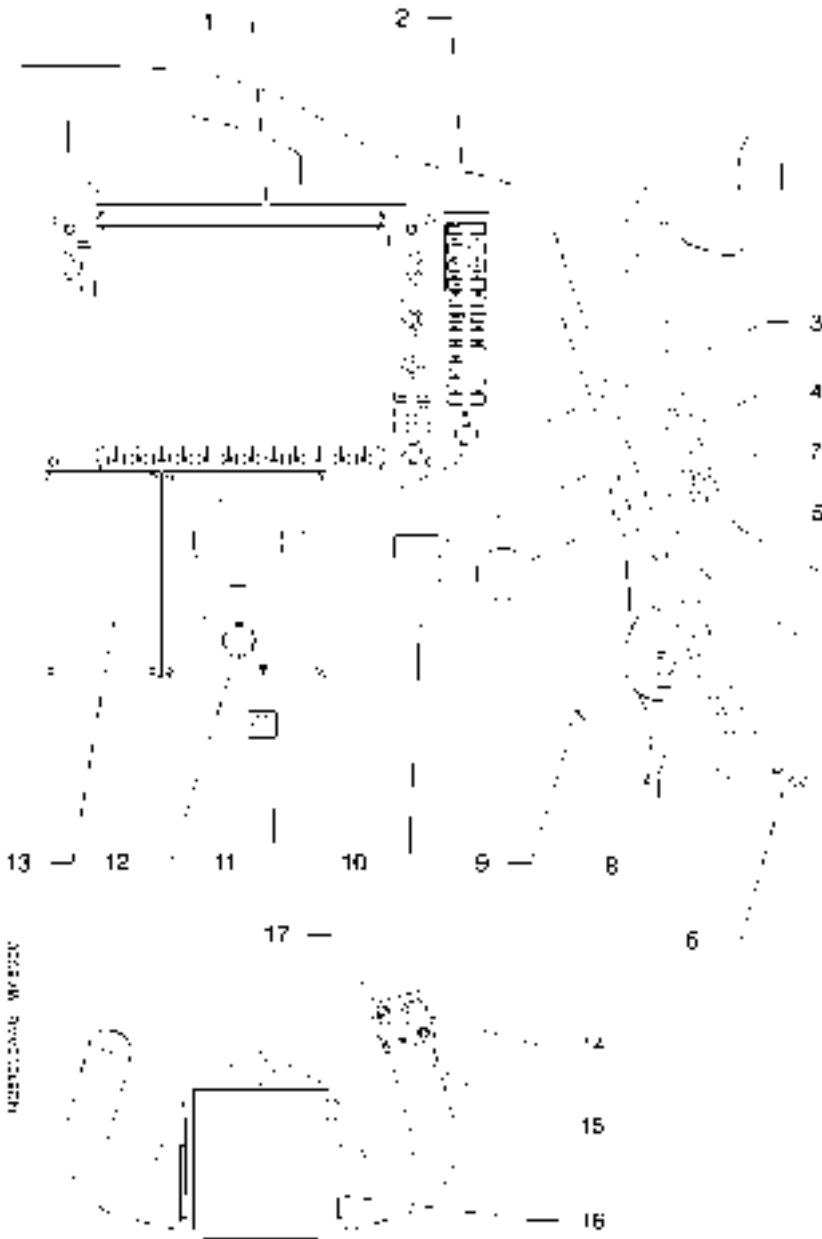


Figure 7.3.5 (2/2) - RIGHT INSTRUMENT PANEL  
(Typical arrangement)

- 1) Propeller governor lever
- 2) Power lever
- 3) "PROP O' SPEED TEST" push-button
- 4) Flaps control
- 5) Condition lever
- 6) Levers friction adjustment
- 7) Emergency fuel control
- 8) Manual fuel tank selector (Figure 7.7.2A)
- 9) Roll trim tab control
- 10) Pitch trim tab control
- 11) Lock for access door to landing gear emergency pump (Figure 7.5.2)

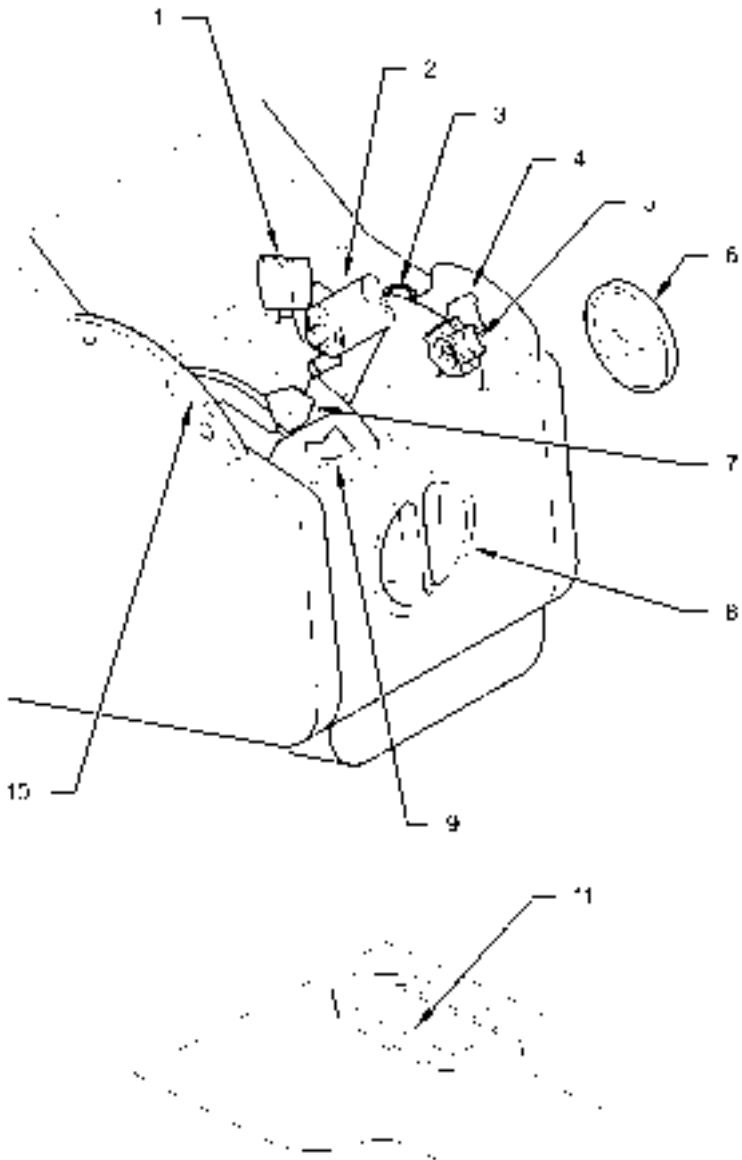
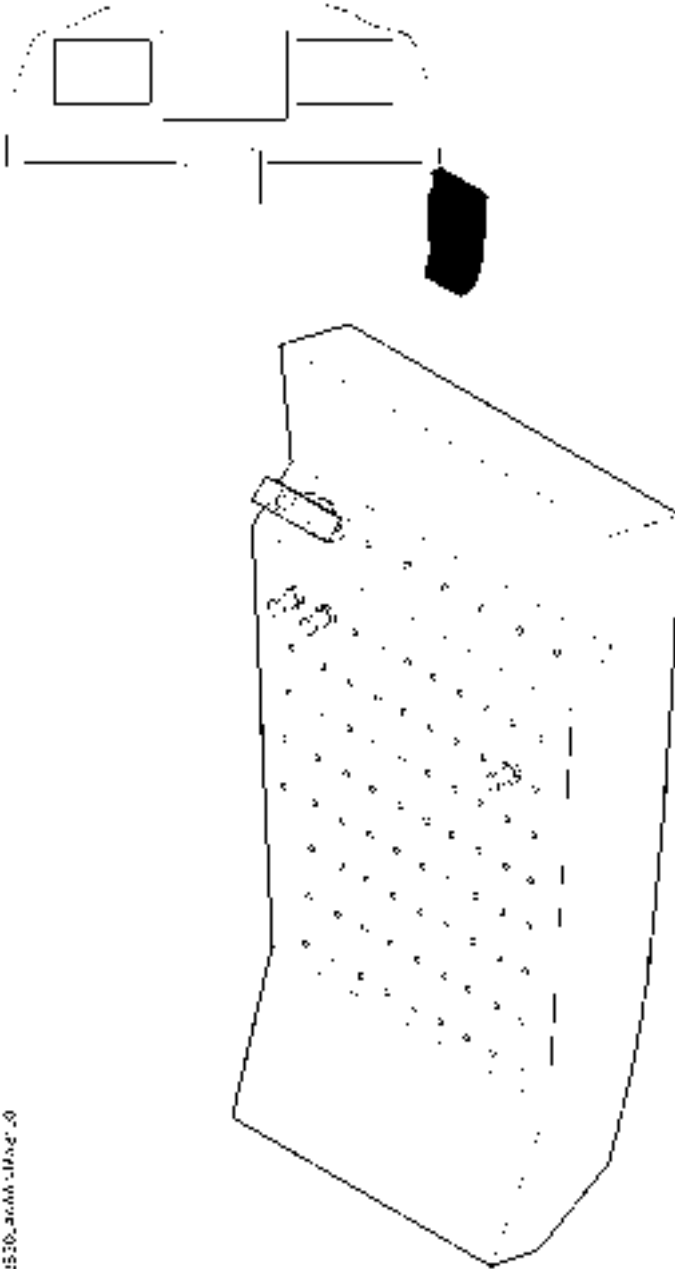
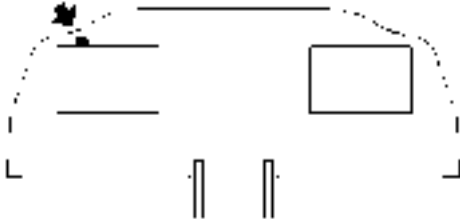


Figure 7.3.6 (2/2) - PEDESTAL CONSOLE  
(Typical arrangement)



121510\_30MM\_1Mag\_0

Figure 7.3.7 - CIRCUIT BREAKERS PANEL



Légende voyants  
Light's key



Rouge  
Red



Ambré  
Amber

143 70736442 70346402

Figure 7.3.8 - GENERAL ALARMS WARNING LIGHTS

## **DOORS, WINDOWS AND EMERGENCY EXIT**

### **Cabin access door (Figure 7.3.9)**

The cabin two-piece access door (crew and passengers), located on the left side of fuselage aft of the wings, opens outside. Stairs are incorporated in the lower door.

It is necessary to open the upper door to access the lower door handle.

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embedded in upper door (this pressure disengages the handle from its recess), then turn the handle downwards. Raise the door helping it to open. A compensation actuator brings and maintains the door at its maximum opening position. Once the upper door is open, lift up the handle of lower door (this handle is located on door upper edge) and move it forward to free the latch pin. Lower the door carefully until it is sustained by the cable.

To close the door from inside the airplane, raise lower door by pulling on the cable until upper edge is accessible. Pull the door by the middle until it aligns with fuselage. Tilt handle rearwards to lock. Check that each latch pin is correctly engaged in its recess (visible green marks). Pull upper door, making it align firmly in fuselage door frame, and lock the door by displacing the handle downward, then bring it down in its recess. Check that each latch pin is correctly engaged in its recess (visible green marks).

The "DOOR" CAS message lights on as long as the door is not correctly locked.

To open door from inside the cabin, unlock the handle by pressing on knob or lifting up the lug located under the window, pull the handle toward inside and move it upwards. Open the upper door, unlock lower door and let it drop supporting it with the cable.

### **TBM 700A - Door equipped with one cable**





Figure 7.3.9 - CABIN ACCESS DOOR  
**TBM 700A - Door equipped with one cable**

## DOORS, WINDOWS AND EMERGENCY EXIT

### ■ Cabin access door (Figure 7.3.9A)

The cabin two-piece access door (crew and passengers), located on the left side of fuselage aft of the wings, opens outside. Stairs are incorporated in the lower door.

It is necessary to open the upper door to access the lower door handle.

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embedded in upper door (this pressure disengages the handle from its recess), then turn the handle downwards. Raise the door helping it to open. A compensation actuator brings and maintains the door at its maximum opening position. Once the upper door is open, lift up the handle of lower door (this handle is located on door upper edge) and move it forward to free the latch pins. Lower the door carefully until it is sustained by the cables.

To close the door from inside the airplane, raise lower door by pulling on the handle (see detail "A" or "B") until upper edge is accessible. Pull the door by the middle until it aligns with fuselage. Tilt handle rearwards to lock. Check that each latch pin is correctly engaged in its recess (visible green marks). Pull upper door, making it align firmly in fuselage door frame, and lock the door by displacing the handle downward, then bring it down in its recess. Check that each latch pin is correctly engaged in its recess (visible green marks).

The "DOOR" CAS message lights on as long as the door is not correctly locked.

To open door from inside the cabin, unlock the handle by pressing on knob or lug located under the window, pull the handle toward inside and move it upwards. Open the upper door, unlock lower door and let it drop supporting it with the cable handle (see detail "A" or "B").

### **TBM 700A - Door equipped with two cables**

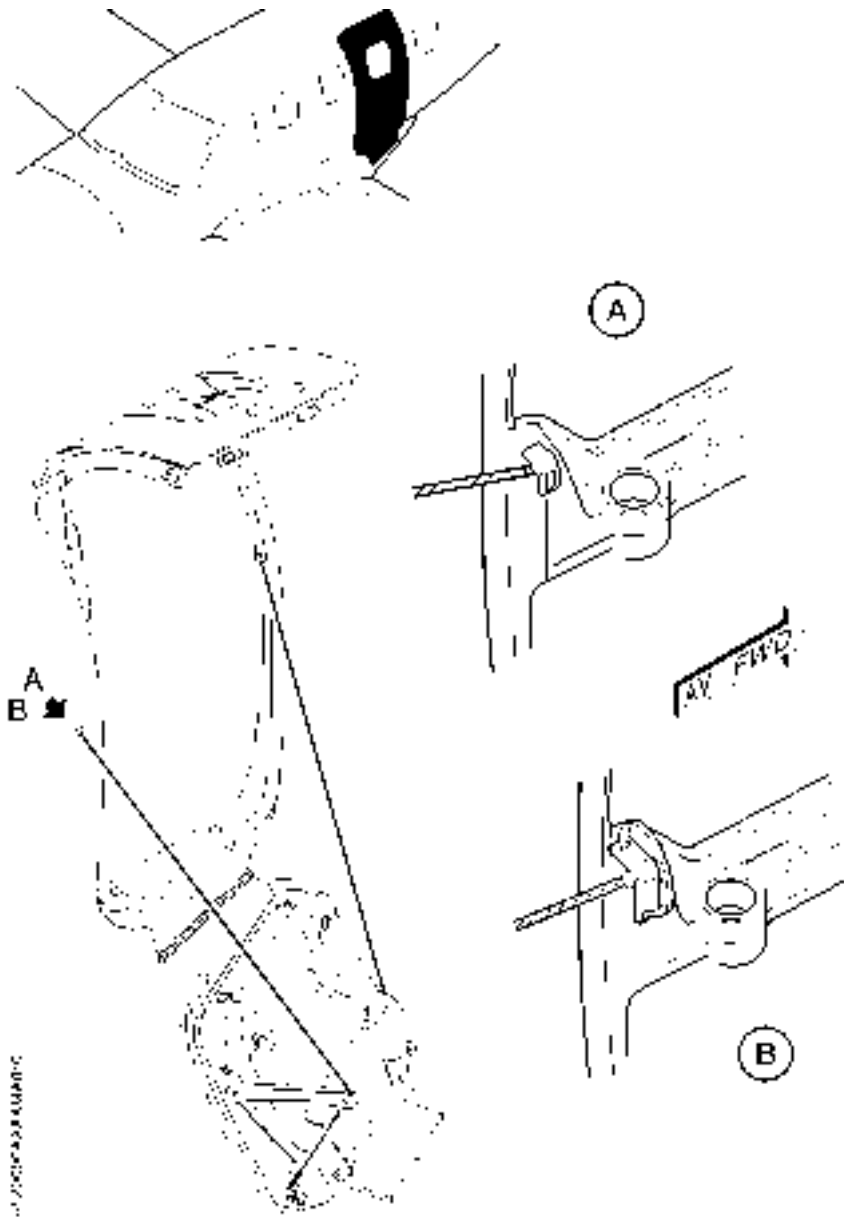


Figure 7.3.9A - CABIN ACCESS DOOR  
**TBM 700A - Door equipped with two cables**

## **DOORS, WINDOWS AND EMERGENCY EXIT**

### ■ **Cabin access door** (Figure 7.3.9B)

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 embeded 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).

The "DOOR" CAS message lights on as long as the door is not correctly locked.

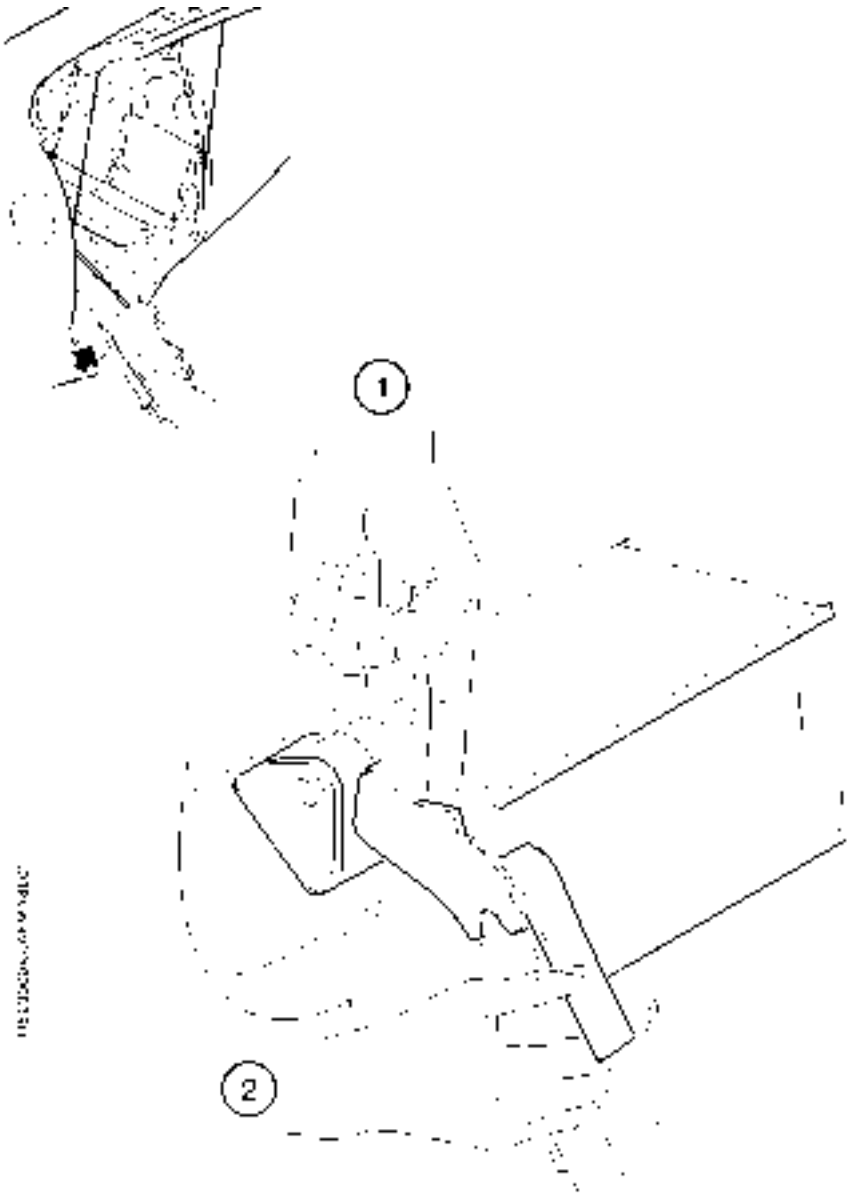


Figure 7.3.9B - CABIN ACCESS DOOR

**TBM 700B**

**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 (visible green marks).

In case of geared motor failure, the door can be manually tilted downwards by pulling sufficiently to override action of compensating struts.

**FWD baggage compartment door**

The FWD baggage 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 may be equipped with a lock (same key as for the access door). When the door is closed, latches are flush with the fuselage profile.

The "FRONT CARGO DOOR" CAS message lights on as long as FWD compartment door is not locked.

**Windows**

Windows do not open. The windshield consists of two parts, the pilot's one being electrically deiced. The R. H. one may be optionally deiced.

**Emergency exit (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.





**BAGGAGE COMPARTMENTS**

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.

The FWD compartment is accessible by opening the external door located on the left side of the airplane.

The floor of the AFT compartment is equipped with rings fitted with lashing straps provided for securing parcels and baggage on compartment floor.

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 may be separated from the rear baggage compartment by a partition net (if installed) 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, 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 baggage compartments depend on airplane equipment, refer to Section 6 "Weight and balance".

**WARNING****ANY PARCEL OR BAGGAGE MUST BE STOWED BY STRAPS**

**TRANSPORT OF DANGEROUS MATERIALS IS NORMALLY FORBIDDEN. HOWEVER, IF TRANSPORT OF SUCH MATERIALS IS NECESSARY, RESPECT THE LAW CONCERNING TRANSPORT OF DANGEROUS MATERIALS AND ANY OTHER APPLICABLE REGULATION**

**DO NOT ALLOW ANY LIVE ANIMALS, FULL BOTTLES, CLOSED CONTAINERS AND / OR AEROSOLS IN FORWARD NON-PRESSURIZED COMPARTMENT**

**IT IS THE PILOT'S RESPONSIBILITY TO CHECK THAT ALL THE PARCELS AND BAGGAGE ARE PROPERLY SECURED IN THE CABIN**

## SEATS, BELTS AND HARNESSSES

### ■ **Cockpit seats** (Figure 7.3.11)

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 forwards (Item 7) for longitudinal setting.

The seat height is adjusted by pulling up side handle (Item 9) while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side handle (Item 10).

### ■ **Passengers' seats** (Figure 7.3.11)

The standard accommodation consists of four individual seats mounted on the same rails as the front seats.

The back-rest tilting of the seats can be modified.

The L.H. rear seat back tilts forward, to ease baggage loading in aft baggage compartment.

### ■ **Belts and harnesses** (Figure 7.3.12)

## **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**

Safety belts consist of three parts : two adjustable half-belts attached to the seat and one harness installed on an inertial reel attached to the structure. The inertial reel allows lengthwise movements as long as they are not sudden, otherwise the reel jams and hinders the displacement of the occupant forward. Harness is linked to belt with its buckle and a pin.

**TBM 700A S/N 1 to 23, 25, 28, 33 and 35, except  
airplanes equipped as a retrofit with  
modification No. MOD 70-019-25**

**SEATS, BELTS AND HARNESSSES****■ Cockpit seats** (Figure 7.3.11A)

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 forwards (Item 7) for longitudinal setting.

The seat height is adjusted by pulling up side handle (Item 9) while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side handle (Item 10).

**■ Passengers' seats** (Figure 7.3.11A)

The standard accommodation consists of two individual seats, installed back to the flight direction, mounted on the same rails as the front seats and two rear seats arranged as a bench.

The back-rest tilting of these seats can be modified.

The rear seat back-rests tilt forward, to ease baggage loading in aft baggage compartment.

**■ Belts and harnesses** (Figure 7.3.12)**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**

Safety belts consist of three parts : two adjustable half-belts attached to the seat and one harness installed on an inertial reel attached to the structure. The inertial reel allows lengthwise movements as long as they are not sudden, otherwise the reel jams and hinders the displacement of the occupant forward. Harness is linked to belt with its buckle and a pin.

**TBM700A S/N 24, 26, 27, 29 to 32, 34, 36 to 9999,  
plus airplanes equipped as a retrofit with  
modification No. MOD 70-019-25**

## SEATS, BELTS AND HARNESSSES

### ■ **Cockpit seats** (Figure 7.3.11B)

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 forwards (Item 7) for longitudinal setting.

The seat height is adjusted by pulling up side handle (Item 9) while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side handle (Item 10).

### ■ **Passengers' seats** (Figure 7.3.11B)

The standard accommodation consists of two individual seats, installed back to the flight direction, mounted on the same rails as the front seats and two rear seats arranged as a bench.

The back-rest tilting of these seats can be modified.

The rear seat back-rests tilt forward and the rear L.H. seat may tilt forwards to ease baggage loading in aft baggage compartment.

### ■ **Belts and harnesses** (Figure 7.3.12)

## **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**

Safety belts consist of three parts : two adjustable half-belts attached to the seat and one harness installed on an inertial reel attached to the structure. The inertial reel allows lengthwise movements as long as they are not sudden, otherwise the reel jams and hinders the displacement of the occupant forward. Harness is linked to belt with its buckle and a pin.

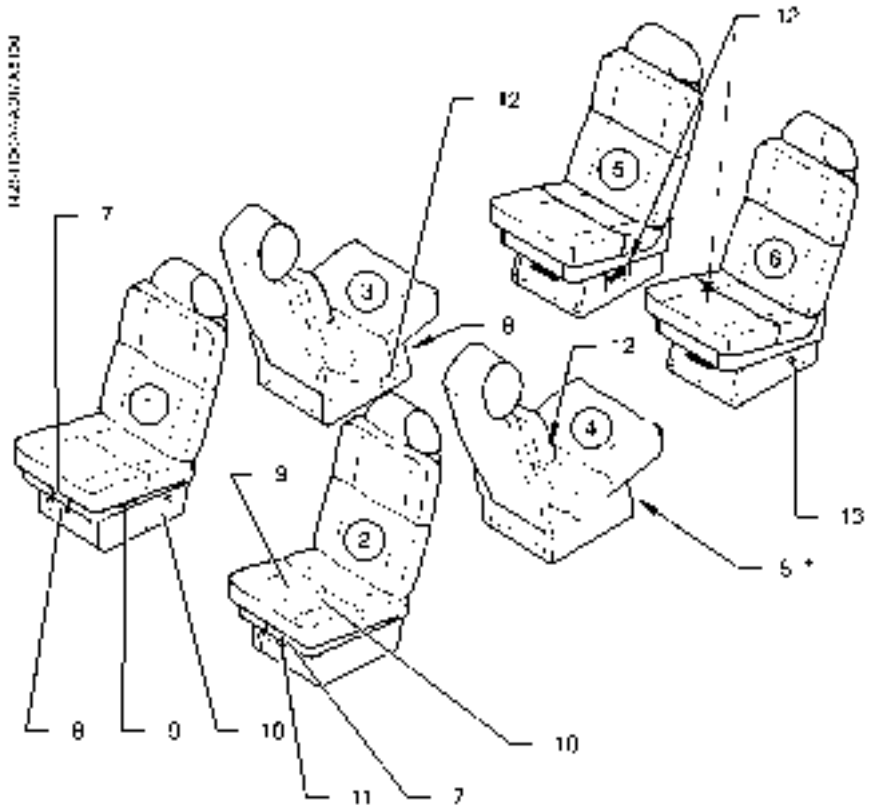
## **TBM 700B**

INTENTIONALLY LEFT BLANK

- 1) Front passenger's seat
- 2) L. H. pilot's seat
- 3) R. H. intermediate passenger's seat (back to flight direction)
- 4) L. H. intermediate passenger's seat (back to flight direction)
- 5) R. H. rear passenger's seat
- 6) L. H. rear passenger's seat
- 7) Front seat(s) longitudinal shift control
- 8) Oxygen masks (2) drawer [R. H. front seat, R.H. intermediate seat and R.H. rear seat or L.H. intermediate seat (variant)]
- 9) Front seat(s) height control
- 10) Front seat(s) back-rest tilt control
- 11) Drawer for pilot's piddle pak (if installed)  
(front side : new bags, rear side : used bags)
- 12) Rear seat(s) back-rest tilt control
- 13) L. H. rear seat tilt control (access to baggage compartment)

Figure 7.3.11 (1/2) - SEATS

**TBM 700A S/N 1 to 23, 25, 28, 33 and 35, except**  
**airplanes equipped as a retrofit with**  
**modification No. MOD 70-019-25**



(\*) Oxygen masks (2) drawer in variant of R.H. rear seat

Figure 7.3.11 (2/2) - SEATS

**TBM 700A S/N 1 to 23, 25, 28, 33 and 35, except**  
**airplanes equipped as a retrofit with**  
**modification No. MOD 70-019-25**

- 1) Front passenger's seat
- 2) L. H. pilot's seat
- 3) R. H. intermediate passenger's seat (back to flight direction)
- 4) L. H. intermediate passenger's seat (back to flight direction)
- 5) R. H. rear passenger's seat
- 6) L. H. rear passenger's seat } Rear bench
- 7) Front seat(s) longitudinal shift control
- 8) Oxygen masks (2) drawer (intermediate seats)
- 9) Front seat(s) height control
- 10) Front seat(s) back-rest tilt control
- 11) Drawer for pilot's piddle pak (if installed)  
(front side : new bags, rear side : used bags)
- 12) Intermediate seat(s) back-rest tilt control
- 13) Rear bench seat(s) back-rest tilt control

**NOTE :**

*To have access to the aft baggage compartment, pull forwards the back-rest of rear bench seat(s).*

Figure 7.3.11A (1/2) - SEATS  
**TBM700A S/N 24, 26, 27, 29 to 32, 34, 36 to 9999,**  
**plus airplanes equipped as a retrofit with**  
**modification No. MOD 70-019-25**





- 1) Front passenger's seat
- 2) L. H. pilot's seat
- 3) R. H. intermediate passenger's seat (back to flight direction)
- 4) L. H. intermediate passenger's seat (back to flight direction)
- 5) R. H. rear passenger's seat
- 6) L. H. rear passenger's seat
- 7) Front seat(s) longitudinal shift control
- 8) Oxygen masks (2) drawer (intermediate seats)
- 9) Front seat(s) height control
- 10) Front seat(s) back-rest tilt control
- 11) Drawer for pilot's piddle pak (if installed)  
(front side : new bags, rear side : used bags)
- 12) Intermediate seat(s) back-rest tilt control
- 13) Rear bench seat(s) back-rest tilt control
- 14) Rear bench L.H. seat tilt control

**NOTE :**

*To have access to the aft baggage compartment, pull forwards the back-rest of rear bench L.H. seat, then pull forwards control (Item 14) to tilt L.H. seat assembly forwards.*

*If necessary, pull forwards the back-rest of rear bench R.H. seat.*

Figure 7.3.11B (1/2) - SEATS

**TBM 700B**

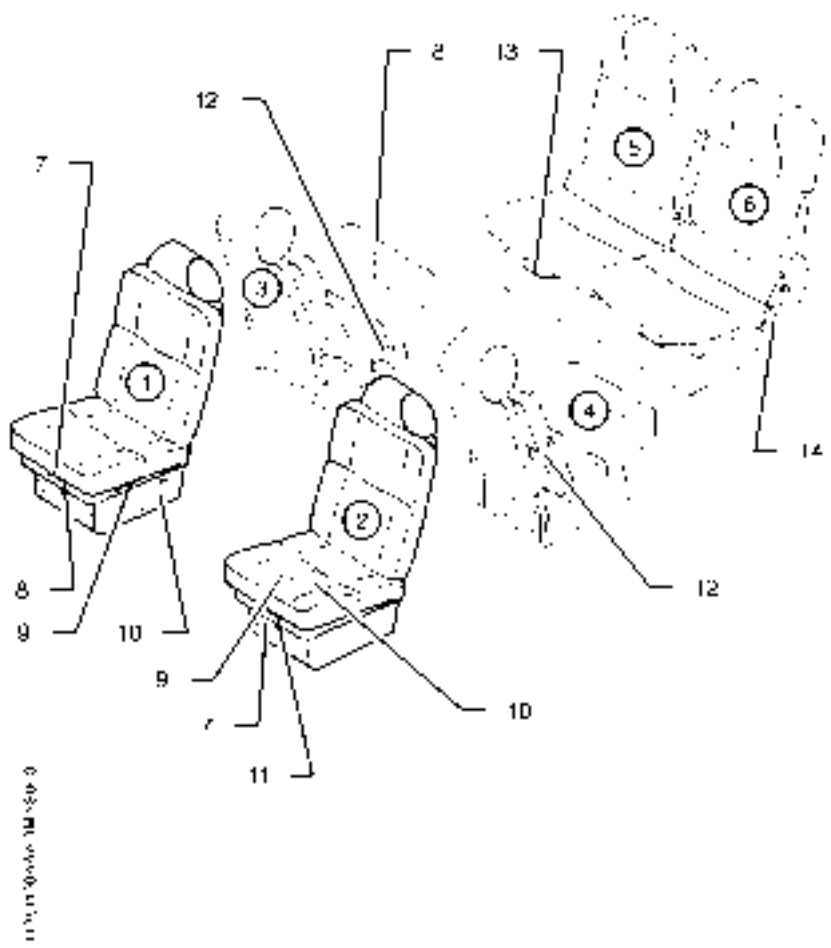


Figure 7.3.11B (2/2) - SEATS

**TBM 700B**

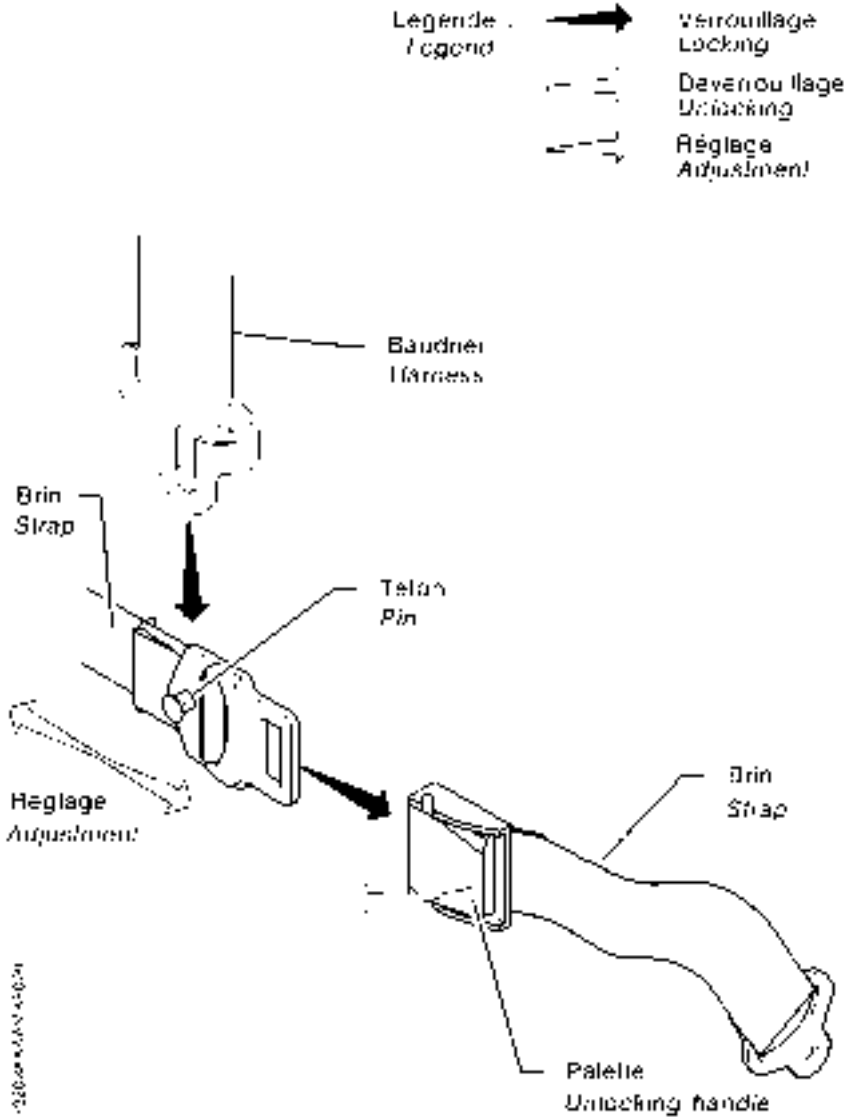


Figure 7.3.12 - FRONT OR REAR SEAT BELT (with movable straps) AND HARNESES

## **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 (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 (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" circuit breaker.

- 1) Pedestal assembly
- 2) Control wheels
- 3) Fuselage roll lever
- 4) Spoiler
- 5) Aileron
- 6) Aileron control in wing
- 7) Spoiler control

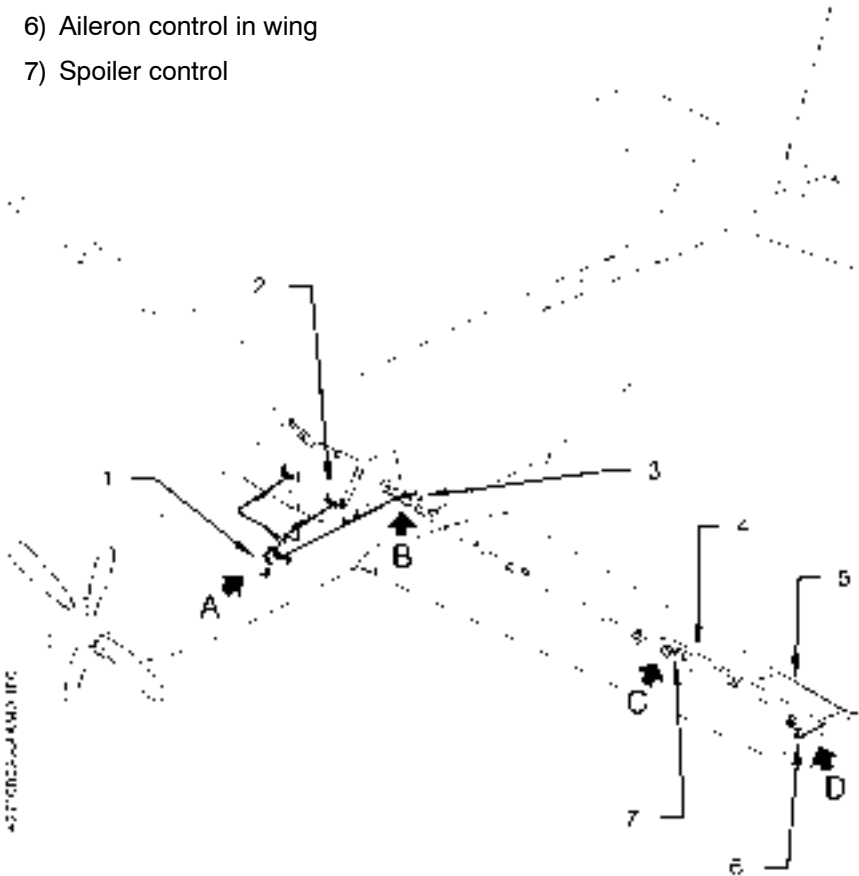


Figure 7.4.1 (1/2) - ROLL

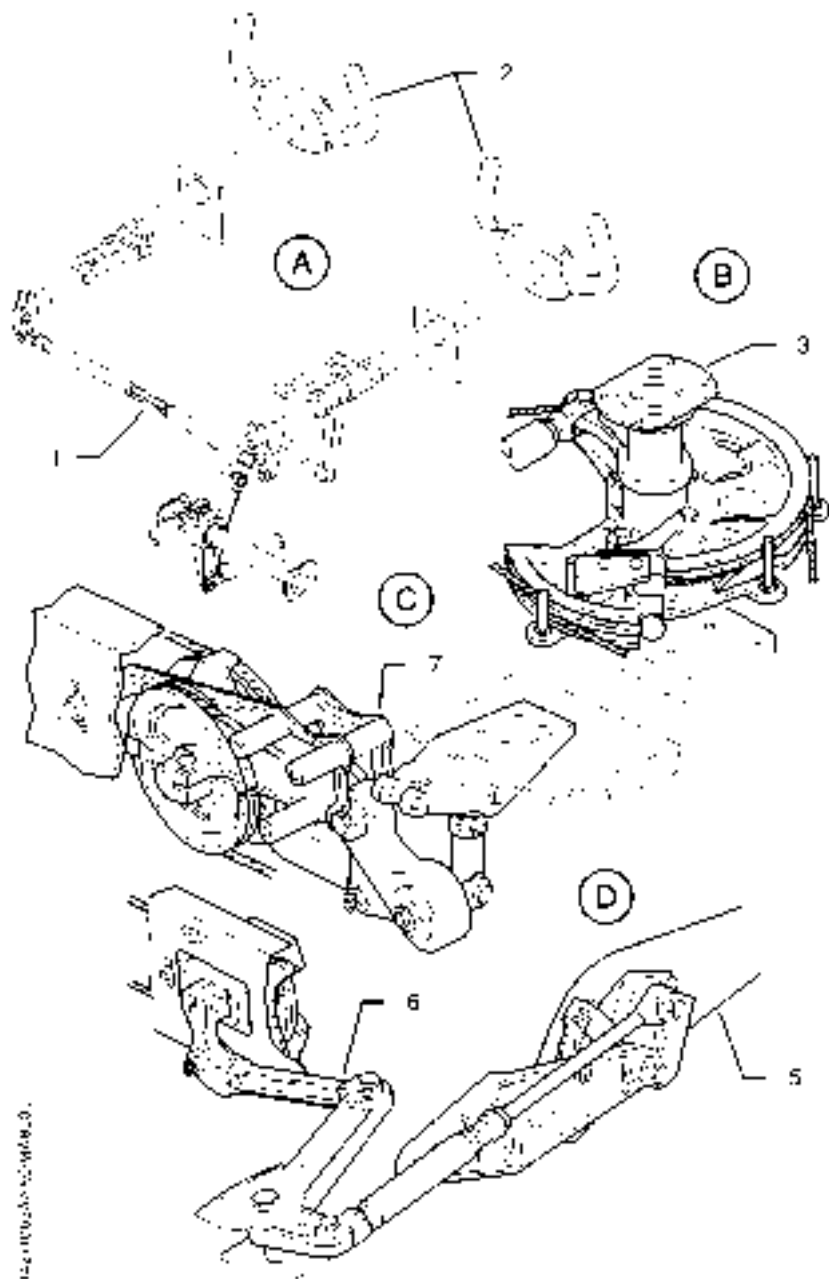


Figure 7.4.1 (2/2) - ROLL

- 1) Roll trim tab
- 2) Aileron
- 3) Adjustable rods
- 4) Actuator
- 5) Trim tab control wiring
- 6) Trim switch on pedestal console

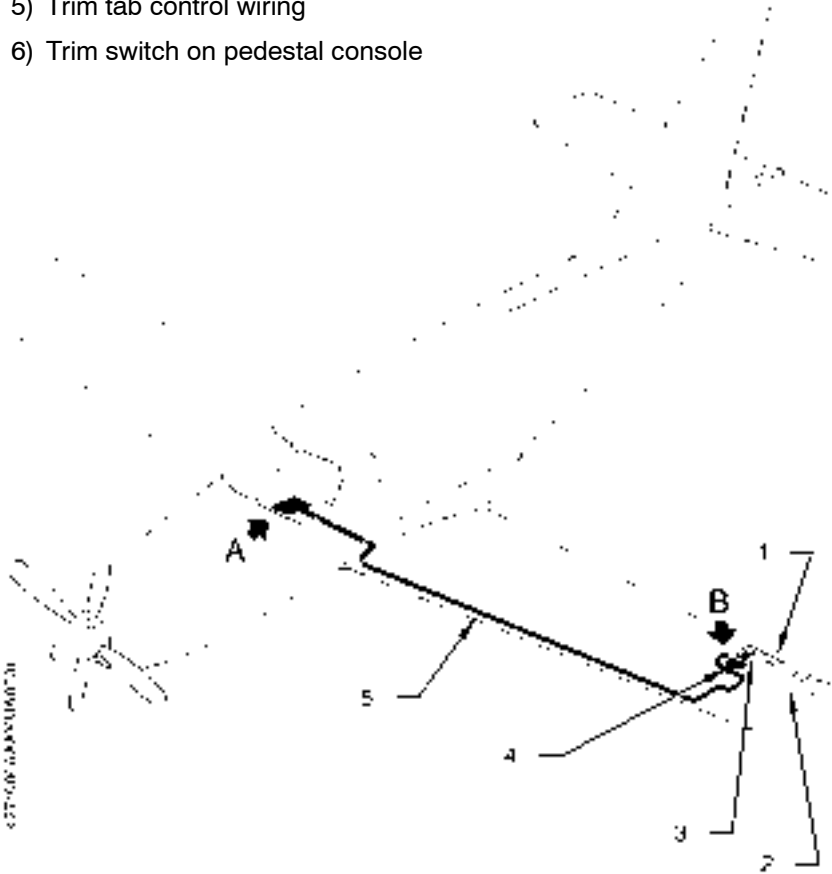


Figure 7.4.2 (1/2) - LATERAL TRIM



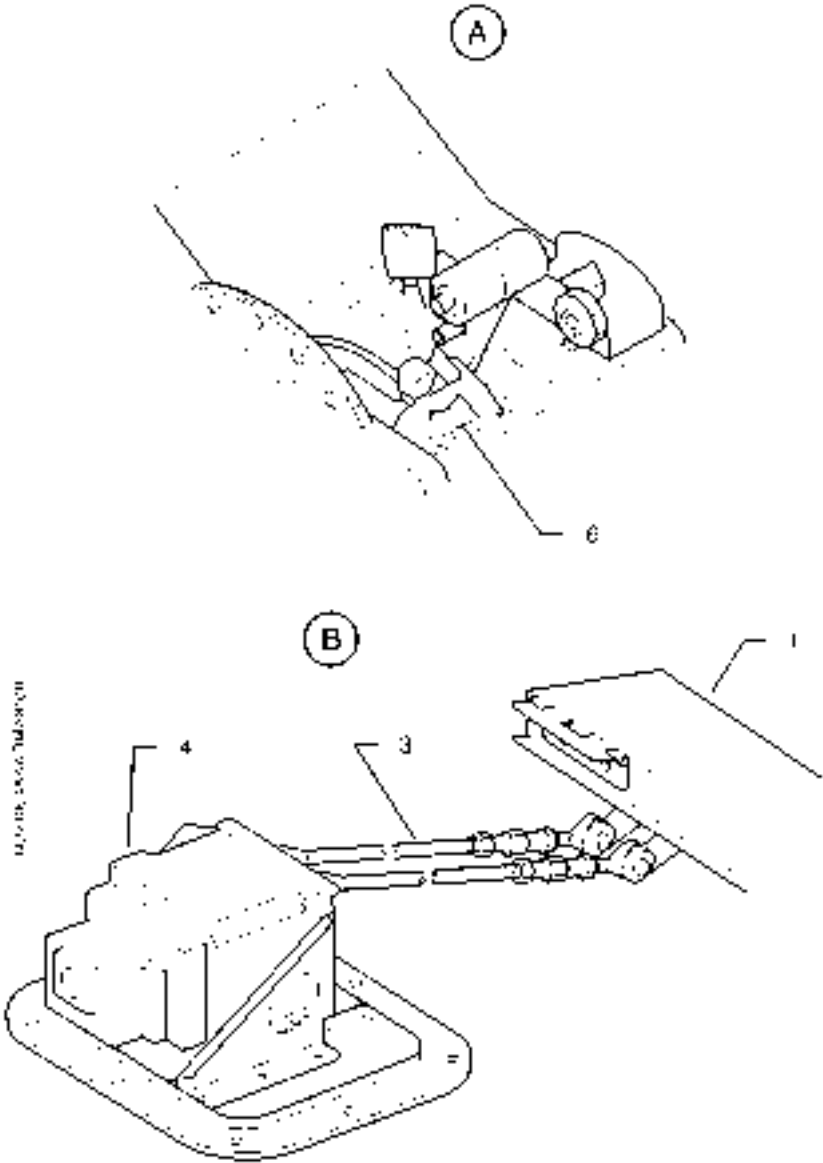


Figure 7.4.2 (2/2) - LATERAL TRIM

**ELEVATOR** (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 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** (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 jacks attached to the horizontal empennage.

The electrical control consists of a switch 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" circuit 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

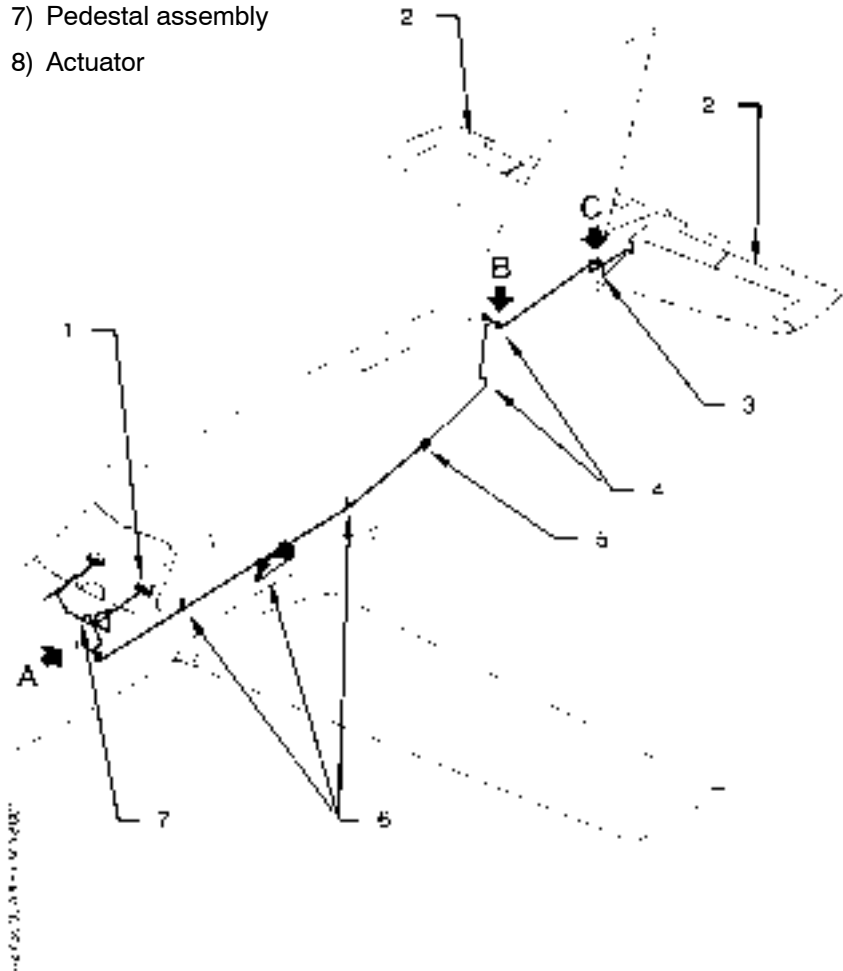


Figure 7.4.3 (1/2) - ELEVATOR

- 1) Cables
- 2) Pulleys
- 3) Pitch trim tabs
- 4) Actuating rods
- 5) Actuator
- 6) Pitch trim manual control wheel
- 7) Electric pitch trim control

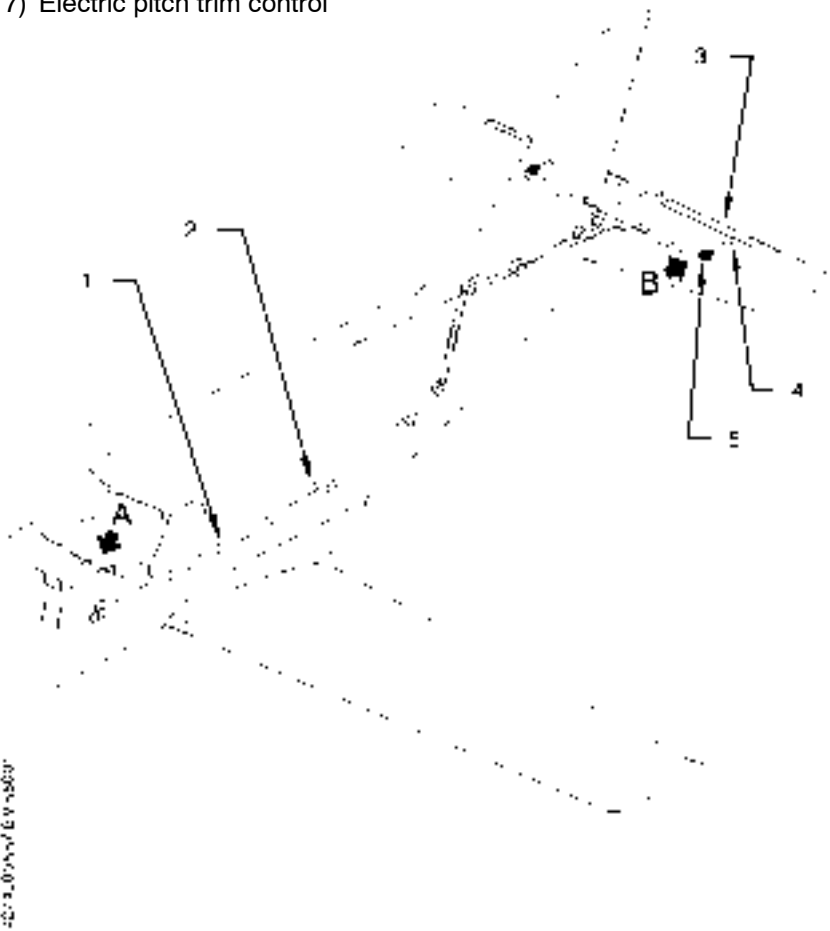


Figure 7.4.4 (1/2) - PITCH TRIM



**RUDDER** (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** (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 "RUD" switch (L / R) located on pilot control wheel.

Electrical circuit of rudder trim tab is protected by "RUD TRIM" circuit 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

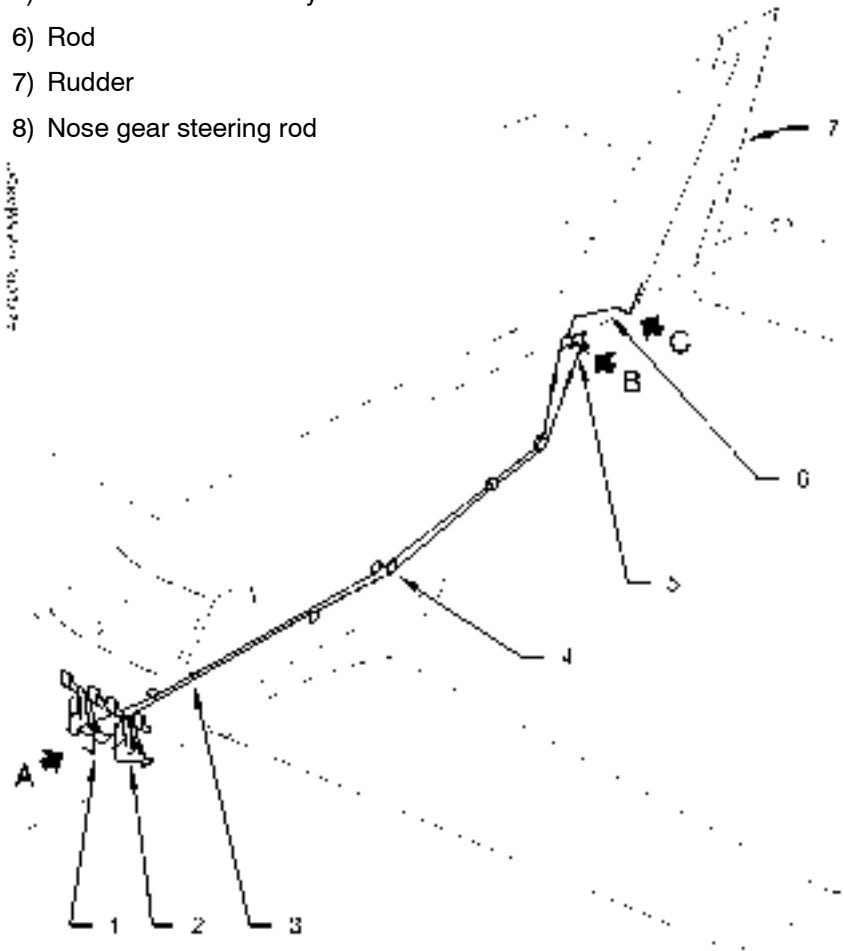


Figure 7.4.5 (1/2) - RUDDER

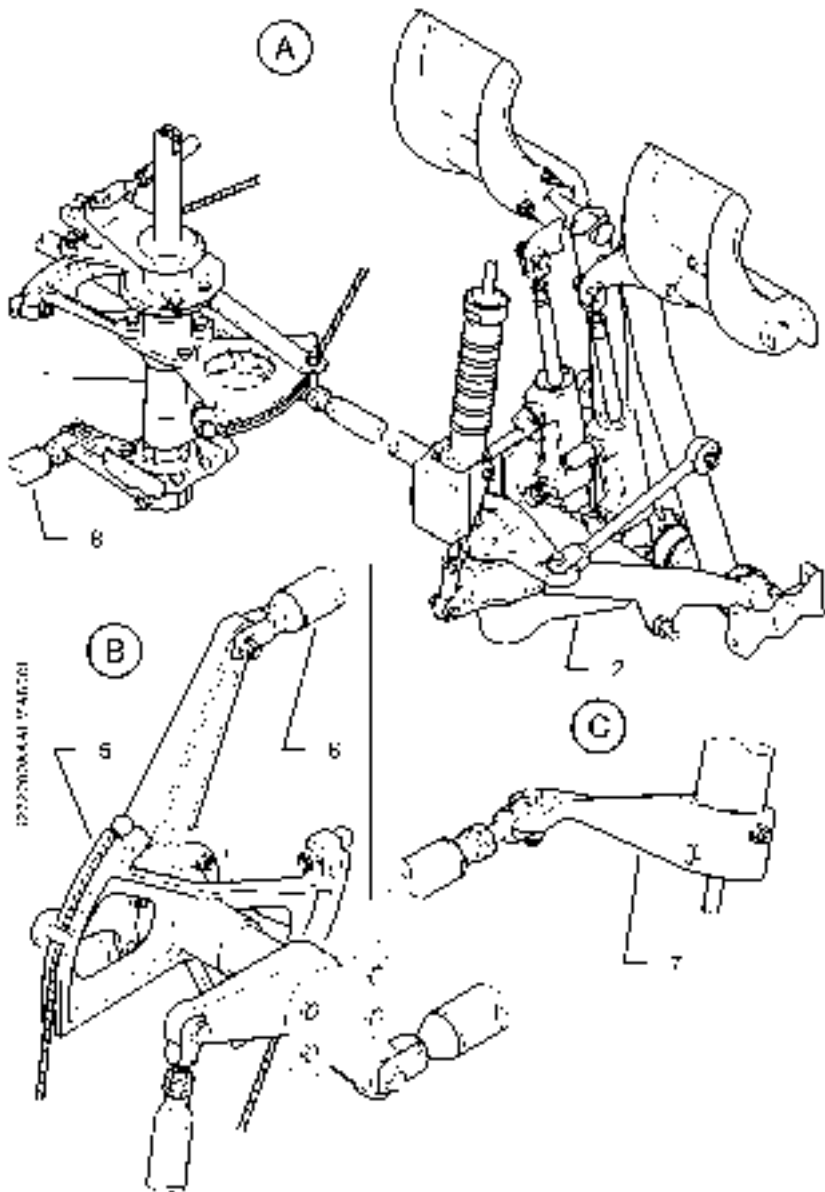
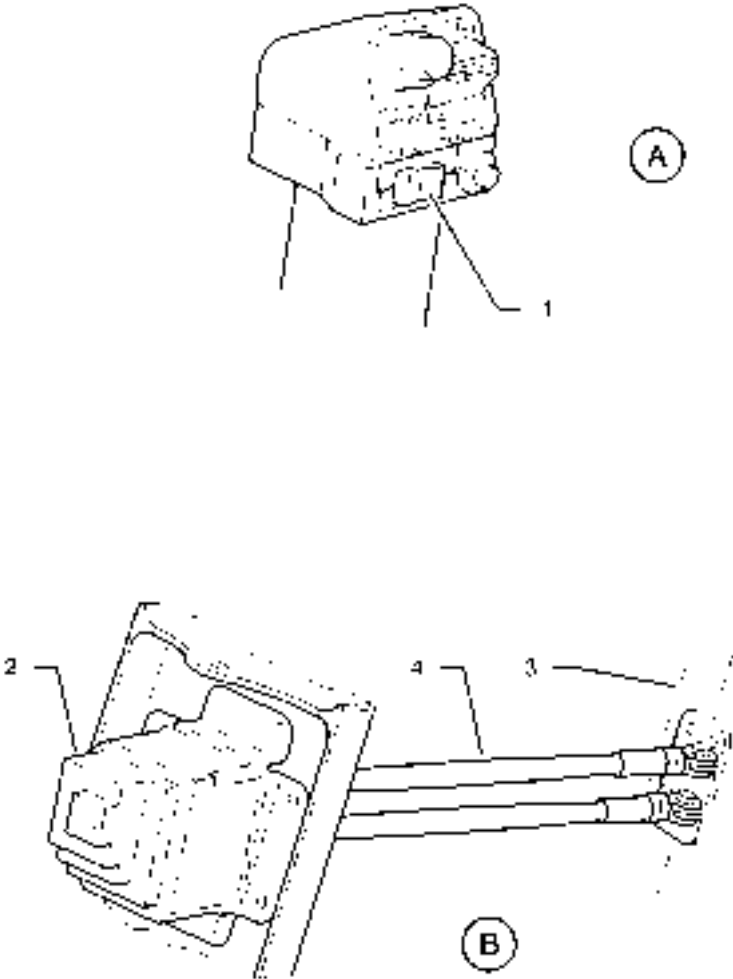


Figure 7.4.5 (2/2) - RUDDER







TEXT OF DRAWING

Figure 7.4.6 (2/2) - RUDDER TRIM

## 7.5 - LANDING GEAR

The TBM 700 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, one 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 CONTROL (Figure 7.5.1)

Landing gear control, 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 (Figure 7.5.1)

Landing gear position indication is accomplished by 4 warning lights :

- 3 green indicator lights (one per landing gear),
- 1 red warning light.

**NOTE :**

*The red warning light flashes as soon as landing gears are operating and remains continuously on in case of locking problem.*

When landing gear is correctly retracted, all warning lights are OFF.

Down-locked correct indication is when there are 3 green indicator lights ON and 1 red warning light OFF on the landing gear indicator. 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 DN" switch located on the same panel as the warning lights allows testing of the control circuit.

Indication panel is provided with two tests which allow checking green indicator lights and red warning light bulbs through two distinct electric power supplies.



- 1) Red warning light (LDG GR)
- 2) Green indicator light (LDG GR)
- 3) Landing gear control selector
- 4) Test switch
- 5) Test knobs

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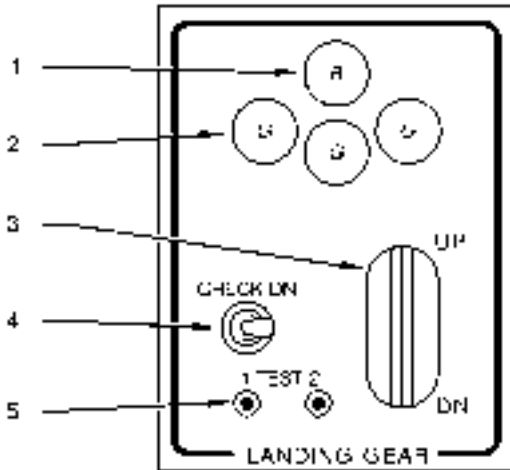


Figure 7.5.1 - CONTROL PANEL AND LANDING GEAR INDICATING

## 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 horn**

Landing gear horn is controlled by power lever and / or flaps. It sounds (continuous high-pitched sound) when :

- power lever 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 audio-warning signal becomes alternated (high-pitched sound / low-pitched sound).*

### ■ **Emergency landing gear extension control** (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.



## **GROUND MANEUVERS**

### **Nose gear steering control** (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. Since tight turns lead to untimely tire wear, turns should be made using the largest possible turning radius.



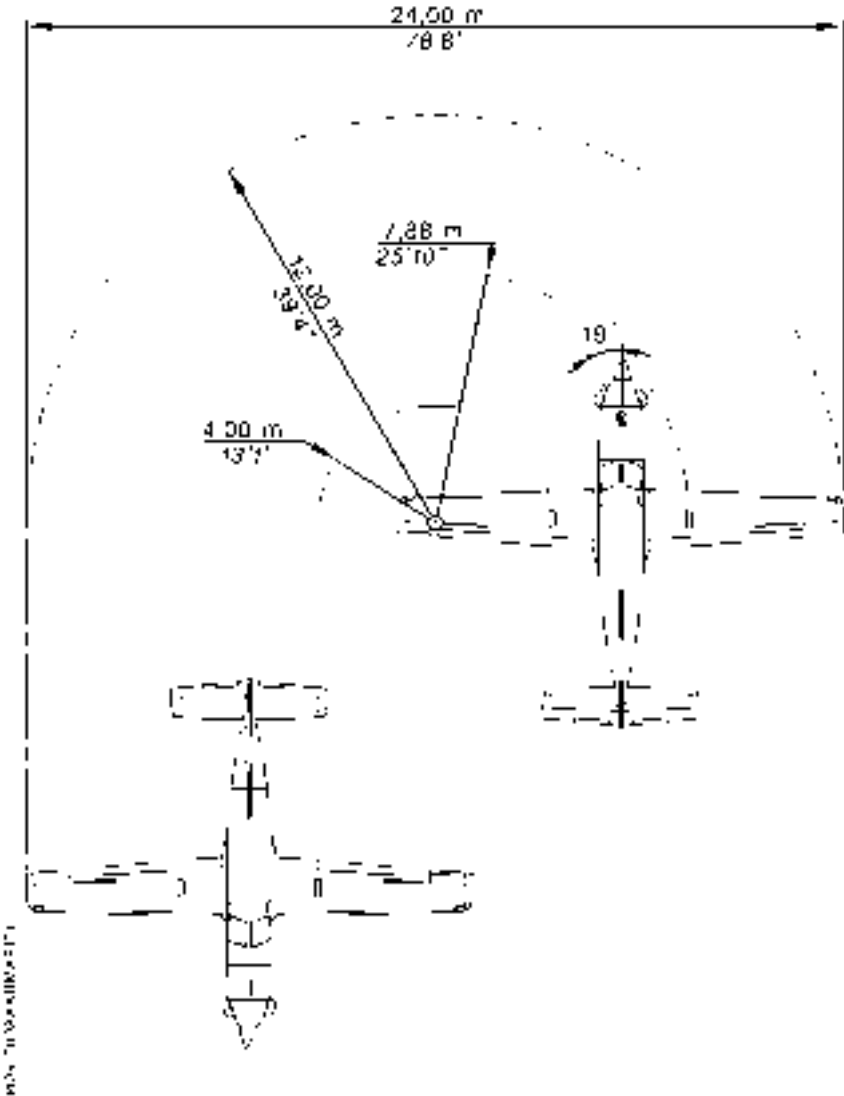


Figure 7.5.3 - MINIMUM TURN DIAMETER  
(Full rudder pedals travel without  
using differential braking)

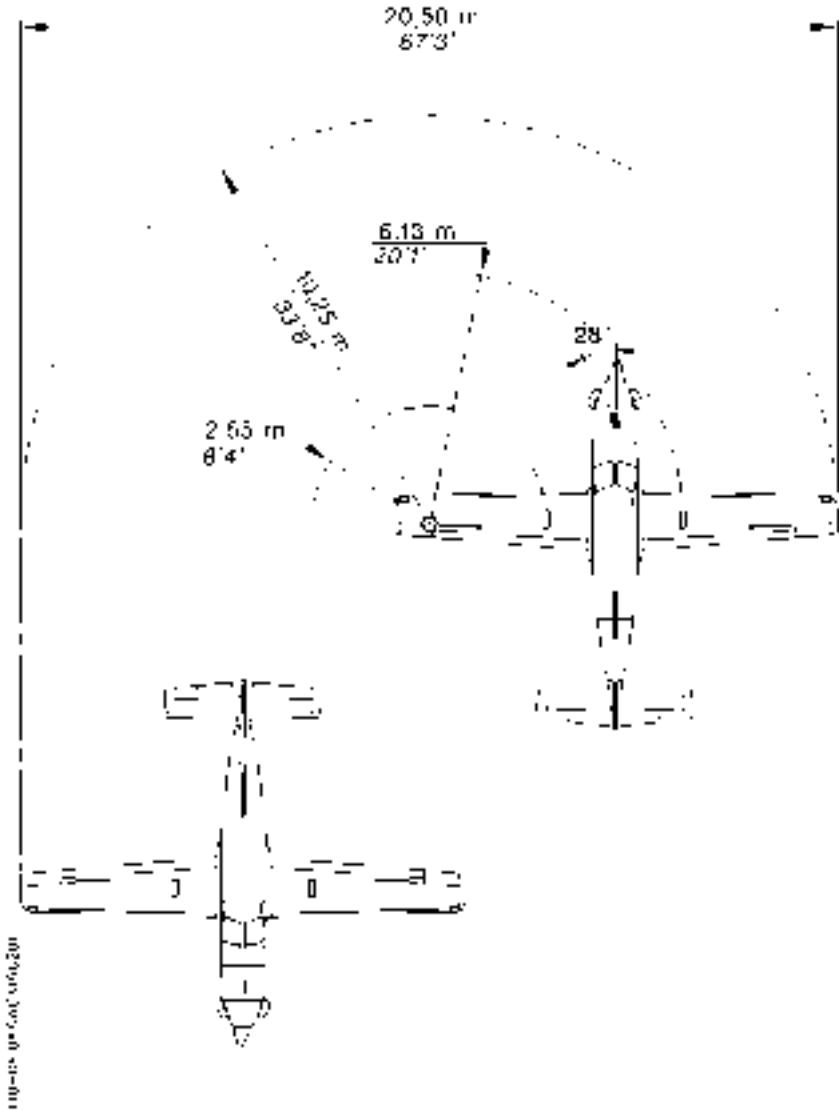


Figure 7.5.4 - MINIMUM TURN DIAMETER  
(Full rudder pedals travel **by**  
using differential braking)

**BRAKE SYSTEM** (Figure 7.5.5)

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.

**PARKING BRAKE** (Figures 7.5.5 and 7.5.6)

Parking brake control consists of a control knob located on pilot's side lower instrument panel, a valve which regulates brake pressure.

To apply parking brake, press on toe brake of rudder pedals and position control knob on "ON"

"PARK BRAKE" CAS message lights on when control knob is positioned on ON.

**NOTE :**




*Operating the parking brake knob without applying pressure on rudder pedals does not cause the wheels to be braked.*

To release the parking brake, turn the selector to the left in order to set the index upwards to "OFF" position and check at the same time that the "PARK BRAKE" CAS message disappears.

- 1) Reservoir
- 2) Vent
- 3) R.H. station master cylinders
- 4) Parking brake control knob
- 5) Parking 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

Légende Key

-  Tuyau\_terre souple alimentation  
Supply hose
-  Tuyau\_terre flexible pression  
Pressure flexible pipe
-  Tuyau\_terre rigide pression  
Pressure rigid pipe

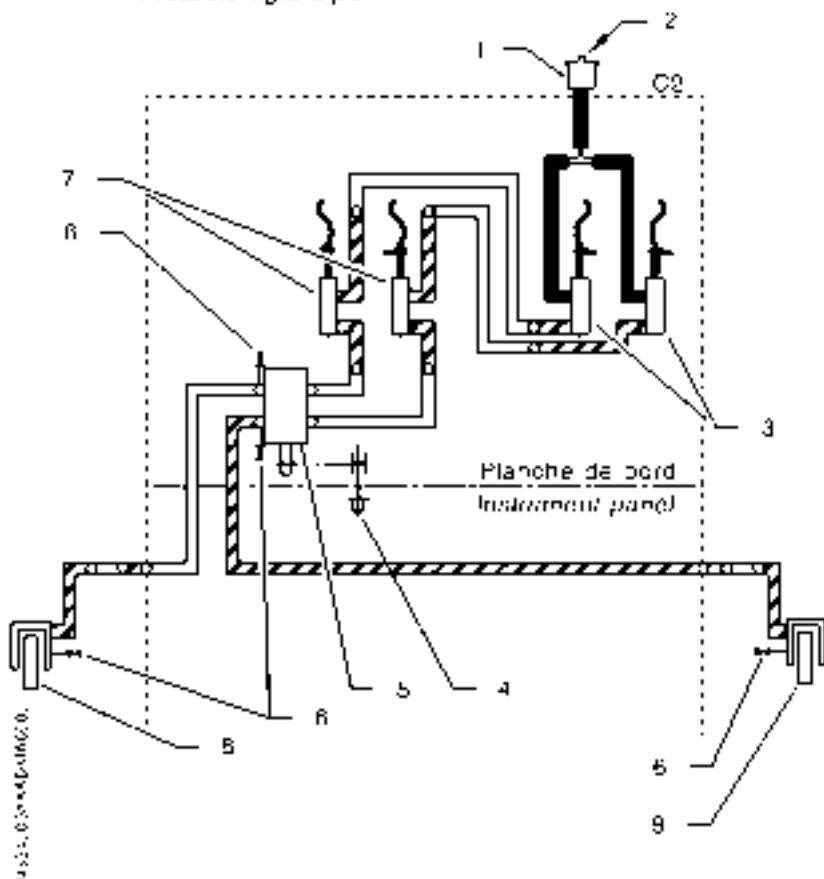


Figure 7.5.5 (2/2) - BRAKE SYSTEM



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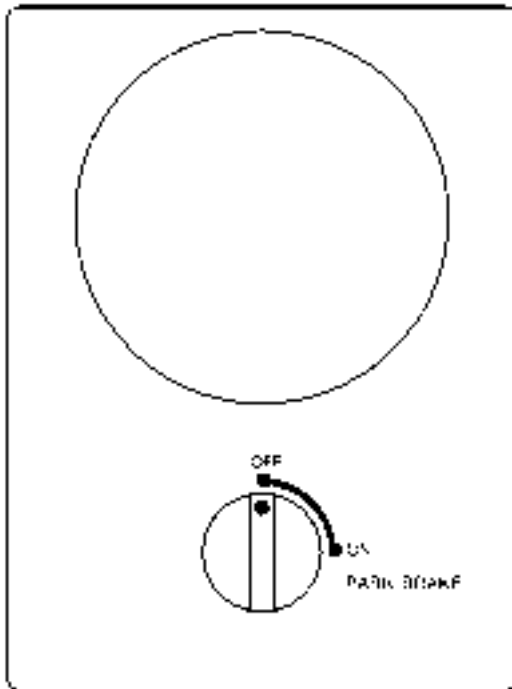


Figure 7.5.6 - PARKING BRAKE

## 7.6 - POWERPLANT

### **TURBOPROP ENGINE OPERATION** (Figure 7.6.1)

The PRATT & WHITNEY CANADA turboprop engine (PT6A-64 type) is a free turbine engine developing thermodynamic power of 1580 SHP, derated to 700 SHP.

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), independent 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 and propeller governor, are installed on accessory gearbox located rearward of engine.

PRATT & WHITNEY CANADA PT6A-64 turboprop engines do not require any specific running-in procedure. They can be safely used in all normal ranges allowed by the manufacturer at the time of delivery of the airplane or a new engine or an engine having undergone an overhaul or a reconditioning.

- 1) Propeller governor
- 2) Exhaust stub
- 3) Axial compressors
- 4) Accessory gearbox
- 5) FCU Fuel control unit
- 6) Oil to fuel heater
- 7) Compressor stubshaft
- 8) Air intake
- 9) Centrifugal impeller
- 10) Combustion chamber
- 11) Compressor turbine
- 12) Power turbine 1st stage
- 13) Power turbine 2nd stage
- 14) Power turbineshaft



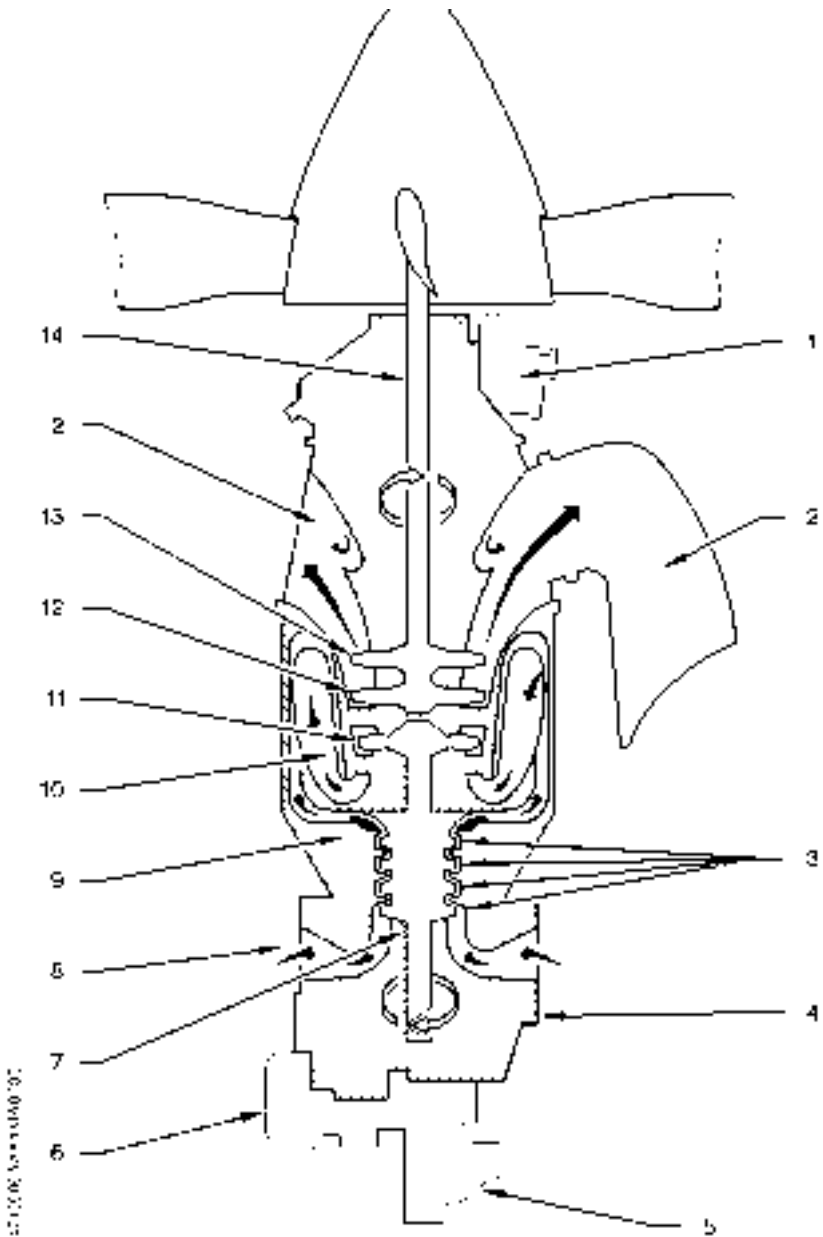


Figure 7.6.1 (2/2) - POWERPLANT

**ENGINE CONTROLS (LEVERS)** (Figure 7.6.2)

Engine operation requires use of four levers located on pedestal console in cabin :

- power lever (Item 2), and its detent for reverse (Item 6)
- propeller governor lever (Item 1),
- condition lever (Item 3),
- "MAN OVRD" emergency fuel regulation lever (Item 5),

**NOTE :**

*Thumbwheel for lever friction (Item 4)*

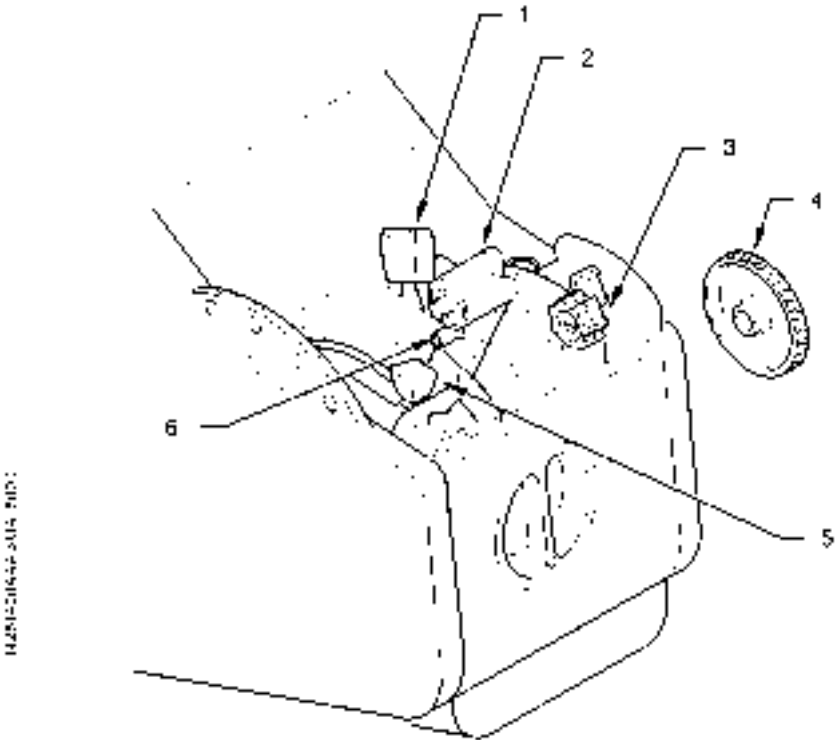


Figure 7.6.2 - ENGINE CONTROLS (LEVERS)

### **Power control lever**

The power control lever is linked to fuel control unit. It modulates engine power from full reverse to takeoff.

Engine running, the power control lever 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 power control lever forward.

### **CAUTION**

**DO NOT MOVE THE COCKPIT POWER CONTROL LEVER INTO THE PROPELLER REVERSE POSITION OR DAMAGE TO THE LINKAGE WILL RESULT.**

**REVERSE MAY ONLY BE SELECTED WITH ENGINE RUNNING AND PROPELLER TURNING**

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.

All rearward effort on the power control lever, past the idle stop, may damage or break the flexible control cable.

### **Propeller governor lever**

The propeller governor lever activates the propeller governor located forward of the engine to select and maintain any propeller speed between 1600 and 2000 RPM. This lever allows propeller feather. Changing from normal range to feather position requires "FEATH" stop by moving lever toward left side and back. The lever being locked in feather position, unlocking requires moving the lever toward left side and forward.

### **Condition lever**

The fuel condition lever is linked to FCU. It can be positioned to cutoff, idle LO / IDLE or idle HI / IDLE. Change from idle LO / IDLE to cutoff position is only possible after having overridden the idle gate. To override idle gate, raise lever and move it rearwards. If the lever is locked in cutoff position, unlocking is performed by raising lever and moving it forward.

Post-MOD70-0256-76

The fuel condition lever has a "HI / IDLE" locked position. Change from idle "HI / IDLE" to "LO / IDLE" position is only possible after having overridden the idle gate. To override idle gate, raise lever and move it rearwards.

**"MAN OVRD" emergency fuel regulation lever**

Emergency fuel regulation lever is normally in locked position. In case of FCU or power lever failure, it allows setting engine power manually. Unlocking and locking are performed by pulling lever knob up.

**NOTE :**

*The power available if the power lever fails will be limited by the position of the lever.*

**Lever friction** (Figure 7.6.2)

A thumbwheel (Item 4) located on right side of pedestal console increases friction to avoid control slip after setting.

**ENGINE INSTRUMENTS**

Engine indicating consists of :

- engine torque expressed in percent (%),
- propeller speed in RPM,
- generator rotation speed expressed in percent (%),
- ITT expressed in °C,
- oil pressure expressed in PSI.
- oil temperature expressed in °C.

**NOTE :**

*Engine monitoring is ensured by CAS messages : "TORQUE", "ITT" and "OIL PRESS". Refer to the "GARMIN" G1000 Cockpit Reference Guide for further details.*

**"PROP O' SPEED TEST" push-button** allows checking the overspeed valve for correct operation.

## 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.

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 (Figure 7.6.3)

### 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 as long as "STARTER" switch located on left side of "IGNITION" switch is maintained "ON" : this is normal procedure for ground starting or flight air start with starter.

"ON" position for "IGNITION" switch is used in case of flight air start without starter. In this configuration, ignition unit is supplied permanently. In any case, "IGNITION" CAS message lights on as long as ignition unit is supplied.

### **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 manual. Setting "STARTER" switch to "ON" connects the starter generator which drives powerplant. "STARTER" CAS message lights on indicating that the starter generator is operating.

### **WARNING**

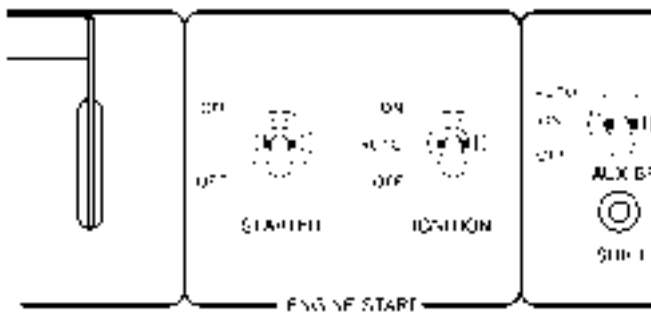
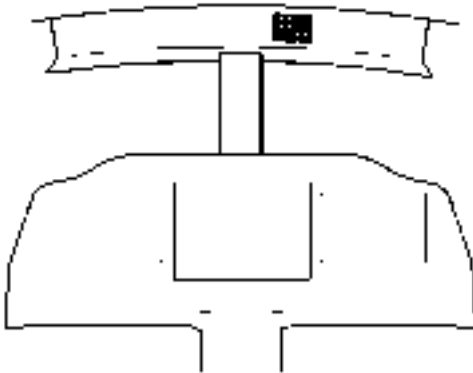
**ENGINE STARTING MUST BE PERFORMED BY QUALIFIED PERSONNEL AND BY FOLLOWING PROCEDURES AND PARAMETERS DESCRIBED IN SECTION 4 "NORMAL PROCEDURES"**

### **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 channelled 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" inverter located on "DE-ICE SYSTEM" panel. When inverter is set to ON, an electric actuator activates vanes ; "INERT SEP ON" CAS message lights on when vanes have reached their maximum deflection and remains illuminated as long as switch remains ON. Full deflection takes about 30 seconds.



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Figure 7.6.3 - ENGINE STARTING

## **EXHAUST SYSTEM**

Exhaust gases are evacuated through exhaust stubs located on sides of engine cowlings.

## **ENGINE ACCESSORIES**

All engine driven accessories [except power turbine tacho-generator (Np) and propeller 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 tacho-generator (Ng)**

Compressor turbine tacho-generator (Ng) is attached on accessory gearbox. It supplies a voltage which is transmitted to the G1000 system for display on the MFD (under normal display conditions).

### **Power turbine tacho-generator (Np)**

Power turbine tacho-generator is attached on the right side of the reduction gearbox. It supplies a voltage which is transmitted to the G1000 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 G1000 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 test solenoid which allows performing ground tests by arming limiter under normal overspeed power.

"PROP O'SPEED TEST" propeller test push-button (Figure 7.3.6) of overspeed limiter is located near flap control lever on the pedestal console.

**Torque limiter**

Torque limiter is located on right side of the reduction gear box. It is rated to limit engine torque to 110 %.

## **PROPELLER**

Airplane is equipped with an all-metal, four-bladed, constant-speed and full-feathering propeller.

### **Regulation**

Propeller governor located on engine maintains rotation speed selected by pilot with propeller governor lever. 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 the propeller governor lever 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 power lever (Refer to Paragraph "ENGINE CONTROLS").

### **Propeller overspeed regulator tests (Figure 7.3.6)**

"PROP O'SPEED TEST" push-button located on console near flap control lever is used on ground to check proper operation of propeller overspeed regulator. This push-button activates a solenoid, attached on propeller overspeed regulator, which limits propeller rotation speed when power lever is positioned forwards.

## 7.7 - FUEL SYSTEM (Figure 7.7.1)

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.

## TANK MANUAL SELECTOR (Figure 7.7.2)

The tank manual selector is located on the pedestal rear face. It allows selecting 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", the "FUEL OFF" CAS message remains visible.

- |                                   |                        |
|-----------------------------------|------------------------|
| 1) Flow divider                   | 15) Fuel unit          |
| 2) Flowmeter                      | 16) Filter drain       |
| 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) Pressure transmitter           | 22) Tank drain valve   |
| 9) Fuel jet                       | 23) Check-valve        |
| 10) Main mechanical boost pump    | 24) Low level detector |
| 11) Electric boost pump           | 25) Suction strainer   |
| 12) Fuel filter                   | 26) Fuel amplifier     |
| 13) Filter clogging by-pass valve | 27) Sequencer          |
| 14) Filter clogging indicator     |                        |

Figure 7.7.1 (1/2) - FUEL SYSTEM

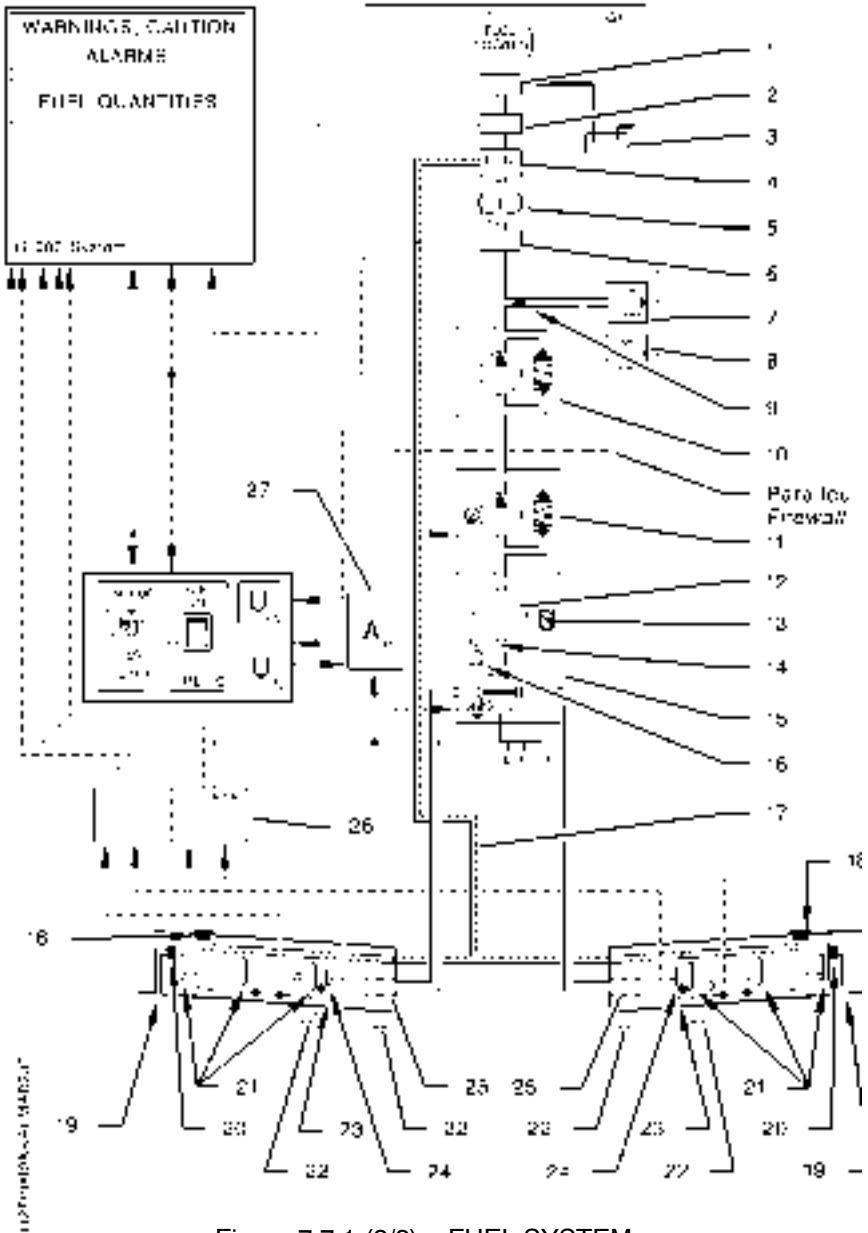


Figure 7.7.1 (2/2) - FUEL SYSTEM

### **AUTOMATIC TANK SELECTOR** (Figures 7.7.2 and 7.7.3)

Automatic tank selection allows, without pilot's intervention, feeding the engine from one tank to 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 box (sequencer), an actuator attached on fuel unit, "FUEL SEL" two-position selector ("AUTO", "MAN") and "SHIFT" 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" CAS message 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.

#### Pre-MOD70-402-28

Airplane in flight : tank is changed every ten minutes, as long as a fuel low level CAS message does not appear. When the first low level CAS message lights on, the sequencer immediately selects the other tank. The selected tank will operate until the second low level CAS message lights on. When both low level CAS messages are visible, the sequencer changes tanks every minute and 15 seconds.

#### Post-MOD70-402-28

Airplane in flight : tank is changed every five minutes, as long as a fuel low level CAS message does not appear. When the first low level CAS message lights on, the sequencer immediately selects the other tank. The selected tank will operate until the second low level CAS message lights on. When both low level CAS messages are visible, the sequencer changes tanks every minute and 15 seconds.

■ All**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-knob allows the pilot to test system proper operation anytime.

When the system operates, the fuel tank is changed when "SHIFT" push-knob is pressed once.

If airplane is on ground or in flight, low level warning lights not illuminated, 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 wants to take fuel.*

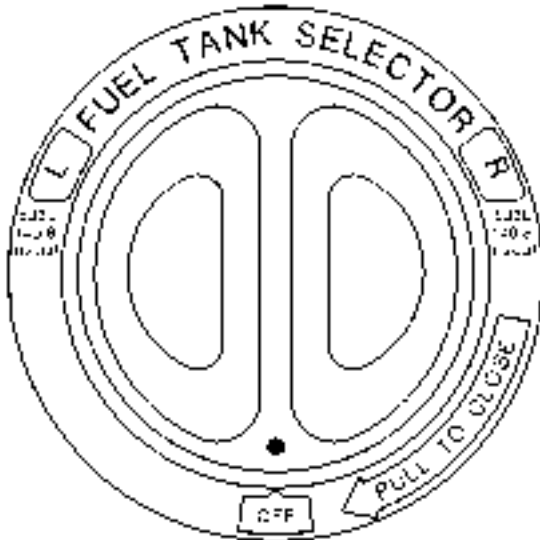
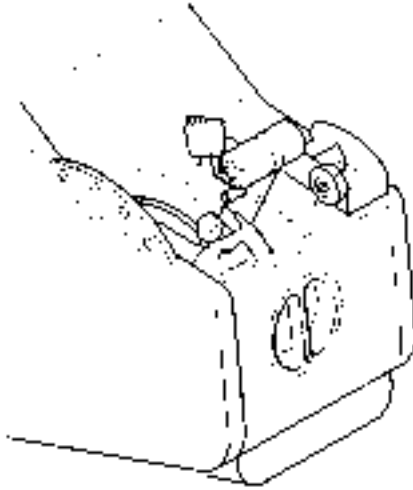
In all cases, proper system operation is indicated by rotation of the manual selector.

Setting "FUEL SEL" switch to "MAN" position or setting manual selector to "OFF" position leads to system de-activating and appearance of "AUTO SEL" CAS message. "AUTO SEL" CAS message 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.



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Figure 7.7.2 - MANUAL SELECTOR OF FUEL TANKS





## 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 us gal (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)
- "AUX BOOST PMP ON" :  
Electric fuel pump running (manual or automatic mode)
- "FUEL LOW L-R"\* : Fuel quantity less than or equal to 9 us gal (34 Litres) of usable fuel in specified tank
- "AUTO SEL" : Sequencer inactive or operating defect

\* Only affected side (L, R or L-R) displayed in CAS message

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■ **FUEL SYSTEM DRAINING AND CLOGGING INDICATOR** (Figure 7.7.4)

The fuel system comprises five drain points, a drain on the filter bowl, two drain valves on each tank, located on wing lower surface, on wing root side.

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.

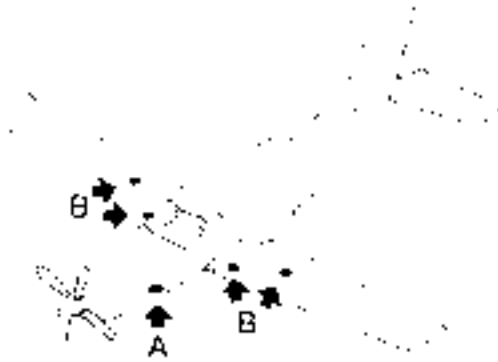
Fuel system draining shall be performed prior to the first flight of the day and after each tank refueling, using a sampler to pick off fuel at the two drain valves of each tank and at the filter vent valve.

A red filter bypass flag on the fuel unit and visible from outside through a lens located on L.H. side under front baggage compartment indicates filter clogging. 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 power plant from fuel. The power plant is then supplied with non-filtered fuel.*

**Valid from S/N 1 to 92**



- 1) Clogging indicator
- 2) Lens
- 3) Central access door
- 4) Filter drain
- 5) Tank drain
- 6) Drain bowl

FUEL SYSTEM

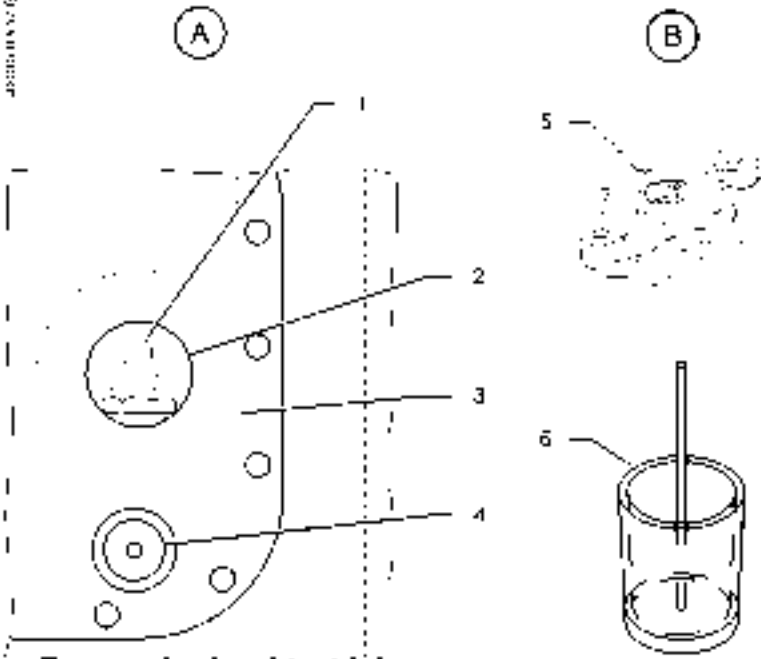


Figure 7.7.4 - FUEL SYSTEM DRAINING POINTS AND CLOGGING INDICATOR

**Valid from S/N 1 to 92**

**FUEL SYSTEM DRAINING AND CLOGGING INDICATOR** (Figure 7.7.4A)

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.

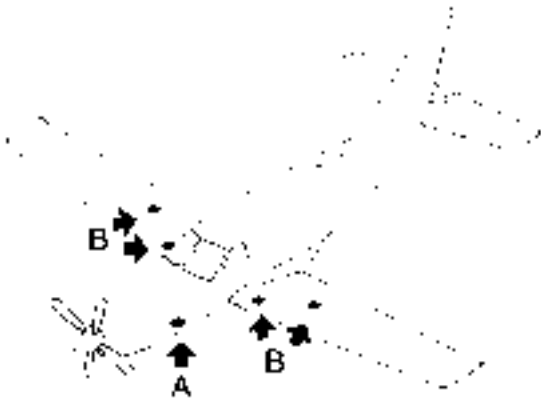
Fuel tank drain valves are provided with a slot which allows opening them with a screwdriver.

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 power plant from fuel. The power plant 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

11223, 011 646-9855024

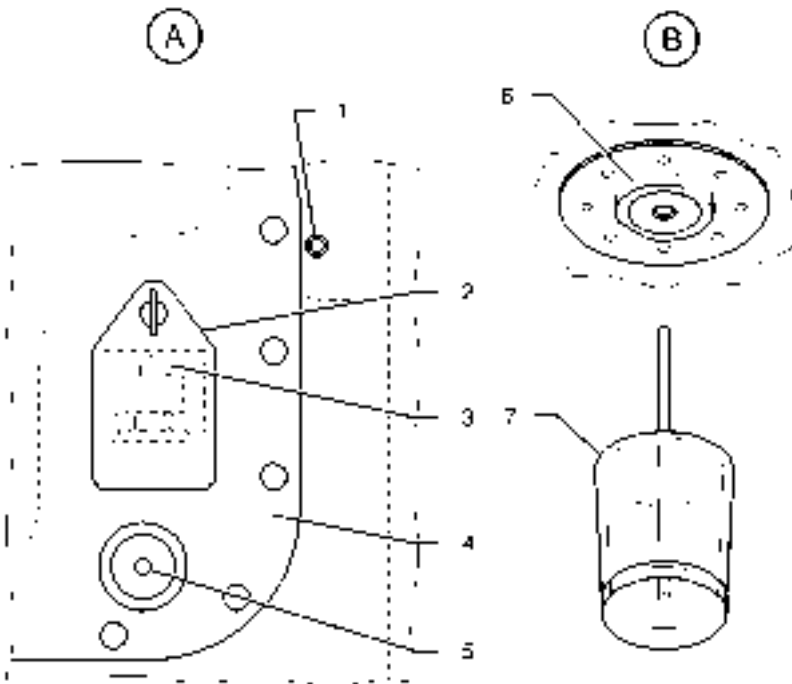


Figure 7.7.4A - FUEL SYSTEM DRAINING POINTS AND CLOGGING INDICATOR

**Valid from S/N 93 to 9999**

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**7.8 - ELECTRICAL SYSTEM** (Figures 7.8.1 and 7.8.4)

The airplane is fitted with a direct-current electrical system rated to 28 volts with negative pole at ground.

Airplane mains supply is obtained from various power supplies :

- an engine driven starter generator
- a stand-by generator driven by the engine through a belt
- a battery located in engine compartment
- a ground power receptacle located in engine compartment, on L.H. side. It is accessible from outside through a door.

Connection relays, main bus bar, generator regulation and protection systems and control logic systems are grouped in electrical power center attached to front baggage compartment upper section.

Electrical system indicating is displayed on the GDU 1500 MFD and monitoring is ensured by CAS messages.

**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" CAS message disappearance.

## **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 :**

*In order to prevent possible errors during flight, access to "ST-BY" position requires a double action from the pilot (pull to unlock).*

## **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 "BAT BUS" bus bar except when CRASH lever is pulled down.

Battery connection to main bus bar is controlled through "SOURCE" selector set to "BAT" position.

"BAT OFF" CAS message 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.

### **NOTE :**

*Ground power receptacle has priority on other generators.*

Ground power receptacle door opening is indicated by "GPU DOOR" CAS message appearance.

## DISTRIBUTION

Airplane electrical systems are connected to "BUS" bars and protected by "pull-off" type circuit breakers located on R.H. side panel (See Figure 7.8.3). In case of overload of a system, the circuit breaker triggers and switches the system off. Allow it to cool for about three minutes, then the circuit breaker may be reengaged (pressed down).

"BUS 1", "BUS 2" and "BUS 3" bus bars are directly connected to main bus bar and protected by fuses located in electrical power center.

The "ESS BUS 1" and "ESS BUS 2" essential bus bars are connected to main bus bar through "ESS BUS TIE" selector set to NORM position. "ESS BUS TIE" selector is attached to circuit breaker panel ; NORM position is protected and locked by a cover. Common power supply to both essential bus bars is protected by a fuse, each bar being individually protected by a circuit breaker.

"BATT BUS" bar is directly connected to the battery ; it is protected by a fuse located in electrical power center.

### NOTE :

*The electrical distribution of bus bars is described in Figure 7.8.2.*

## 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 "BAT" 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" selector to "EMER" position

In this configuration, only "ESS 1", "ESS 2" and "BAT BUS" bars are supplied.

### NOTE :

*Supplying "BUS 1", "BUS 2", "BUS 3" and (if installed) "BUS 4" bars is always possible, resetting temporarily "ESS BUS TIE" selector to "NORM" position.*

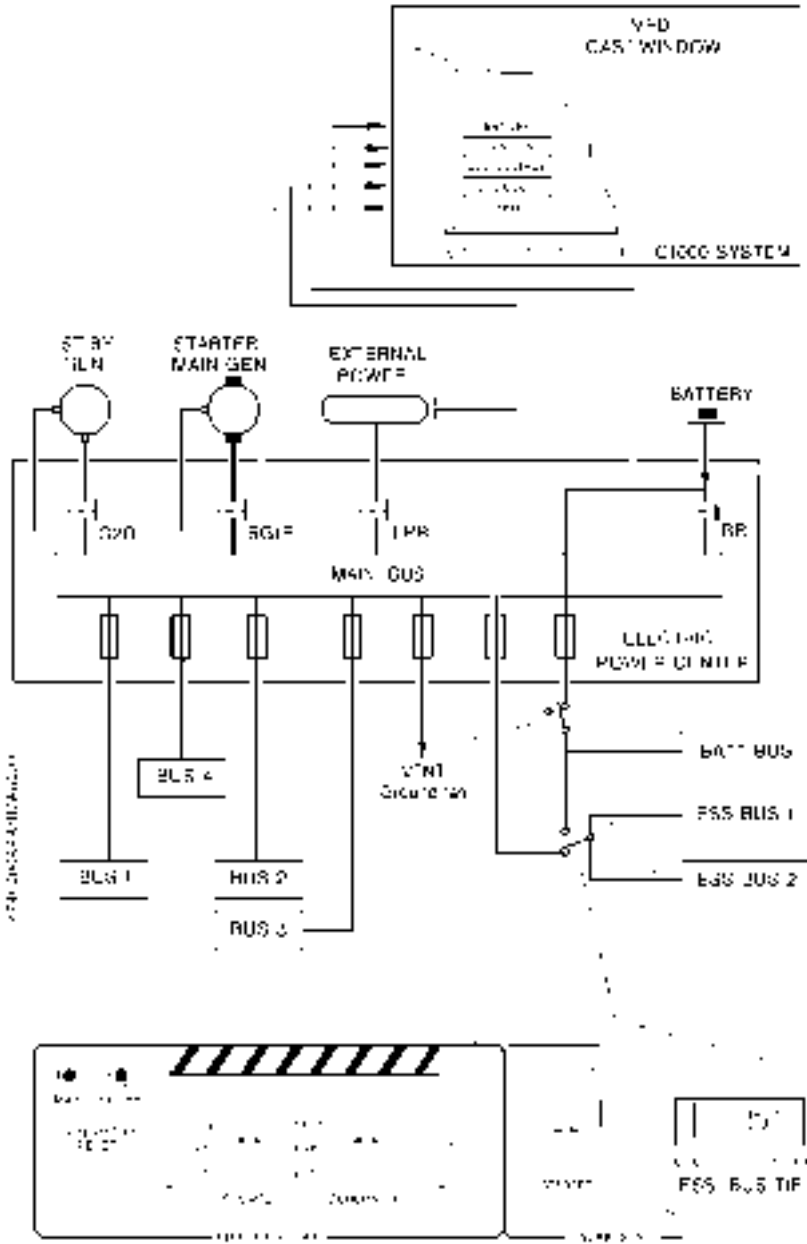


Figure 7.8.1 - ELECTRICAL DIAGRAM

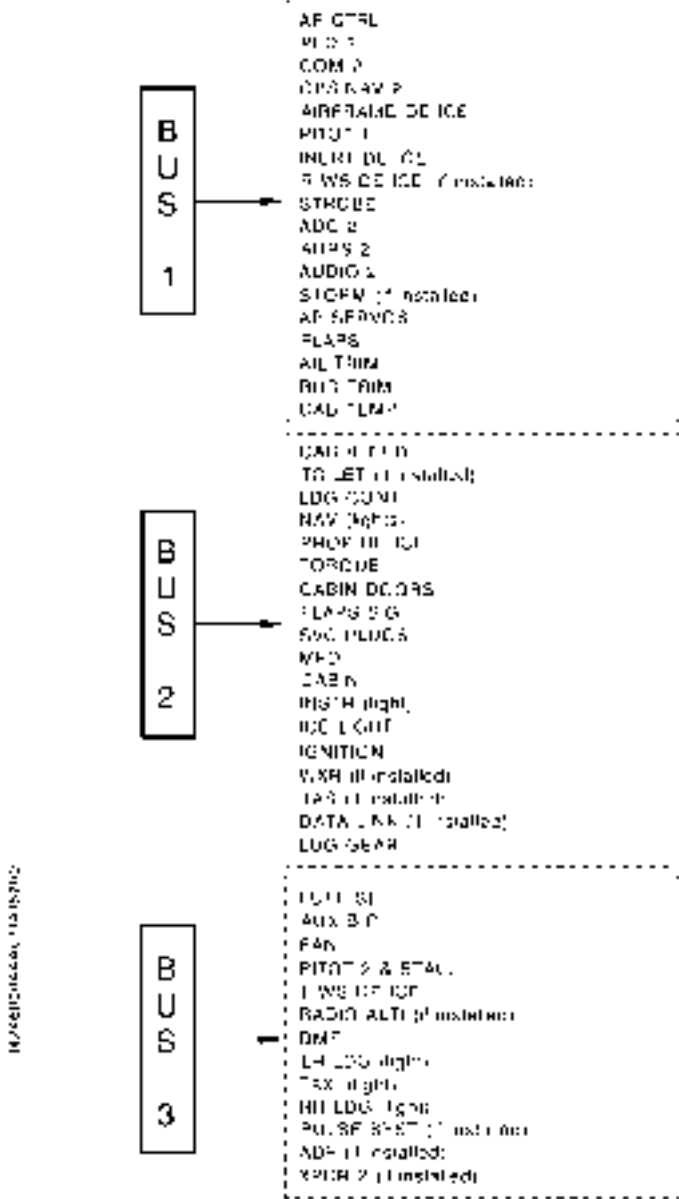
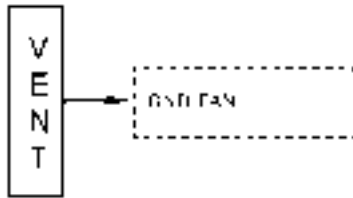


Figure 7.8.2 (1/3) - ELECTRICAL DISTRIBUTION OF BUS BARS



NOTE: CIRCUIT BREAKERS ON A1 SUPPORT PLATE



NOTE: CIRCUIT BREAKERS ON A1 SUPPORT PLATE

REVISED 11/30/2010

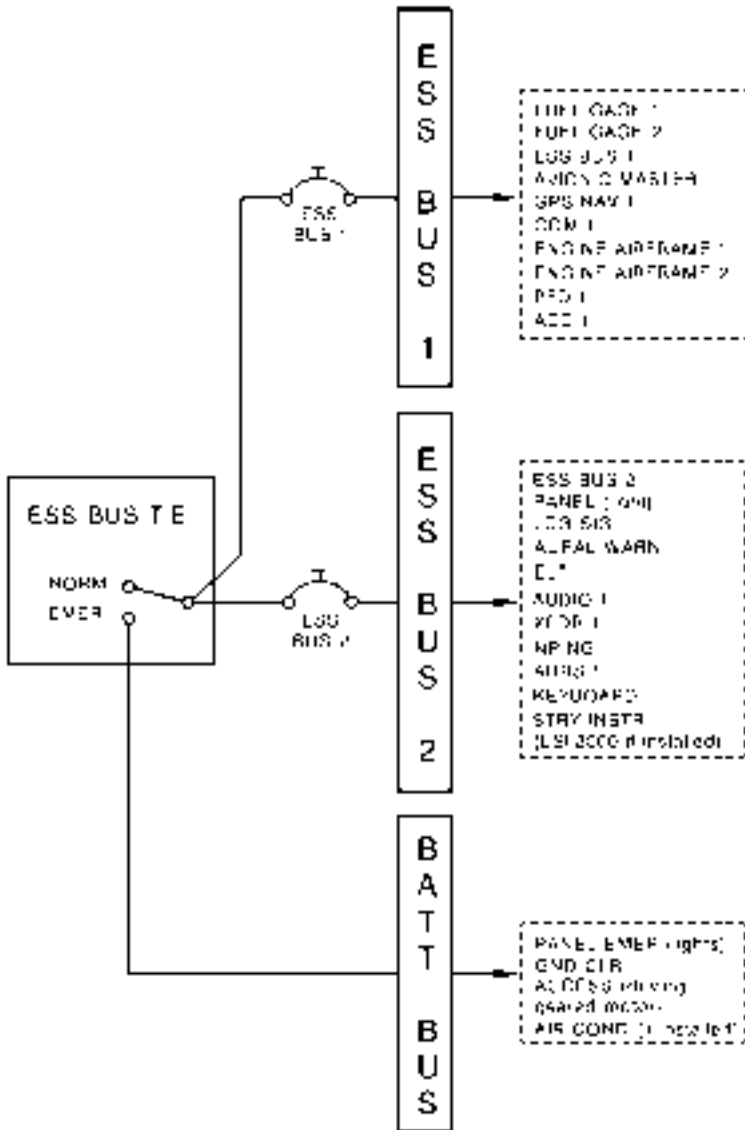


Figure 7.8.2 (3/3) - ELECTRICAL DISTRIBUTION OF BUS BARS

<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
AVIONICS	"AVIONICS MASTER" switch protection
MASTER	
<b>ESS BUS 2</b>	
ESS BUS 2	Essential bus 2 circuit protection
PANEL	Instrument panel normal lighting protection
LDG SIG	Landing gear indicating system protection
KEYBOARD	Keyboard protection
AUDIO 1	Audio control panel 1 protection
AHRS 1	Attitude and Heading Reference System 1 protection
XPDR 1	Transponder 1 protection
ELT	Emergency Locator Transmitter protection
AURAL	Aural warnings protection
WARN	
NP/NG	Tachometer signal conditioner protection
STBY INSTR	Electronic Standby Indicator (ESI-2000) protection (if installed)
<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
AHRS 2	Attitude and Heading Reference System 2 protection
STORM	Stormscope protection (if installed)
AIRFRAME	Empennage and wing leading edges deicing
DE ICE	

(Continued on next page)

Figure 7.8.3 (1/3) - CIRCUIT BREAKER PANEL (Typical arrangement)



<b>BUS 1</b> (Continued)	
<b>INERT DE ICE</b>	Inertial separator protection
<b>R WS DE ICE</b>	R.H. windshield deicing protection (if installed)
<b>PITOT 1</b>	Pitot 1 heating protection
<b>AUDIO 2</b>	Audio control panel 2 protection
<b>STROBE</b>	Strobe lights protection
<b>CAB TEMP</b>	Cabin temperature control sensor
<b>BUS 2</b>	
<b>ICE LIGHT</b>	L.H. wing leading edge lighting and lighting test protection
<b>PROP DE ICE</b>	Propeller deicing protection
<b>LDG CONT</b>	Landing gear control protection
<b>CAB BLEED</b>	Cabin pressurization protection
<b>NAV</b>	Navigation lights protection
<b>CABIN DOORS</b>	Cabin doors opening protection
<b>FLAPS</b>	Trim and flaps regulator protection
<b>SIG</b>	
<b>SVC PLUGS</b>	28 VDC plugs (std) or 12 VDC plugs (optional) protection
<b>MFD</b>	Multifunction display protection
<b>CABIN INSTR</b>	Passenger's reading lamps protection
<b>TORQUE</b>	Instruments lighting protection
<b>IGNITION</b>	Torque control protection
<b>TAS</b>	Powerplant ignition protection
<b>WXR</b>	TAS (if installed) protection
<b>DATA LINK</b>	Weather radar (if installed) protection
	Data Link (if installed) protection
<b>BUS 3</b>	
<b>L WS DE ICE</b>	L.H. windshield deicing protection
<b>PITOT 2 &amp; STALL</b>	Pitot 2 and stall warning heating protection
<b>FUEL SEL</b>	Tank selector timer protection
<b>AUX BP</b>	Electrical fuel pump protection
<b>LH LDG</b>	L.H. landing light protection
<b>RH LDG</b>	R.H. landing light protection
<b>TAXI</b>	Taxi light protection
<b>PULSE SYST</b>	Pulse lite system protection (if installed)
<b>DME</b>	DME protection (if installed)
<b>XPDR 2</b>	Transponder 2 (if installed) protection
<b>RADIO ALTI</b>	RADIO ALTI (if installed) protection
<b>ADF</b>	ADF protection (if installed)
<b>FAN</b>	Cabin fan
<b>BATT BUS</b>	
<b>PANEL EMER</b>	Instrument panel emergency lighting protection
<b>GND CLR</b>	Ground clearance protection
<b>ACCESS</b>	Cabin access lighting protection
<b>AIR COND</b>	Cabin ventilation and vapor cycle system protection

Figure 7.8.3 (2/3) - CIRCUIT BREAKER PANEL (Typical arrangement)



**INDICATING**

Electrical system indicating consists of voltage and ampere indicating – refer to GARMIN G1000 Cockpit Reference Guide for further details.

Following CAS messages may appear on the MFD CAS display :

- "BAT OFF" : Battery is not connected to main bus bar and the latter is supplied by another power source
- "MAIN GEN" : Starter generator is not connected to main bus bar
- "LOW VOLTAGE" : Battery voltage is below the minimum value and main bus bar is supplied
- "GPU DOOR" : Ground power receptacle access door is not closed

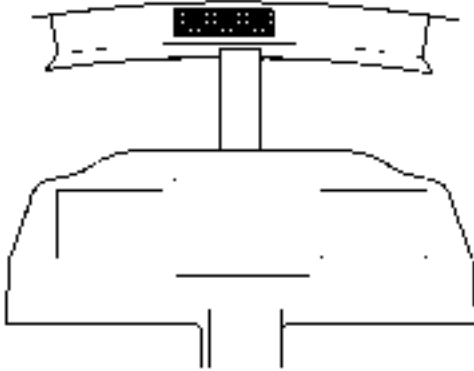
**PROTECTION - SAFETY** (Figure 7.8.4)

The electrical power center provides systems protection in case of :

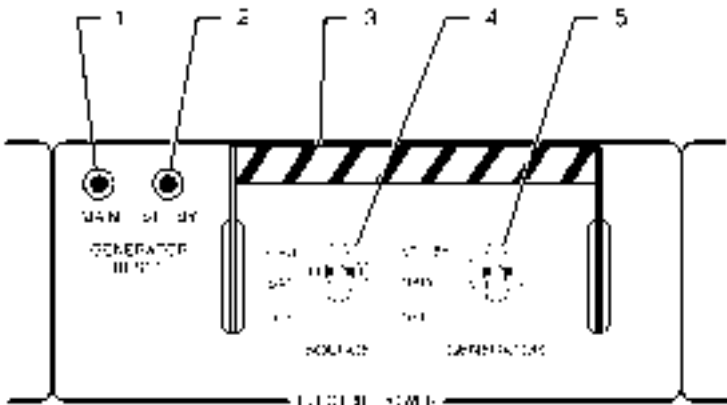
- overvoltage coming from the starter generator, the stand-by generator or the ground power receptacle
- short-circuit in starter generator feeder
- starter generator undervoltage

In case of disconnection of starter generator or stand-by generator following a failure, it is possible to re-activate the system by pressing on "MAIN" or "ST-BY" knob of "GENERATOR RESET".

A **crash lever** located on upper panel center part allows isolating simultaneously "BUS BAT" bar and setting to "OFF", "SOURCE" and "GENERATOR" selectors when lowered. 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



REV 10-01-03-00-1 REV 01-03-03

Figure 7.8.4 – ELECTRICAL CONTROL

**EXTERIOR LIGHTING** (Figure 7.8.5)

The airplane is equipped with two navigation lights, two strobe lights, two landing lights, a taxi light, a wing leading edge icing inspection light.

A "LTS TEST" test-knob located above lights switches allows checking proper operation of warning lights ; their brightness may be dimmed by the "DIMMER" switch (if installed).

**Landing lights**

Landing lights are located at each wing tip and located in leading edges. Lights illumination is controlled by "L. LDG" and "R. LDG" switches located on upper panel. A warning light is incorporated in each switch to indicate proper operation of used landing light.

**Taxi light**

The taxi light is attached to the nose gear, it is controlled by "TAXI" switch located on upper panel. A warning light is incorporated in this switch to indicate proper operation of used light.

**Navigation lights and strobe lights**

Navigation lights and strobe lights are installed on wing tips. 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.*

### **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 (Figure 7.13.1).

### **Front baggage compartment light (if installed)**

The dome light of the front baggage compartment has two positions :

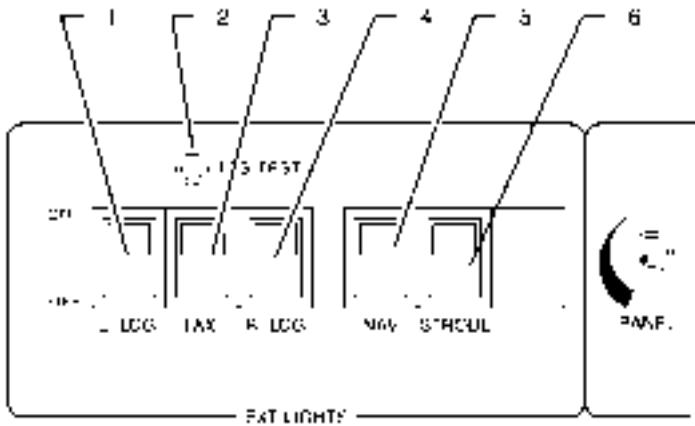
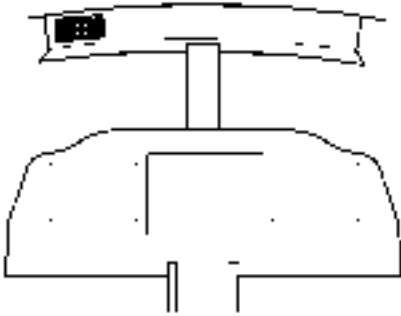
- the first allows automatic illumination via the switch located in the upper section of the door frame,
- the second maintains the dome light permanently off regardless of the door position.

### **Fuel unit compartment light (if installed)**

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.

- 1) L.H. landing light switch
- 2) Test knob (test light integrated to switches)
- 3) Taxi light switch
- 4) R.H. landing light switch
- 5) Navigation lights switch
- 6) Strobe lights switch

Figure 7.8.5 (1/2) - EXTERNAL LIGHTING CONTROLS



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Figure 7.8.5 (2/2) - EXTERNAL LIGHTING CONTROLS



**INTERIOR LIGHTING** (Figure 7.8.6)

Interior lighting consists of access, cabin, instrument panel, instruments, baggage compartments and emergency lighting.

**Access lighting**

Access lighting consists of two floodlights located on the ceiling upholstery (one at the level of the access door, the other at the level of the storage cabinet) and the L.H. dome light of rear baggage compartment. "ACCESS" switch on "INT LIGHTS" panel and the switch located on access door rear frame are two-way switches type and control these 3 lights.

**Cabin lighting**

Cabin lighting consists of two swiveling floodlights for front seats, six individual floodlights for rear passenger seats and the R.H. dome light of rear baggage compartment. Each floodlight is controlled by a switch located on side upholstery strip. The floodlight above the table is controlled by two switches which are two-way switches type. The pilot can switch off the cabin floodlights and the dome light of rear baggage compartment with the "CABIN" switch.

**Instrument panel lighting**

Instrument panel lighting is controlled by the "PANEL" rheostat located on "INT. LIGHTS" panel. This lighting consists of postlights.

**Stand-by instruments lighting**

The lighting integrated in stand-by instruments is controlled by the "INSTR" rheostat located on "INT LIGHTS" panel.

**Emergency lighting**

Emergency lighting consists of two swiveling floodlights located on the upper duct above front seats. It illuminates instrument panel assembly in case of instrument integrated lighting failure.

The 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.

**Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 9999,  
plus airplanes equipped as a retrofit with  
modification Nr MOD 70-019-25**

### **Map reading light illumination**

The illumination of the map reading light located on L.H. station control wheel is controlled by the switch (rheostat) located on this light.

**Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 9999,  
plus airplanes equipped as a retrofit with  
modification Nr MOD 70-019-25**

- 1) Instrument panel lighting switch (rheostat)
- 2) Instrument lighting switch (rheostat)
- 3) "DIMMER" switch
- 4) Cabin lighting switch (rear seats reading light)
- 5) Access door, baggage compartment and FWD dome light (delayed breaker) push-button
- 6) Emergency lighting switch

Figure 7.8.6 (1/2) - INTERNAL LIGHTING CONTROLS  
**Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes  
equipped as a retrofit with  
modification Nr MOD 70-019-25**

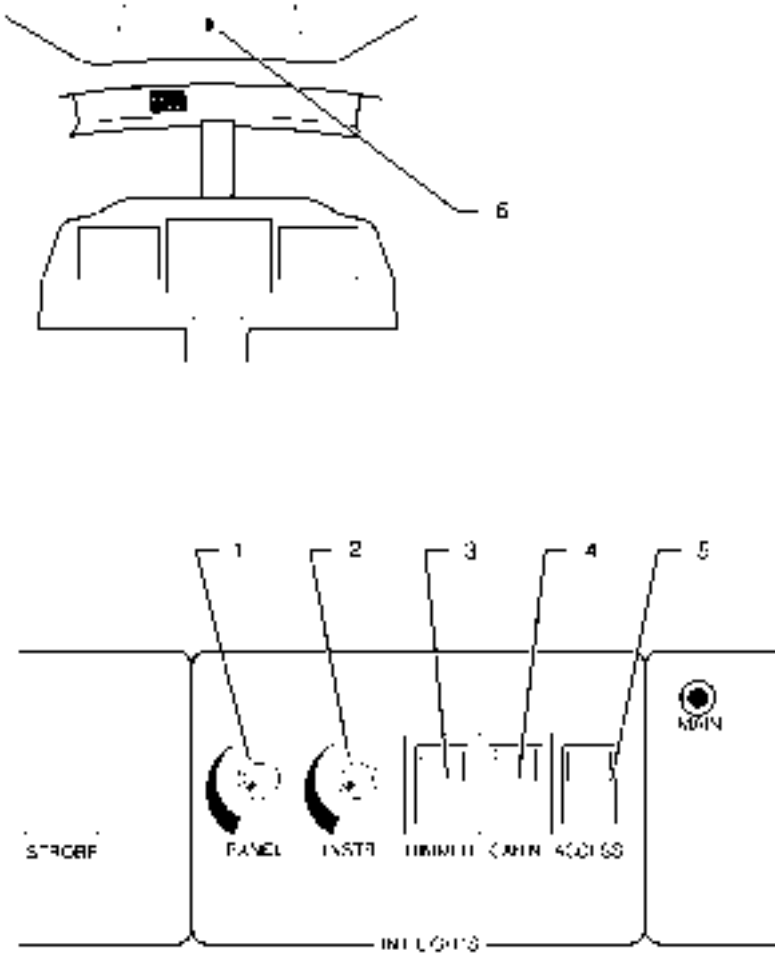


Figure 7.8.6 (2/2) - INTERNAL LIGHTING CONTROLS  
Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 9999, plus airplanes  
equipped as a retrofit with  
modification Nr MOD 70-019-25

## 7.9 - AIR CONDITIONING AND PRESSURIZATION

### AIR CONDITIONING (Figure 7.9.1)

Air conditioning system includes a flow-pressure regulation system, temperature regulation and cooling system, control and check systems and distribution.

Air necessary for conditioning is picked up from the engine. A two-setting level valve regulates pressure and bleed hot air flow and may be also used as shutoff valve. This valve is controlled by "BLEED VALVE" switch. Hot air is cooled by going through a temperature exchanger and a cooling turbine, then it reduces the humidity through the water separator before entering the cabin through a check-valve.

Temperature exchanger is located in a duct which directs cooling air. This air is picked up outside by the NACA scoop located on L.H FWD engine cowling. When the airplane is on ground, air flow is created by a fan which, (if "BLEED VALVE" switch is set to "ON"), starts automatically.

#### Temperature regulation

Temperature regulation is accomplished by adding hot air to the air coming from cooling turbine. A probe measures the temperature of conditioning air as it enters the cabin, and acts on a temperature regulation valve which determines hot air quantity to be added for maintaining requested temperature in the cabin.

#### Distribution

Conditioned air enters the distribution box from where it is dispatched into the cabin through two outlets located at the level of rudder pedals, a row of ports located on the lower section of the L.H. and R.H. side upholstery and through defogging outlets. The air outlets of the passenger seats and of the cockpit canopy are supplied with fresher air by two fans located on the upper section of the rear pressurized bulkhead. The air outlets of the cockpit arm-rests are supplied by two fans integrated into the upholstery. The four fans are controlled by the "CABIN FAN" switch on "ECS" panel.

**Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 85, 87, 90  
+ S/N 1 to 23, 25, 28, 33 and 35 with modification  
No. MOD70-019-25**

- 1) Overheat switch
- 2) Cooling turbine
- 3) Hot air - cold air mixer
- 4) Water separator
- 5) Temperature control valve
- 6) Pressure regulator of temperature control valve
- 7) Check-valve
- 8) Temperature control sensor
- 9) Cabin emergency air inlet
- 10) Defogging outlets
- 11) Adjustable air outlets
- 12) Air conditioning fans
- 13) Distribution box
- 14) G1000 System (CAS messages)
- 15) Microswitch (airplane on ground)
- 16) Pressure regulator and shutoff valve
- 17) Flow limiting venturi
- 18) Ground cooling fan
- 19) Spray nozzle aspirator
- 20) Heat exchanger
- 21) Pilot's and front passenger's feet heating

Figure 7.9.1 (1/2) - AIR CONDITIONING

**Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 85, 87, 90 + S/N 1 to 23, 25,  
28, 33 and 35 with modification No. MOD70-019-25**

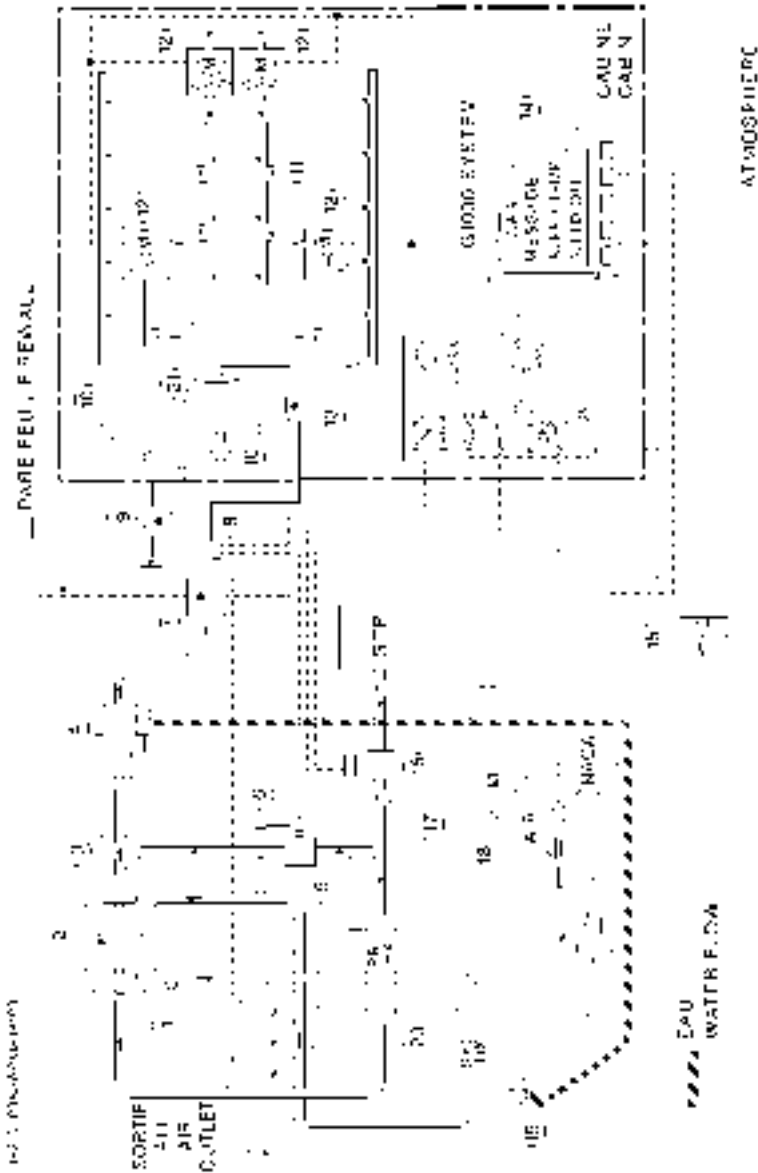


Figure 7.9.1 (2/2) - AIR CONDITIONING

Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 85, 87, 90 + S/N 1 to 23, 25, 28, 33 and 35 with modification No. MOD70-019-25

**Control and check** (Figure 7.9.3)

Air conditioning system controls are located on "ECS" panel, CAS messages are grouped on MFD unit. Conditioning occurs when "BLEED VALVE" switch is set to "ON" ; this leads to opening of pressure regulation valve and leads to "BLEED OFF" CAS message disappearance, requested pressure level is obtained by "HI LO" switch position.

An overheating detector leads to the "BLEED TEMP" CAS message appearance and simultaneously shuts off the pressure regulation valve if temperature increases abnormally at cooling turbine compressor outlet. System cannot be reactivated as long as "BLEED TEMP" CAS message is displayed. After "BLEED TEMP" CAS message has disappeared, set "BLEED VALVE" switch to "OFF", then to "ON" to reactivate the system.

"CABIN FAN" switch controls the operation of four fans for the fresh air distribution system. The requested temperature in the cabin may be modified by the "CABIN TEMP" control.

The quantity of conditioning air used for windshield defogging may be modified by the "DEFOG-NORMAL" control.

Emergency ventilation control "EMERGENCY RAM AIR", located under R.H. instrument panel facing control wheel, allows outside air to enter the cabin through a valve. In "NORMAL" position, the valve is shut off and the control is locked. To open emergency ventilation valve, press on locking knob and move control rearwards.

**Valid S/N 24, 26, 27, 29 to 32, 34, 36 to 85, 87, 90  
+ S/N 1 to 23, 25, 28, 33 and 35 with modification  
No. MOD70-019-25**



## 7.9 - AIR CONDITIONING AND PRESSURIZATION

### AIR CONDITIONING (Figure 7.9.1A)

Air conditioning system includes a flow-pressure regulation system, temperature regulation and cooling system, control and check systems and distribution.

Air necessary for conditioning is picked up from the engine. A two-setting level valve regulates pressure and bleed hot air flow and may be also used as shutoff valve. This valve is controlled by "BLEED VALVE" switch. Hot air is cooled by going through a temperature exchanger and a cooling turbine, then it reduces the humidity through the water separator before entering the cabin through a check-valve.

Temperature exchanger is located in a duct which directs cooling air. This air is picked up outside by the NACA scoop located on L.H FWD engine cowling. When the airplane is on ground, air flow is created by a fan which, (if "BLEED VALVE" switch is set to "ON"), starts automatically.

#### Temperature regulation

Temperature regulation is accomplished by adding hot air to the air coming from cooling turbine. A probe measures the temperature of conditioning air as it enters the cabin, and acts on a temperature regulation valve which determines hot air quantity to be added for maintaining requested temperature in the cabin.

#### Distribution

Conditioned air enters the distribution box from where it is dispatched into the cabin through two outlets located at the level of rudder pedals, a row of ports located on the lower section of the L.H. and R.H. side upholstery and through defogging outlets. Each seat is also provided with a swivelling and adjustable air outlet, supplied with fresh air assisted by a fan located in pressurized area under the floor and controlled by "CABIN FAN" switch on "ECS" panel.

- 1) Overheat switch
- 2) Cooling turbine
- 3) Hot air - cold air mixer
- 4) Water separator
- 5) Temperature control valve
- 6) Pressure regulator of temperature control valve
- 7) Check-valve
- 8) Temperature control sensor
- 9) Cabin emergency air inlet
- 10) Defogging outlets
- 11) Adjustable air outlets
- 12) Air conditioning fan
- 13) Distribution box
- 14) G1000 system (CAS messages)
- 15) Microswitch (airplane on ground)
- 16) Pressure regulator and shutoff valve
- 17) Flow limiting venturi
- 18) Ground cooling fan
- 19) Spray nozzle aspirator
- 20) Heat exchanger
- 21) Pilot's and front passenger's feet heating

Figure 7.9.1A (1/2) - AIR CONDITIONING  
**Valid S/N 86, 88, 89, 91 to 9999**

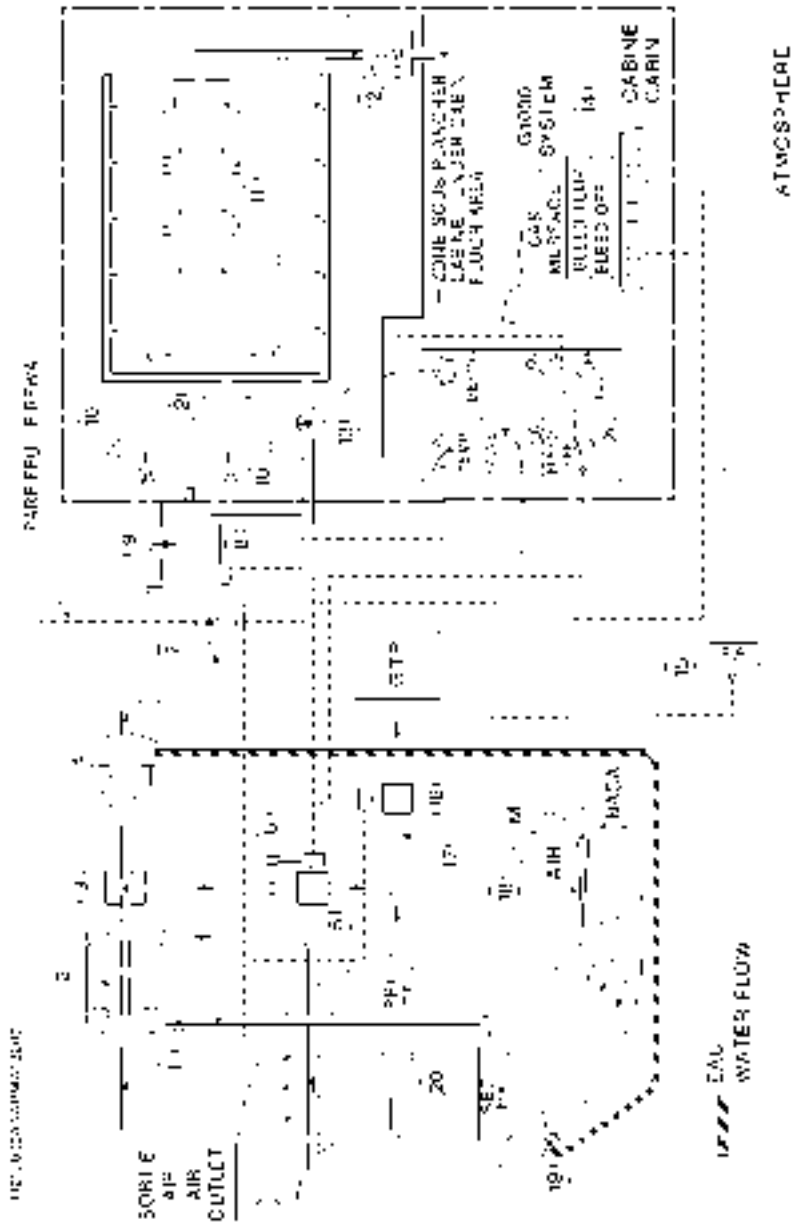


Figure 7.9.1A (2/2) - AIR CONDITIONING  
Valid S/N 86, 88, 89, 91 to 9999

**Control and check** (Figure 7.9.3)

Air conditioning system controls are located on "ECS" panel, CAS messages are grouped on MFD unit. Conditioning occurs when "BLEED VALVE" switch is set to "ON" ; this leads to opening of pressure regulation valve and leads to "BLEED OFF" CAS message disappearance, requested pressure level is obtained by "HI LO" switch position.

An overheating detector leads to the "BLEED TEMP" CAS message appearance and simultaneously shuts off the pressure regulation valve if temperature increases abnormally at cooling turbine compressor outlet. System cannot be reactivated as long as "BLEED TEMP" CAS message is displayed. After "BLEED TEMP" CAS message has disappeared, set "BLEED VALVE" switch to "OFF", then to "ON" to reactivate the system.

"CABIN FAN" switch controls the operation of the fan for the fresh air distribution system and allows selecting two ventilation speeds. The requested temperature in the cabin may be modified by the "CABIN TEMP" control.

The quantity of conditioning air used for windshield defogging may be modified by the "DEFOG-NORMAL" control.

Emergency ventilation control "EMERGENCY RAM AIR", located under R.H. instrument panel facing control wheel, allows outside air to enter the cabin through a valve. In "NORMAL" position, the valve is shut off and the control is locked. To open emergency ventilation valve, press on locking knob and move control rearwards.

**PRESSURIZATION** (Figures 7.9.2 and 7.9.3)

Pressurization system maintains the pressure corresponding to an altitude compatible with passengers' safety and comfort inside the cabin.

The system uses the air conditioning system to pressurize the cabin and the vacuum generation system for check and safety. Pressure controller, located on "ECS" panel allows pilot selecting :

- a cabin altitude between sea level and 8900 ft,
- the cabin climb speed.

Cabin altitude is maintained by an outflow valve and a safety valve limits differential pressure between cabin and atmosphere at 6.2 psi (427 mb).

These valves are attached to rear pressure bulkhead and each one is connected to a static port located on rear cone for the outflow valve and under rear baggage compartment for safety valve.

Cabin is automatically depressurized as soon as the airplane is on ground through landing gear switch (airplane on ground) or, if necessary, by actuating "DUMP" switch located on "ECS" panel (in normal operation, this switch is protected and locked by a cover).

**Indicating**

The "CABIN ALTITUDE" warning message appears in the GDU 1500 MFD "CAS" window (in display normal conditions) when the cabin altitude is over 10000 ft or when the cabin-atmosphere differential pressure is higher than 6.2 psi (427 mb).

The "CABIN DIFF PRESS" warning message appears in the GDU 1500 MFD "CAS" window (in display normal conditions) when the cabin-atmosphere differential pressure is over 6.2 psi (427 mb).

**NOTE :**

*"CABIN DIFF PRESS" CAS message displayed has no effect on system functioning - Refer to Section 3 "Emergency procedures".*

- 1) Check valve
- 2) Cabin-atmosphere  $\Delta P$  microswitch
- 3) G1000 system (CAS messages)
- 4) Outflow valve
- 5) Safety valve
- 6) Depressurization valve
- 7) Landing gear switch (airplane on ground)
- 8) Pressure controller
- 9) Cabin altitude warn switch
- 10) Compensation tank

Figure 7.9.2 (1/2) - PRESSURIZATION

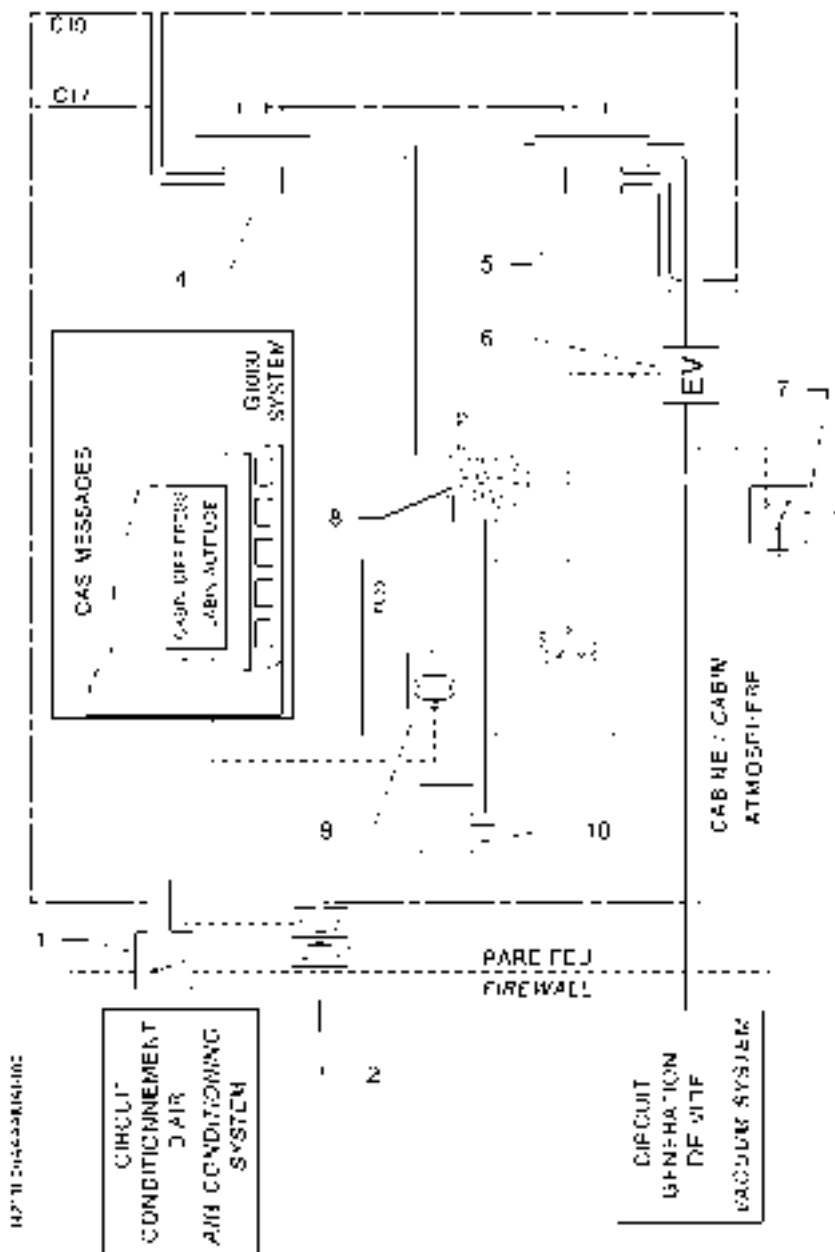
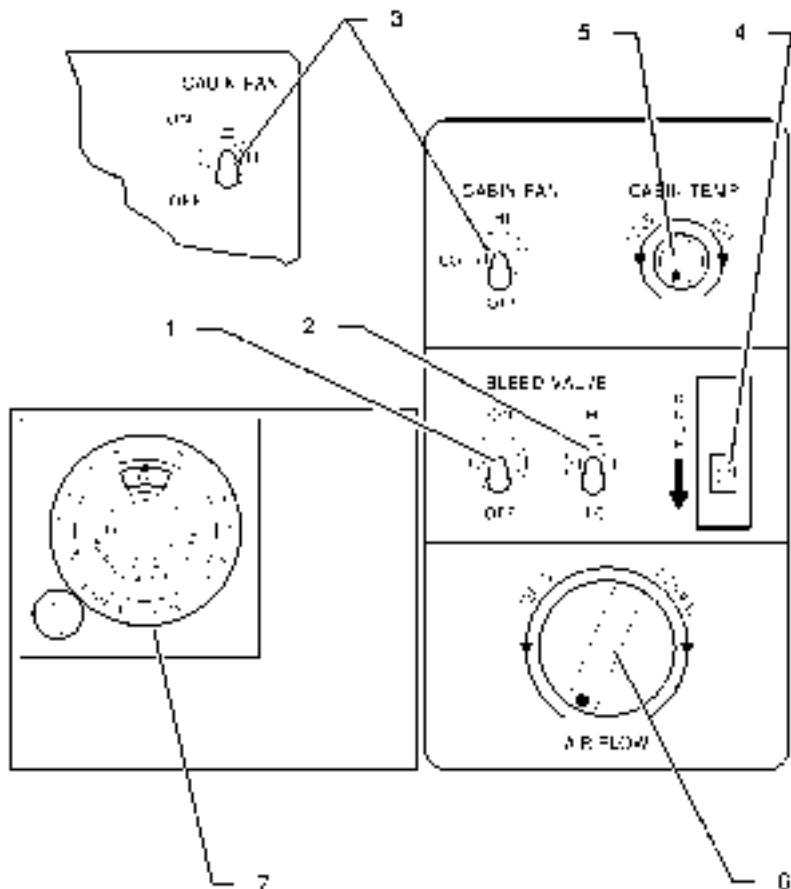


Figure 7.9.2 (2/2) - PRESSURIZATION

- 1) "BLEED VALVE" switch - ON/OFF
- 2) "BLEED VALVE" switch - HI/LO
- 3) "CABIN FAN" switch
- 4) "DUMP" switch
- 5) "CABIN TEMP" selector
- 6) "DEFOG / NORMAL" distributor
- 7) Cabin altitude selector





-27500-000-00000000

Figure 7.9.3 (2/2) - "ECS" CONTROL AND CHECK PANEL

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## 7.10 - EMERGENCY OXYGEN SYSTEM (Figure 7.10.1)

Emergency oxygen system must be used following a pressurization system failure at an altitude between 12000 and 30000 ft. The three emergency oxygen systems provide enough chemical oxygen for six persons during a descent from 30000 to 12000 ft and below. These three systems, accessible from central aisle, are located in a drawer under front passenger seat and under the R.H. and L.H. intermediate seats for rear passengers.

Each system consists of two masks (equipped with microphone for front places)

**NOTE :**

*The pilot must imperatively use a mask equipped with a microphone.*

A transparent flexible tube and a lanyard connect both masks to a generator. When one of the lanyards is pulled, priming mechanism leads to a chemical reaction inside the generator. When activated, the generator supplies oxygen simultaneously to both corresponding masks for about 12 minutes until it becomes empty.

**NOTE :**

*It is not possible to interrupt flow during operation.*

Each generator has two pressure relief valves which avoid an excessive pressure in case of system malfunction or blocking in supply tube.

### **WARNING**

**SMOKING IS STRICTLY PROHIBITED ANY TIME OXYGEN IS IN USE.**

**OILY, FATTY OR GREASY SUBSTANCES, INCLUDING SOAPS, LIPSTICK, AFTER SHAVE LOTION AND MAKE UP ARE CAPABLE OF SPONTANEOUS COMBUSTION ON CONTACT WITH OXYGEN.**

**GENERATOR CHEMICAL REACTION LEADS TO A SENSITIVE INCREASE OF ITS EXTERNAL TEMPERATURE, FOR THAT REASON DO NOT OBSTRUCT ITS PROTECTIVE SHIELD.**



- 1) Generator
- 2) Supply tubes
- 3) Masks
- 4) Drawer
- 5) Microswitch
- 6) Dimpled support
- 7) Microphone switch

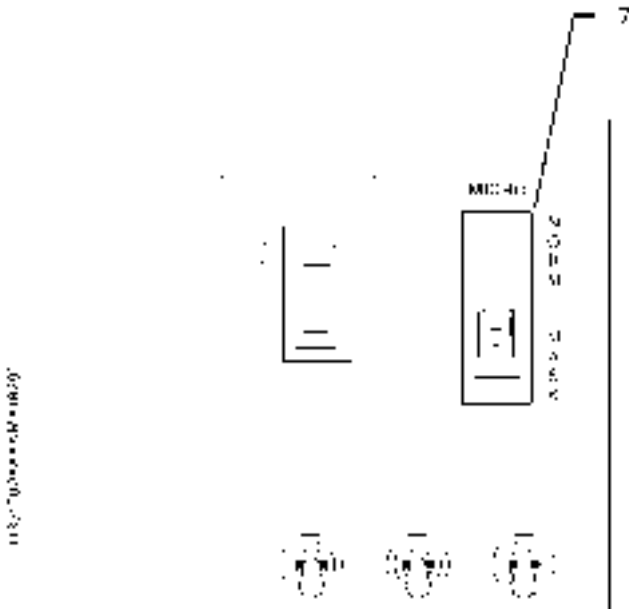


Figure 7.10.1 (1/2) - EMERGENCY OXYGEN SYSTEM

**INDICATING**

When the "SOURCE" selector is set to "BAT" or "GPU", as soon as an oxygen generator is activated, the "OXYGEN" warning CAS message is displayed.

The warning CAS message remains displayed as long as used generator is not replaced. Condition of the coloured band located around the generators provides activated generator identification. Originally amber turning to black indicates a used generator which will require removal and replacement with a new one.

**"MICRO" SWITCH**

A guarded switch, located on the PL12 panel, allows to select oxygen mask microphone. In order to do this, lift up the cover and set the switch to "MASK" position.

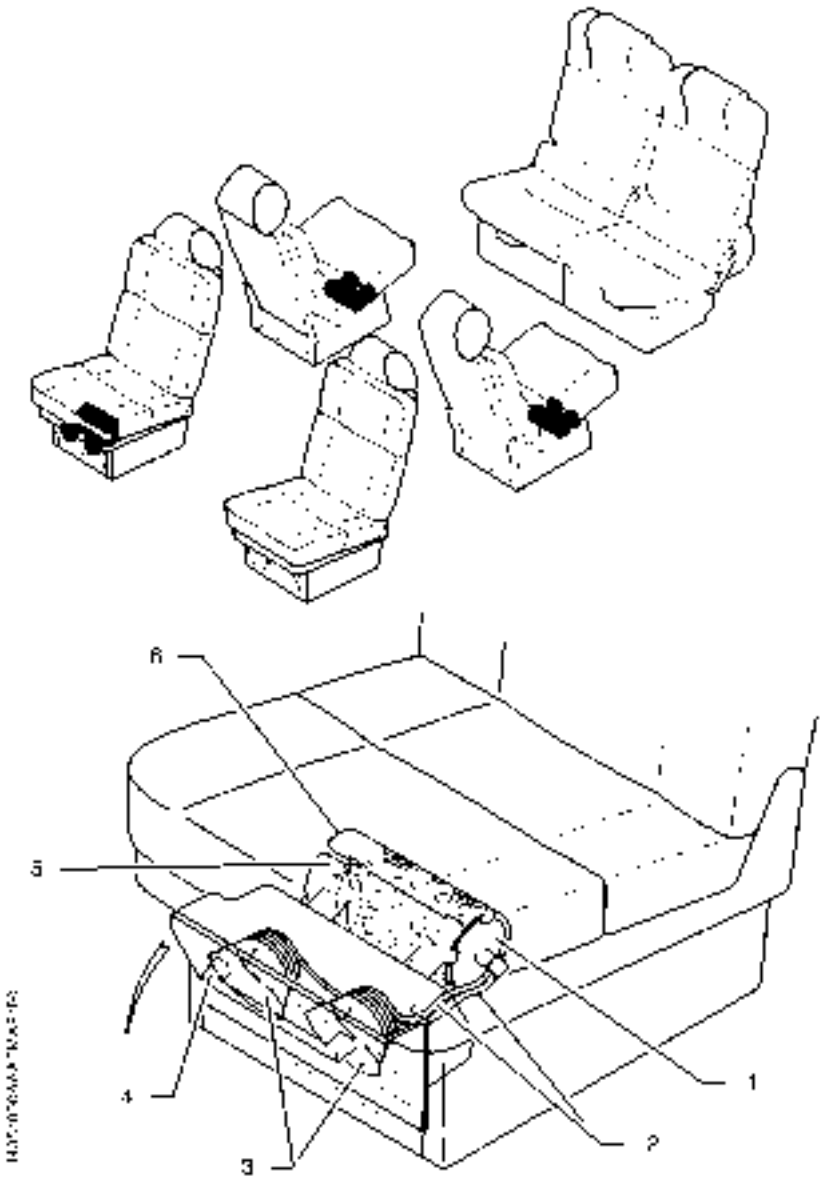


Figure 7.10.1 (2/2) - EMERGENCY OXYGEN SYSTEM

## 7.11 - AIR DATA SYSTEM AND INSTRUMENTS

Pre-MOD70-0335-34 (ESI-2000) (Figure 7.11.1)

Airplane air data system consists of :

- two separate static pressure systems supplying an altimeter, an airspeed indicator 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 airspeed indicator system 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 altimeter, the  $\Delta P$  cabin and the airspeed 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.

- 1) Pitot 1
- 2) Dynamic system drain
- 3) Airspeed indicator
- 4) GDC 74B ADC
- 5) GDC 74B 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) Altimeter
- 13) Instrument panel
- 14) Dynamic system drain
- 15) Pitot 2
- 16) Rear pressure bulkhead
- 17) Static port
- 18) Emergency static port
- 19) Static port
- 20) Dynamic system drain

Figure 7.11.1 (1/2) - AIR DATA SYSTEM  
Pre-MOD70-0335-34 (ESI-2000)



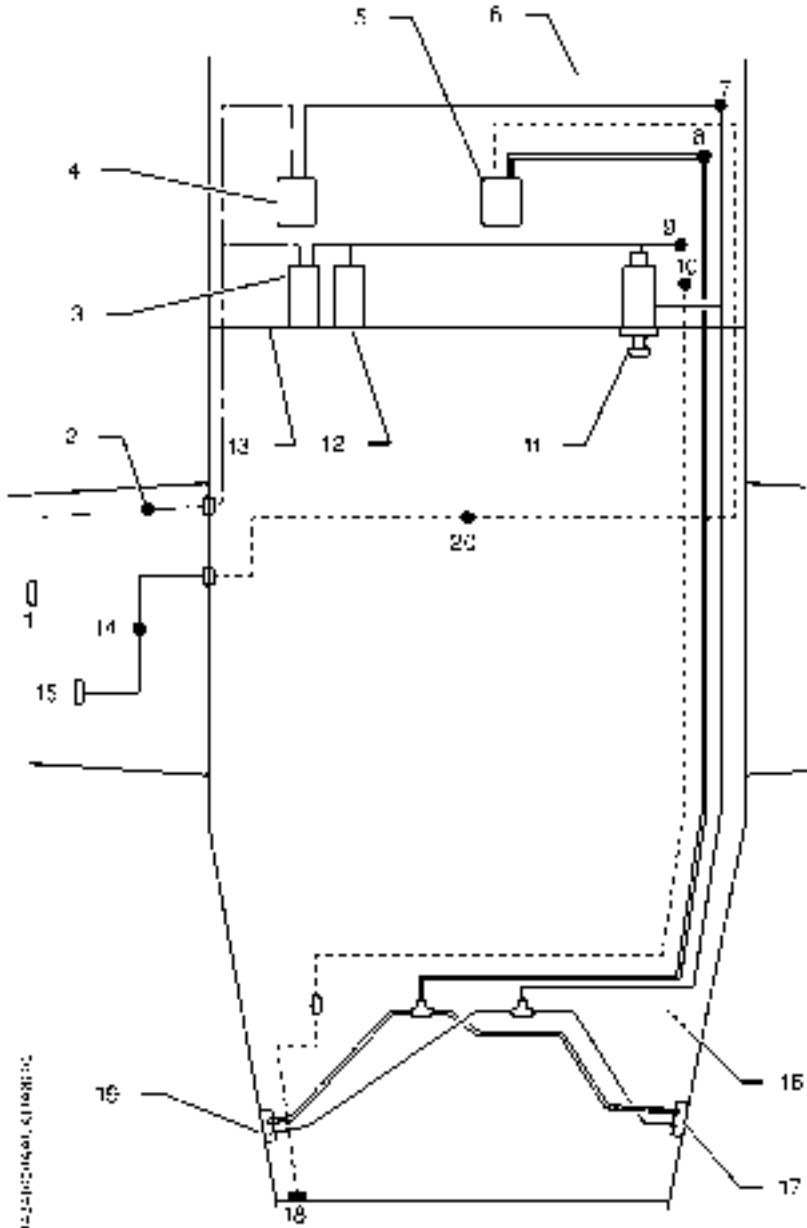


Figure 7.11.1 (2/2) - AIR DATA SYSTEM  
Pre-MOD70-0335-34 (ESI-2000)

■ Post-MOD70-0335-34 (ESI-2000) (Figure 7.11.2)

Airplane air data system consists of :

- two separate static pressure systems supplying an electronic standby indicator 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 electronic standby indicator 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.

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- 1) Pitot 1
- 2) Dynamic system drain
- 3) Electronic Standby Indicator (ESI-2000)
- 4) GDC 74B ADC
- 5) GDC 74B 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 2
- 15) Rear pressure bulkhead
- 16) Static port
- 17) Emergency static port
- 18) Static port
- 19) Dynamic system drain

Figure 7.11.2 (1/2) - AIR DATA SYSTEM  
Post-MOD70-0335-34 (ESI-2000)

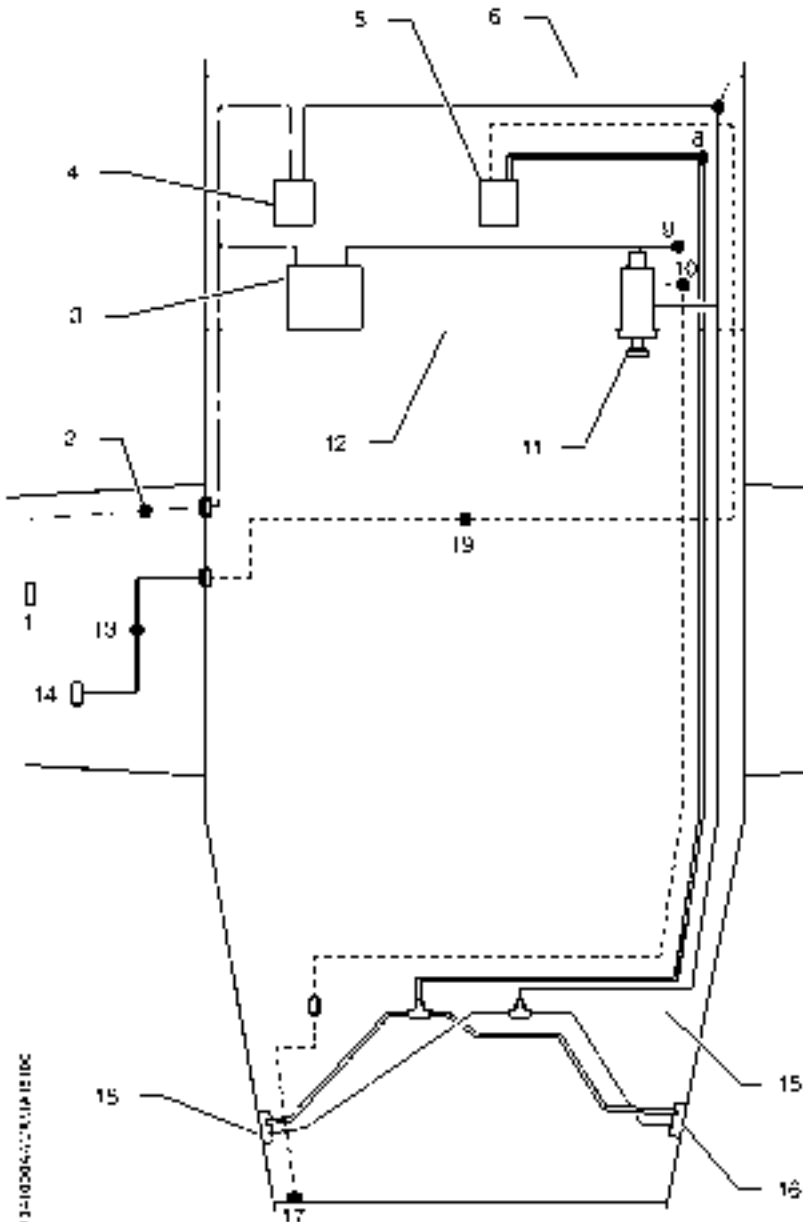


Figure 7.11.2 (2/2) - AIR DATA SYSTEM  
Post-MOD70-0335-34 (ESI-2000)

■ All

**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.

**DYNAMIC PRESSURE SYSTEM**

■ Pre-MOD70-0335-34 (ESI-2000)

Two heated pitot probes are installed under the L.H. wing. The first one supplies the airspeed indicator and the Air Data Computer (ADC).

■ Post-MOD70-0335-34 (ESI-2000)

Two heated pitot probes are installed under the L.H. wing. The first one supplies the electronic standby indicator and one ADC.

■ All

The second one supplies the other ADC.

Both lines incorporate a drain plug located in the L.H. wing root. On dynamic system 2, an additional drain is installed on ADC system. It is located under the floor and is accessible from emergency landing gear door.

**Pitot heating**

Pitot heating is controlled by "PITOT 1 HTR" and "PITOT 2 & STALL HTR" switches, installed on "DE-ICE SYSTEM" panel.

*NOTE :*

*Do not use heating during prolonged periods on ground to avoid pitot overheat.*

## 7.12 - VACUUM SYSTEM AND INSTRUMENTS

Pre-MOD70-0335-34 (ESI-2000) (Figure 7.12.1)

The airplane is fitted with a vacuum system providing the suction necessary to operate the attitude indicator, the cabin pressurization and the leading edge deicing.

Vacuum system includes :

- A pressure regulator
- An ejector
- A regulating and relief valve
- A pressure switch
- A suction gage indicator

Compressed air necessary for the ejector to create decompressed air is taken from the power plant. 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 and instrument systems. In case of pressure drop, a pressure switch, installed in the system, indicates the failure by causing the "VACUUM LOW" CAS message to light on.

### STAND-BY ATTITUDE INDICATOR

The stand-by attitude indicator, equipped with a slip indicator, provides a visual reference of actual airplane flight attitude. An index at the top of the indicator shows bank attitude relative to the bank scale which has index marks at 10°, 20°, 30°, 60° and 90° either side of the center mark.

Pitch and roll attitudes are shown by a miniature airplane superimposed over a symbolic horizon area divided into two sections by a white horizon bar. The upper "sky blue" area and the lower "ground" area have arbitrary pitch reference lines useful for pitch attitude control.

- 1) Pressure regulator
- 2) Ejector
- 3) Valve
- 4) Regulating and relief valve
- 5) Pressure switch
- 6) Failure CAS message

Figure 7.12.1 (1/2) - VACUUM SYSTEM  
Pre-MOD70-0335-34 (ESI-2000)



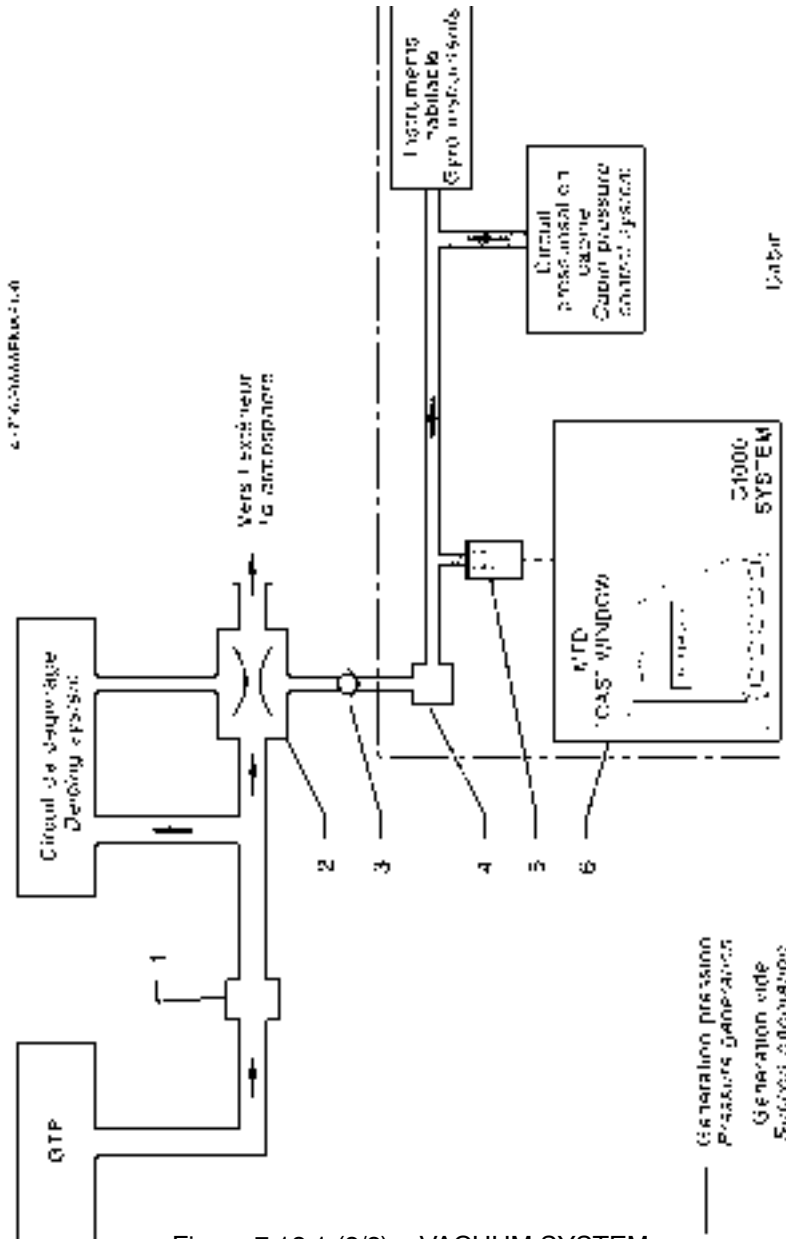


Figure 7.12.1 (2/2) - VACUUM SYSTEM  
Pre-MOD70-0335-34 (ESI-2000)

## SUCTION GAGE

The suction gage is calibrated in inches of mercury and indicates the suction available for operation of the attitude indicator. The desired vacuum range is 4.4 to 5.2 in.Hg.

A vacuum reading out of this range may indicate a system malfunction or improper adjustment. In this case, all pneumatic instruments should be considered unreliable.

The suction gage is located on L.H. panel of pilot's instrument panel.

Post-MOD70-0335-34 (ESI-2000) (Figure 7.12.1A)

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 the "VACUUM LOW" CAS message to light on.

## ELECTRONIC STANDBY INDICATOR (ESI-2000)

The L-3 Communications Avionics Systems ESI-2000 Electronic Standby Instrument System consists of an AMLCD display. An air data sensor is integral to the ESI-2000 housing. A replaceable battery assembly provides back up power. The Electronic Standby Indicator displays attitude (pitch and roll), along with altitude and airspeed. The ESI-2000 is powered from the "ESSENTIAL BUS 2", or internal battery ensuring that the aircraft 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 ESI-2000 using the aircraft's pitot probe and static sources.

- 1) Pressure regulator
- 2) Ejector
- 3) Valve
- 4) Regulating and relief valve
- 5) Pressure switch
- 6) Failure CAS message

Figure 7.12.1A (1/2) - VACUUM SYSTEM  
Post-MOD70-0335-34 (ESI-2000)



**7.13 - ICE PROTECTION EQUIPMENT** (Figure 7.13.1)

Ice protection equipment is as follows :

- 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" [L.H. and (if installed) R.H.]
- Electrical heating system for both pitots and for the stall warning sensor : "PITOT 1 HTR" and "PITOT 2 & 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.

**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" switch is set to "ON". The 67-second cycle breaks down in two inflation cycles :

- a first cycle induces inflation of leading edges deicer boots in horizontal stabilizer, elevator horns, vertical stabilizer and wing inboard section,
- the second cycle induces inflation of leading edges deicer boots in wing central and outboard sections.

During each inflation cycle, one of the two corresponding warning lights located above "AIRFRAME DE-ICE" switch, remains illuminated.

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 two opposite blades at the same time. Each cycle is 180 seconds long. The system operation is correct when green warning light located above "PROP DE ICE" switch illuminates. The cycles continue as long as the switch remains set to "ON".

### **WINDSHIELD DEICING**

The left windshield is deiced electrically by embedded heating resistors. The system includes a controller and two heat probes embedded in the windshield. It is operated by switch "WINDSHIELD".

When the switch is positioned to "ON", the controller supplies the heating resistors, the windshield temperature is monitored by probe # 1. When the temperature reaches 45°C (113°F), the controller cuts the electrical supply to the heating resistors and resumes supply when the temperature falls below 30°C (86°F). The cycle continues as long as the switch remains set to "ON".

In the event of failure by 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 switch to "OFF", then to "ON".

A green light located above switch "WINDSHIELD" goes on when the heating resistors are being supplied.

**NOTE :**

*The right windshield may also be deiced (optional), the system is operated through "WINDSHIELD" switch.*

**HEATING OF PITOTS AND STALL WARNING SENSOR ("PITOT 1 HTR" AND "PITOT 2 & STALL HTR")**

The two pitots, which supply ADC(s), 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 1" or "...2", "PITOT HT ON 1" or "...2", "STALL HEAT ON" or "STALL NO HEAT") are displayed on the GDU 1500 MFD CAS window. Refer to the "GARMIN" G1000 Cockpit Reference Guide for further details.

**TURBINE AIR INLET PROTECTION**

Operation and description are set forth in Paragraph "ENGINE AIR INLET" Chapter 7.6.

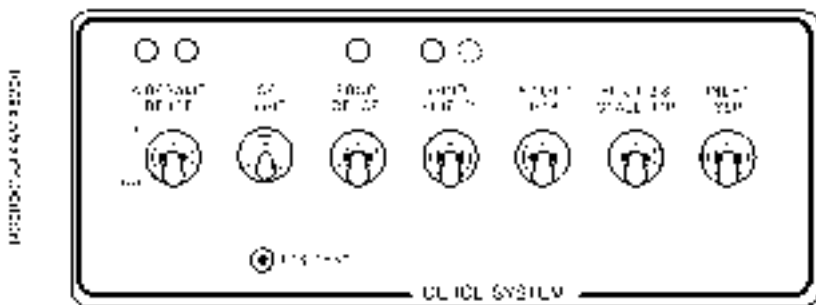
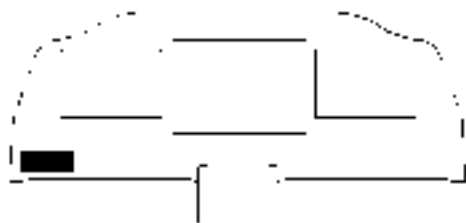


Figure 7.13.1 - DEICING CONTROL AND CHECK PANEL

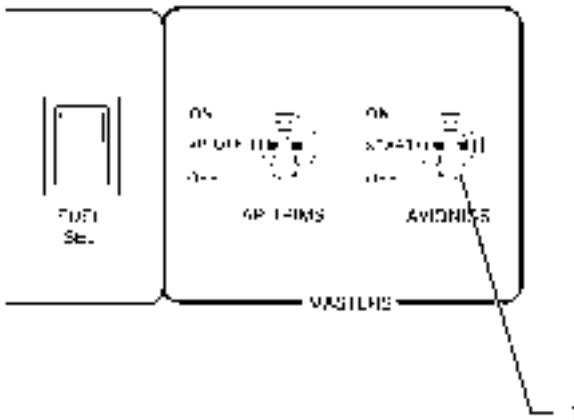
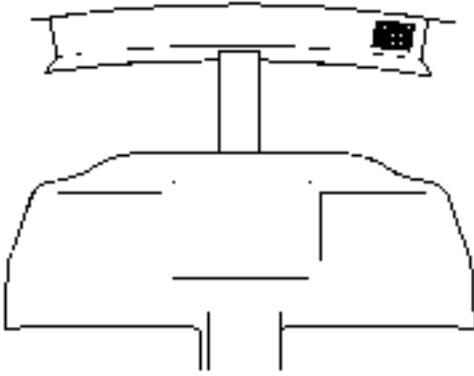


**7.14 - AVIONICS MASTER** (Figure 7.14.1)

The electrical supply of avionic equipment assembly is controlled by the "AVIONICS MASTER" switch located on the upper panel.

When the "AVIONICS MASTER" switch is set to START, it allows to electrically supply, from the "BATT BUS" bar, a limited number of equipment. One single COM, engine monitoring data and fuel indicating functions are available. The L.H. station PFD only displays a reduced quantity of information.

1) "AVIONICS MASTER" switch



MASTER BATTERY DISCONNECT

Figure 7.14.1 - "AVIONICS MASTER"

## **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 a tone over the alarm speaker. This warning tone begins between 5 and 10 knots above the stall in all configurations.

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 system is operational if a continuous tone (low-pitched sound) 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** (if installed)

The fire extinguisher is located on the pilot's seat L.H. side. It is attached on the floor by means of a quick-disconnect support. A pressure gage allows checking the fire extinguisher condition. Follow the recommendations indicated on the extinguisher.

#### Pre-MOD70-0391-26D

If there is a R.H. cabinet, the fire extinguisher is fixed on the cabinet or on the floor, between FWD R.H. seat and R.H. cabinet.

#### Post-MOD70-0391-26D

The fire extinguisher is located in the lower drawer of the R.H. cabinet, inserted in foam.

### **AUTOPILOTS**

Autopilot control panel is located above the GDU 1500 MFD. Refer to Section 2 "Limitations" of this Pilot's Operating Handbook and to GARMIN G1000 Cockpit Reference Guide for further details.

### **GPS**

GPS navigation is performed through the GARMIN G1000 system. Refer to Section 2 "Limitations" and Section 4 "Normal procedures" of this Pilot's Operating Handbook and to GARMIN G1000 Cockpit Reference Guide for further details.

### **OPTIONAL EQUIPMENT**

For optional equipment such as weather radar, stormscope, TAWS or TAS system, refer to Section 9 "Supplements".

Other optional equipment such as radio altimeter or chartview system are described in the GARMIN G1000 Cockpit Reference Guide.

#### *NOTE :*

*Refer to Section 2 "Limitations" for chartview system operating limitations.*

### **VAPOR CYCLE COOLING SYSTEM** (if installed)

Refer to Section 9 "Supplements".

### **CABIN FIRE EXTINGUISHER** (if installed)

The fire extinguisher is located on the pilot's seat L.H. side. It is attached on the floor by means of a quick-disconnect support. A pressure gage allows checking the fire extinguisher condition. Follow the recommendations indicated on the extinguisher.

### **AUTOPILOTS**

Autopilot control panel is located above the GDU 1500 MFD. Refer to Section 2 "Limitations" of this Pilot's Operating Handbook and to GARMIN G1000 Cockpit Reference Guide for further details.

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GPS navigation is performed through the GARMIN G1000 system. Refer to Section 2 "Limitations" and Section 4 "Normal procedures" of this Pilot's Operating Handbook and to GARMIN G1000 Cockpit Reference Guide for further details.

### **OPTIONAL EQUIPMENT**

■ For optional equipment such as weather radar, stormscope, TAWS or TAS system, refer to Section 9 "Supplements".

Other optional equipment such as radio altimeter or chartview system are described in the GARMIN G1000 Cockpit Reference Guide.

#### *NOTE :*

*Refer to Section 2 "Limitations" for chartview system operating limitations.*

### **VAPOR CYCLE COOLING SYSTEM** (if installed)

Refer to Section 9 "Supplements".

### **EMERGENCY LOCATOR TRANSMITTER**

The airplane is equipped with an emergency locator transmitter which enables to locate it in case of distress. It is located under seat pan of rear seat bench or attached on the L.H. side of fuselage in aft baggage compartment.

The emergency locator transmitter assembly is constituted of a transmitter supplied by a battery, of a retractable antenna integrated in the locator transmitter and allowing use of the latter outside the airplane and of a remote control located on R.H. instrument panel.

#### *NOTE :*

*For test sequences, refer to manufacturer manual.*

**EMERGENCY LOCATOR TRANSMITTER**

The airplane is equipped with an emergency locator transmitter which enables to locate it in case of distress. It is located under seat pan of rear seat bench or attached on the L.H. side of fuselage in aft baggage compartment.

The emergency locator transmitter assembly is constituted of a transmitter supplied by a battery, of a retractable antenna integrated in the locator transmitter and allowing use of the latter outside the airplane and of a remote control located on R.H. instrument panel.

**NOTE :**

*For test sequences, refer to manufacturer manual.*

**ELT KANNAD 406 AF – COMPACT**

Operation of the emergency locator transmitter is obtained as follows :

- from the instrument panel by setting "ON/ARMED/RESET-TEST" remote control switch to "ON" (locator transmitter "ARM/ON/OFF" switch set to "ARM"),
- from the locator transmitter by setting its "ARM/ON/OFF" control switch to "ON",
- automatically in case of shock, when remote control switch is set to "ARMED" and locator transmitter switch is set to "ARM".

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 indicate the emergency locator transmitter is transmitting.

**Reset after an inadvertent activation**

On "ON/ARMED/RESET-TEST" remote control switch, press on "RESET-TEST" or set locator transmitter switch to "OFF", then to "ARM".

ELT KANNAD 406 AF - COMPACT

Operation of the emergency locator transmitter is obtained as follows :

- from the instrument panel by setting "ON/ARMED/RESET-TEST" remote control switch to "ON" (locator transmitter "ARM/ON/OFF" switch set to "ARM"),
- from the locator transmitter by setting its "ARM/ON/OFF" control switch to "ON",
- automatically in case of shock, when remote control switch is set to "ARMED" and locator transmitter switch is set to "ARM".

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 indicate the emergency locator transmitter is transmitting.

**Reset after an inadvertent activation**

On "ON/ARMED/RESET-TEST" remote control switch, press on "RESET-TEST" or set locator transmitter switch to "OFF", then to "ARM".

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# SECTION 8

## HANDLING, SERVICING AND MAINTENANCE

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8.9 UTILIZATION BY COLD WEATHER (- 0°C to - 25°C) OR VERY COLD WEATHER (- 25°C to - 40°C) .....	8.9.1

## **8.1 - GENERAL**

This section contains the procedures recommended by the manufacturer for the proper ground handling and routine care and servicing of TBM 700 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's Maintenance Manual.

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## **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.

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### **8.3 - PUBLICATIONS**

When the airplane is delivered from the factory, it is supplied with a Pilot's Operating Handbook, the "GARMIN G1000 Integrated Flight Deck Cockpit Reference Guide for SOCATA TBM 700", P/N 190-01247-00, or any later version as applicable, and supplemental data covering optional equipment installed in the airplane (refer to Section 9 "Supplements" and to pilot's guides).

In addition, the owner may purchase the following :

- Maintenance Manual
- Wiring Manual
- Illustrated Parts Catalog (Bilingual)
- Illustrated Tool and Equipment Manual
- Catalog of Service Bulletins, Service Letters and Service Information Letters

#### **CAUTION**

**PILOT'S OPERATING HANDBOOK MUST ALWAYS  
BE IN THE AIRPLANE**

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## **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.

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## **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.

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## **8.6 - GROUND HANDLING**

### **CAUTION**

**ONLY MOVE OR TOW THE AIRPLANE WITH SOMEONE IN THE COCKPIT**

### **TOWING**

### **CAUTION**

**USING THE PROPELLER FOR GROUND HANDLING COULD RESULT IN SERIOUS DAMAGE, ESPECIALLY IF PRESSURE OR 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 fuel selector is set to OFF.

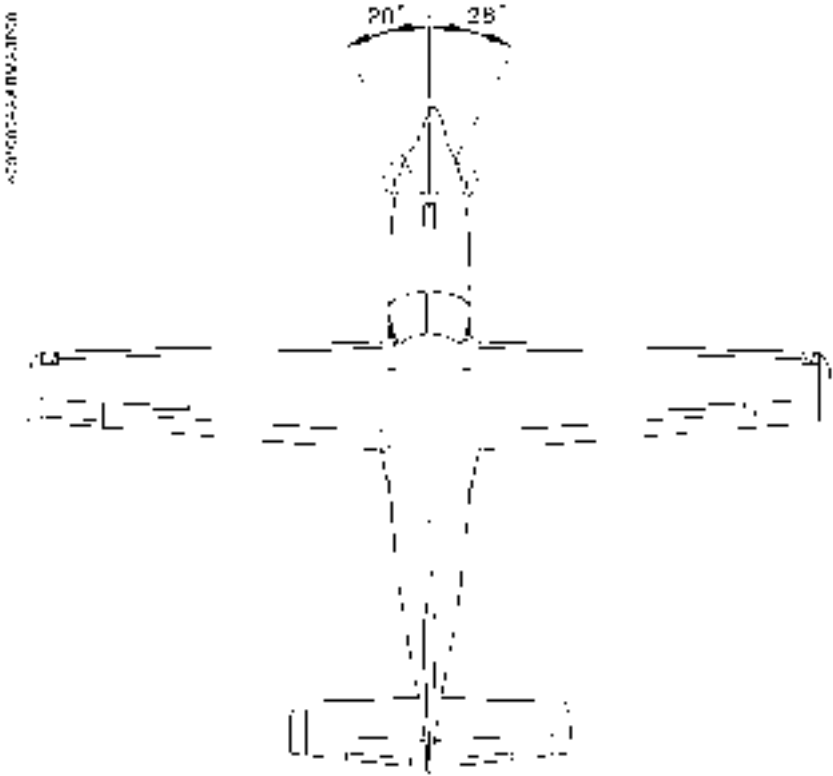


Figure 8.6.1 - TURNING ANGLE LIMITS

**NOTE :**

*Do not use solar screens or shields installed on the aircraft inside, or leave sun visors down against windshield when aircraft 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), cockpit cover, tie-downs, wheel chocks 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 :

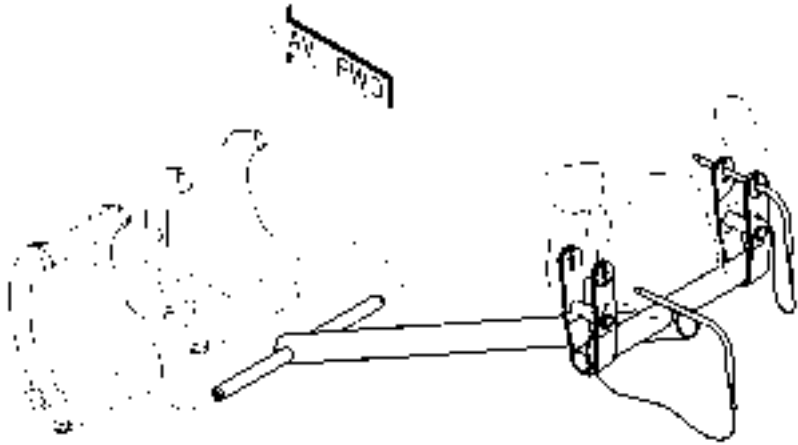
- Install control lock (see Figure 8.6.2).
- Chock all wheels.
- Tie sufficiently strong ropes or chains to hold airplane down ; insert a rope in each tie-down hole located on flap hinge arm ; secure each rope to a ramp tie-down or to mooring rod.
- Check that doors are closed and locked.

**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.



AMERICAN SAFETY

Figure 8.6.2 - CONTROL LOCK DEVICE



**FLYABLE STORAGE**

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.

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.

Battery (remaining in the airplane or removed) :

- Disconnect battery and check its charge level at regular intervals.

**LONG TERM STORAGE WITHOUT FLYING**

Refer to Maintenance Manual for the procedures to follow.

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## 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 BRANDS OR TYPES

Nominal viscosity	US specification (US)	French specification (FR)	English specification (UK)	NATO code
Type 5cSt	MIL-L-23699C Amdt 1	MIL-L-23699C Amdt 1	DERD 2499 Issue 1	O.156

Figure 8.7.1 - RECOMMENDED ENGINE OIL TYPES  
(Reference : Service Bulletin P & W - C. No. 14001)

### Oil capacity :

System total capacity :

12.7 Quarts (12 Litres) (oil cooler included)

Usable capacity :

6 Quarts (5.7 Litres)

The engine oil should be changed and the oil filter cleaned at intervals recommended in Pratt & Whitney Canada Service Bulletin No. 14001 which has been updated with revisions and / or Supplements.

Refill sump through the system filling inlet which is located on the engine upper rear part. A gage located on the filling cap indicates oil level and is calibrated in quarts to maximum level under cold conditions "MAX COLD" and to maximum level under hot conditions "MAX HOT". Normal oil level is approximately one quart below maximum level.

To avoid over servicing of oil tank and high oil consumption, check oil level within 10 minutes after engine shutdown.

If more than 10 minutes but less than 30 minutes have passed and the dipstick indicates that oil is needed, carry out a normal dry motoring cycle and reverify level before adding oil.

If more than 30 minutes have passed and the dipstick indicates that oil is needed, start the engine and run at ground idle (low idle) for 5 minutes. Reverify oil level before adding oil.

## FUEL

**Total capacity each tank : 145.3 us gal (550 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.

**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**

**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**

**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 :

- "ДНК" - GOST 13302-77 or
- liquid "И" - GOST 8313-88 or
- "ТГФ" М – TU-6-10-1457

with antistatic additives "СИГБ 01" – TU 38.101741-78.

Above-mentioned liquids are added in the quantity equal to 0.1 percent (up to 0.3 percent with regard to anti-icing liquid used) per volume.

**CAUTION**

**REFER TO SERVICE BULLETIN P & WC No. 14004 AT ITS LATEST REVISION FOR APPROPRIATE QUANTITIES**

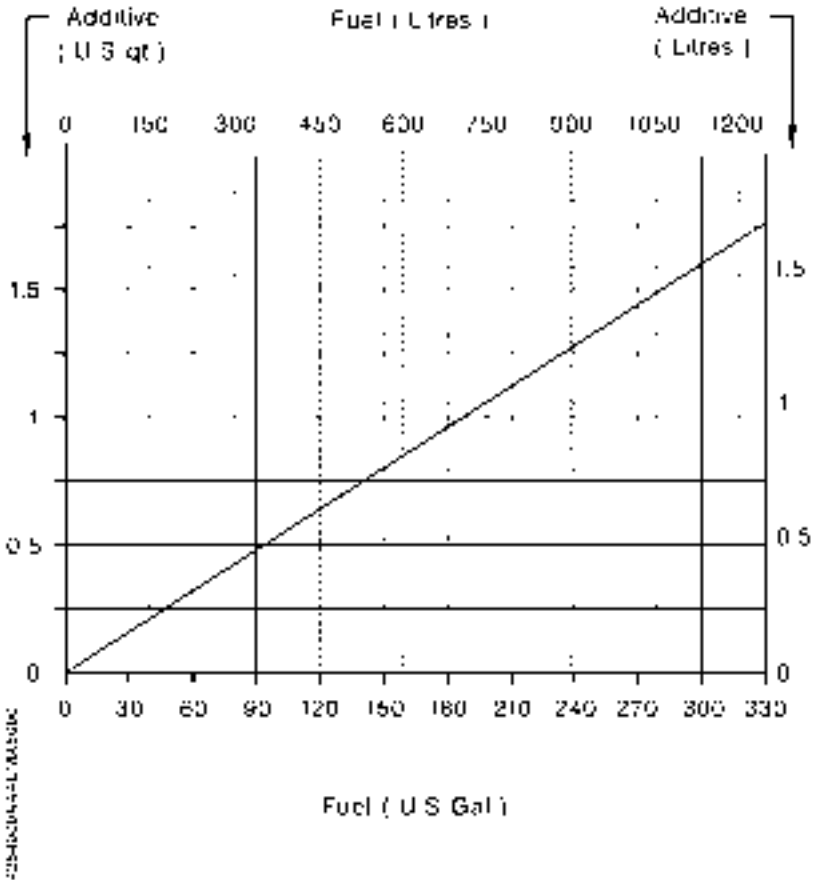


Figure 8.7.3 - ADDITIVE MIXING RATIO (EGME or DIEGME)



**LANDING GEAR****Nose gear tire :**

- 5.00-5 6 PR – Inflating pressure : 98 psi (6.7 bars) \*

**Main gear tires :**

- 18 5.5 8 PR – Inflating pressure : 125 psi (8.6 bars) \*

**Nose gear shock absorber :**

Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 87 psi (6 bar).

**Main gear shock absorbers :**

Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 160 psi (11 bar).

**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**

### **Indicating**

When the "SOURCE" selector is set to "BAT" or "GPU", as soon as an oxygen generator is activated, the "OXYGEN" warning CAS message is displayed.

The warning CAS message remains displayed as long as used generator is not replaced. Condition of the coloured band located around the generators provides activated generator identification. Amber turning to black indicates an used generator which will require removal according maintenance manual instructions in order to replace it with a new one.

### **WARNING**

**GENERATOR CHEMICAL REACTION LEADS TO AN INCREASE OF ITS EXTERNAL TEMPERATURE. FOR THAT REASON, KEEP ITS PROTECTIVE SHIELD CLEAR**

#### *NOTE :*

*During inspection do not pull generator lanyard as it is not possible to stop flow when activated.*

Clean and inspect oxygen system at least once a year.

Pipe must be flexible. When mask is actuated, diaphragms must operate freely. Using a clean cloth previously soaked with alcohol, clean and remove all foreign material which may have accumulated.

## 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. Small nicks on the propeller, particularly near the tips and on the leading edges, should be dressed out as soon as possible since these nicks produce stress concentrations, and if not removed, may result in cracks. Never use an alkaline cleaner on the blades ; remove grease and dirt.

## **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.

## 8.9 - UTILIZATION BY COLD WEATHER (- 0°C TO - 25°C) OR VERY COLD WEATHER (- 25°C TO - 40°C)

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 seals of the door and engine cowlings, as well as the leading edge deicers.
- 2 - Apply engine oil on the engine cowling latches.
- 3 - Inflate tires and shock-absorbers according to following table 1.

**NOTE :**

*Check pressure values in a hangar heated at about 15°C with control equipment at room temperature.*

		OAT (°C)	- 40°	- 30°	- 20°	- 10°	+ 15°
<b>P R E S S U R E  p s i ( b a r s)</b>	Main landing gear shock-absorber	232 (16)	218 (15)	189 (13)	160 (11)	160 (11)	
	Nose gear shock-absorber	145 (10)	131 (9)	116 (8)	102 (7)	102 (7)	
	Main landing gear tire	134 (9.25)	134 (9.25)	120 (8.25)	120 (8.25)	120 (8.25)	
	Nose gear tire	108 (7.5)	108 (7.5)	94 (6.5)	94 (6.5)	94 (6.5)	

Table 1

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## LIST OF SUPPLEMENTS AND VALIDITIES

Supp. No.	Edition Date
A - General <u>All</u> S / N 1 to S / N 433, except S / N 269 equipped with MOD70-0276-00 .....	30.11.10
6 - "BFG" WX-500 stormscope <u>All</u> From S / N 1, except S/N 205 and 249 equipped with MOD70-0276-00 .....	30.11.10
15 - "KEITH" vapor cycle cooling system <u>TBM 700A and TBM 700B</u> From S/N 96 equipped with MOD70-0276-00 .....	30.11.10
18 - "L'HOTELLIER" Engine fire detection system <u>All</u> From S/N 1, except S/N 205 and 249 equipped with MOD70-0276-00 .....	30.11.10
29 - "EROS/INTERTECHNIQUE" gaseous oxygen system (30000 ft) <u>TBM 700A and TBM 700B</u> From S/N 40, plus S/N 24 and 36 equipped with MOD70-0276-00 .....	30.11.10
37 - "EROS/INTERTECHNIQUE" gaseous oxygen system (31000 ft) <u>TBM 700A and TBM 700B</u> From S/N 40, plus S/N 24 and 36 equipped with MOD70-0276-00 .....	30.11.10
38 - Operation at 31000 ft <u>TBM 700A and TBM 700B</u> From S/N 40, plus S/N 24 and 36 equipped with MOD70-0276-00 .....	30.11.10

### LIST OF SUPPLEMENTS AND VALIDITIES (cont'd)

<b>Supp. No.</b>	<b>Edition Date</b>
44 - Chip detection system <u>All</u> From S / N 1 equipped with MOD70-276-00 .....	30.11.10
47 - "AIRBORNE" GWX 68 color weather radar <u>All</u> equipped with MOD70-176-00 or MOD70-276-00 .....	22.06.07
49 - "GARMIN" G1000 TAWS SYSTEM <u>All</u> equipped with MOD70-176-00 or MOD70-276-00 .....	22.06.07
50 - "GARMIN" G1000 SYNTHETIC VISION SYSTEM <u>All</u> equipped with MOD70-176-00 or MOD70-276-00 .....	26.06.08



**SUPPLEMENT****"BFG" WX-500  
STORMSCOPE****TABLE OF CONTENTS**

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7 - DESCRIPTION .....	9.6.4

**SECTION 1****GENERAL**

This supplement supplies information to the pilot about limitations, normal and emergency procedures when the optional "BFG" WX-500 stormscope is installed on the TBM airplane. The stormscope must be used within limits of this supplement.

**SECTION 2****LIMITATIONS**

These limitations supplement those of standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook.

The "BFG" 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" G1000 Integrated Flight Deck Cockpit Reference Guide for DAHER-SOCATA TBM 700, P/N 190-01247-00, at their latest revision shall be readily available to the pilot, each time the "BFG" stormscope operation is foreseen.

### **SECTION 3**

#### **EMERGENCY PROCEDURES**

Installation and operation of "BFG" stormscope do not change the basic emergency procedures of the airplane described in Section 3 "Emergency procedures" of the basic Pilot's Operating Handbook.

### **SECTION 4**

#### **NORMAL PROCEDURES**

Normal operating procedures of the "BFG" stormscope are outlined in the WX-500 Pilot's Guide, Series II, No. 009-11501-001 at its last revision for "BFG" stormscope model WX-500.

### **SECTION 5**

#### **PERFORMANCE**

Installation and operation of "BFG" stormscope do not change the basic emergency procedures of the airplane described in Section 5 "Performance" of the basic Pilot's Operating Handbook.

## SECTION 6

### WEIGHT AND BALANCE

Informations hereafter supplement the ones given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	<b>34 - NAVIGATION</b>  Stormscope WX-500 - shared with the GARMIN G1000 system (OPT 70 34056C)	BFG	4.94 (2.240)	232.28 (5.900)

## SECTION 7

### DESCRIPTION

The "BFG" (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.

Dots or strike points may be displayed on two selectable views : 360° view of surrounding airspace and 120° view of forward airspace only.

The display scope provides full scale selectable ranges of 200, 100, 50 and 25 NM.

## **SUPPLEMENT**

# **"KEITH" VAPOR CYCLE COOLING SYSTEM**

### **TABLE OF CONTENTS**

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**SECTION 1****GENERAL**

This supplement provides information necessary for airplane utilization when the "KEITH" vapor cycle cooling system is installed on TBM 700 airplane equipped with MOD70-0276-00.

**SECTION 2****LIMITATIONS**

These limitations supplement those of standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook.

The vapor cycle cooling system can be operated with :

- a Ground Power Unit,
- engine running with "GENERATOR" selector on MAIN.

The system must be OFF :

- when engine is started,
- when "AIRFRAME DE-ICE" switch is ON,
- when "PROP DE-ICE" switch is ON,
- when "GENERATOR" selector is on ST-BY.

**SECTION 3****EMERGENCY PROCEDURES**

The instructions specific to the use of the "KEITH" vapor cycle cooling system in connection with the emergency procedures are described in Section 3 "Emergency procedures" of the basic Pilot's Operating Handbook.

## **SECTION 4**

### **NORMAL PROCEDURES**

The operation of the "KEITH" vapor cycle cooling system is started thanks to the "AIR COND" control switch integrated to the "ECS" panel.

The operation instructions are described in Section 4 "Normal procedures" of the basic Pilot's Operating Handbook.

#### **NOTE 1 :**

*On ground, in order to obtain a best efficiency of the vapor cycle cooling system, it is advised to set temporarily the "BLEED VALVE" switch to "OFF", open all overhead duct air outlets and do not obstruct the evaporator lattice orifice located according to the evaporator installation either above the cabin floor or in the baggage compartment.*

#### **NOTE 2 :**

*The standby compass may be disturbed when the vapor cycle cooling system is set to "ON". If the standby compass use is necessary, the vapor cycle cooling system must be set to "OFF".*

## **SECTION 5**

### **PERFORMANCE**

The installation and the use of the "KEITH" vapor cycle cooling 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**

Weight and balance corresponding to the "KEITH" vapor cycle cooling system are given in the optional equipment list attached to Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

## SECTION 7

### DESCRIPTION

The "KEITH" vapor cycle cooling system improves the passengers and crew comfort in warm and / or humid atmospheric conditions. The refrigerant used is called R134A.

The installation (Figure 9.15.1) comprises :

- A compressor/condenser assembly located in the fuselage rear section between frames C 17 and C 18 and consisting of :
  - . a compressor,
  - . a condenser heat exchanger,
  - . an electric motor driving the condenser impeller fan and the compressor through pulley and belt,
  - . a receiver drier with a built-in overpressure relief valve rated to open at 425 psi (29 bars),
  - . a binary pressure switch monitoring low and high pressures [ $30 \leq P \leq 300$  psi ( $2 \leq P \leq 20$  bars)],
  - . a relay.

The components are installed on a pallet and enclosed in a housing connected through flexible ducts to a screened air inlet and outlet located symmetrically on the rear fuselage lower section skin above the ventral fins.

The electric motor is supplied by the BUS 4 bar through the power relay and controlled by the "AIR COND" switch.

- An evaporator heat exchanger, made of copper tube and pure aluminium fins, features a foam filter on its air intake face.

#### TBM700A

The evaporator is installed on the frame C 13 on L.H. side and is open to cabin air through a lattice orifice above the floor.

#### TBM700B

The evaporator is installed between frames C 16 and C 17 on L.H. side on rear baggage compartment floor.



All

- An evaporator fan that also provides the air circulation in the cabin as the standard ventilation system.

TBM700A

It is installed at the same location as for the ventilation system between frames C 13 and C 14 on R.H. side under the floor.

TBM700B

It is installed at the same location as for the ventilation system between frames C 14 and C 15 on R.H. side under the floor.

All

The fan is supplied by the BUS 3 bar and protected by the CB 111 "FAN" circuit breaker.

- A thermal expansion valve controlled by a temperature control/sensor which is installed on the evaporator outlet.

The thermal expansion valve is screwed on the evaporator inlet.

- Two service valves for the refrigerant.

The low pressure (LP) service valve and the high pressure (HP) service valve are installed on a Tee bulkhead union.

The unions are screwed on a bracket riveted to the L.H. lower part of the frame C 18.

The two valves fool-proofing is ensured by their different diameters, LP service valve diameter is more important than HP one.

- A sight glass, used to observe the flow of refrigerant and to determine if the system is undercharged, is located near the HP service valve.

The controls and indicators are located on the "ECS" PL23 panel in the area identified "AIR COND" (see Figure 9.15.2).

The control switch has three positions :

- OFF : System inoperative.
- FAN ONLY : Controls evaporator fan in cabin ventilation mode.
- ON : Controls electric motor of the compressor/condenser assy and fan in cabin vapor cycle cooling mode.

## "KEITH" VAPOR CYCLE COOLING SYSTEM

A second switch "FAN FLOW" controls the cabin air HI or LO flow in either FAN ONLY or ON operating positions.

A green light located next to the switches illuminates to indicate the operation of the compressor/condenser fan motor.

A "LT TEST" push-button enables to test the AIR COND green light.

When the "AIR COND" switch is set to ON, the compressor pressurizes the refrigerant and discharges it to the condenser heat exchanger through the binary pressure switch.

The condenser is cooled by ambient air drawn through an air intake by the condenser fan and expelled overboard through an air outlet.

The refrigerant flows through the receiver drier to the thermal expansion valve located at the evaporator inlet.

A temperature control/sensor monitoring the refrigerant temperature at the evaporator heat exchanger outlet, pilots the thermal expansion valve which controls the refrigerant flow through the evaporator.

The expansion of the high pressure liquid refrigerant to a low pressure liquid extracts heat from the cabin air flowing through the evaporator and blown into the cabin overhead duct equipped with air outlets for distribution in the cabin.

The low pressure refrigerant gas flows back to the compressor.

The system operates under two modes :

- engine running with "GENERATOR" selector on MAIN,
- engine off with "SOURCE" selector on GPU.

The system includes an automatic load shedding feature which eliminates the compressor/condenser fan electrical motor load when :

- "AIRFRAME DE-ICE" switch is ON,
- "PROP DE-ICE" switch is ON,
- engine is started with system fed by a GPU,
- "GENERATOR" selector is on ST-BY.

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- 1) Overhead distribution duct
- 2) Thermal expansion valve
- 3) HP service valve
- 4) Sight glass
- 5) Binary pressure switch
- 6) Receiver drier
- 7) Condenser air outlet
- 8) Condenser heat exchanger
- 9) Compressor/condenser fan motor
- 10) Compressor/condenser assembly
- 11) Condenser air inlet
- 12) Compressor
- 13) LP service valve
- 14) Temperature control/sensor
- 15) Evaporator heat exchanger
- 16) Evaporator fan
- 17) Control panel PL 23
- 18) "WEMAC" air outlet

Figure 9.15.1 (1/2) - Schematic diagram

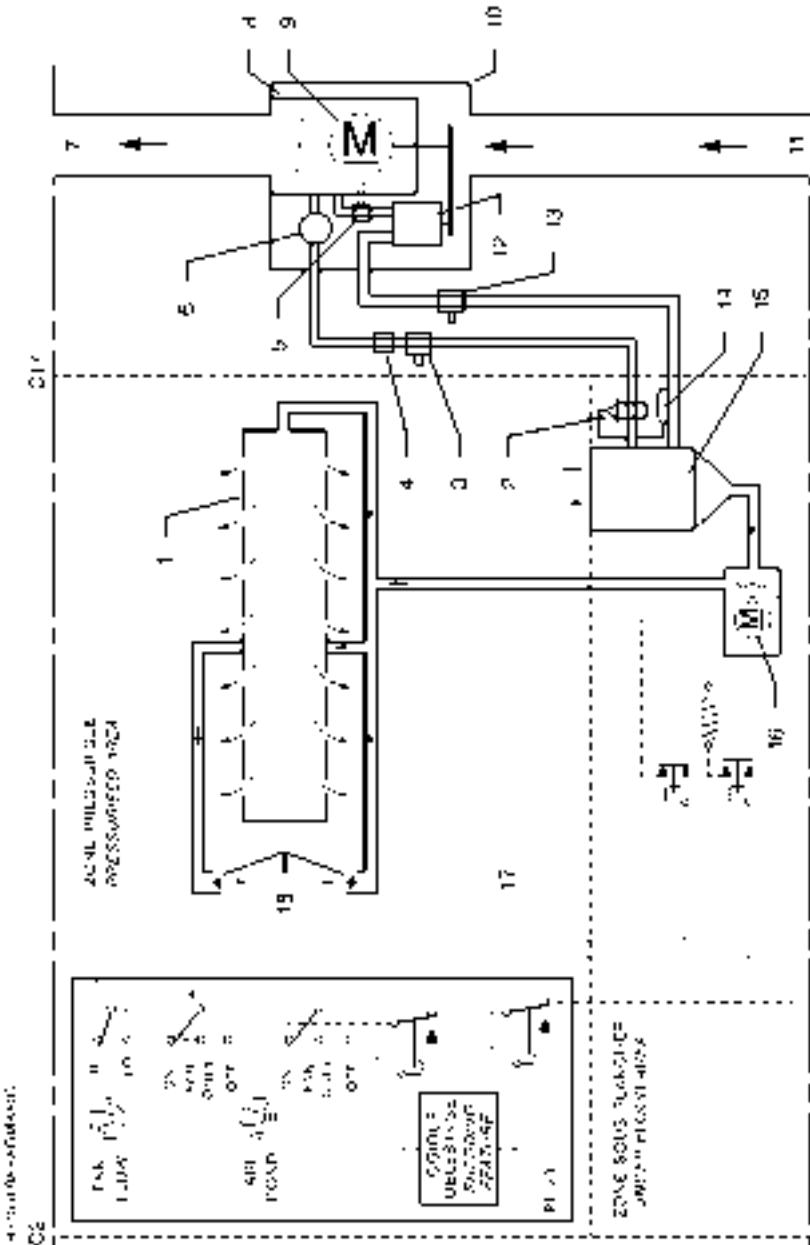
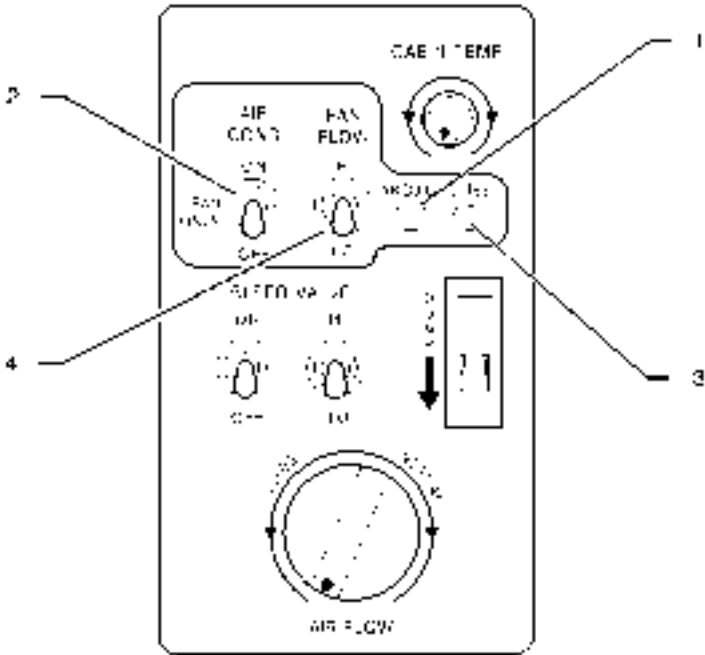


Figure 9.15.1 (2/2) - Schematic diagram

- 1) Green light
- 2) Operation switch
- 3) Light test
- 4) Fan speed selector

Figure 9.15.2 (1/2) - “ECS” panel



10-5520-00-AC-00-10-00

Figure 9.15.2 (2/2) - "ECS" panel

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**SUPPLEMENT****ENGINE FIRE  
DETECTION SYSTEM****TABLE OF CONTENTS**

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**SECTION 1****GENERAL**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary to operation when the TBM airplane is equipped with the option "ENGINE FIRE DETECTION SYSTEM".

The generalities hereafter supplement those of the standard airplane described in Section 1 "General" of the basic Pilot's Operating Handbook when the TBM airplane is equipped with the option "ENGINE FIRE DETECTION SYSTEM".

The fire detection system allows engine fire monitoring and indicating.

**SECTION 2****LIMITATIONS**

The limitations of the TBM airplane equipped with the engine fire detection system are those of the standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook.

**SECTION 3**  
**EMERGENCY PROCEDURES**

The emergency procedures hereafter supplement 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 "ENGINE FIRE DETECTION SYSTEM".

**ENGINE FIRE ON GROUND**

Indications : ITT increasing, red warning "ITT" ON or "ITT" CAS message, red warning "FIRE" ON or "FIRE" CAS message, smoke, ...

- |   |                    |
|---|--------------------|
| 1 - Power lever .....                                 | <b>IDLE</b>        |
| 2 - Condition lever .....                             | <b>CUT OFF</b>     |
| 3 - "BLEED VALVE" or "BLEED" switch .....             | <b>OFF</b>         |
| 4 - "FREON" or "AIR COND" switch (if installed) ..... | <b>OFF</b>         |
| 5 - Brakes .....                                      | <b>AS REQUIRED</b> |
| 6 - Tank selector .....                               | <b>OFF</b>         |
| 7 - Ask for ground assistance, if necessary           |                    |
| 8 - CRASH lever .....                                 | <b>PULL DOWN</b>   |
| 9 - EVACUATE as soon as possible                      |                    |

**ENGINE FIRE IN FLIGHT**

Indications : **"FIRE"** red warning ON or **"FIRE"** CAS message

Try to confirm the fire warning by looking for other indications such as ITT increase, **"ITT"** red warning ON or **"ITT"** CAS message, smoke from engine cowls or air conditioning system.

*If the fire alarm is not confirmed :*

- 1 - Monitor the engine parameters, ITT in particular
- 2 - Look for smoke coming through engine cowls or from air conditioning system
- 3 - Land as soon as possible.

*If the fire alarm is confirmed :*

- 1 - Power lever ..... **IDLE**
- 2 - Propeller governor lever ..... **FEATHER**
- 3 - Condition lever ..... **CUT OFF**
- 4 - "AUX BP" fuel switch ..... **OFF**
- 5 - Tank selector ..... **OFF**
- 6 - "BLEED VALVE" or "BLEED" switch ..... **OFF**
- 7 - "FREON" or "AIR COND" switch (if installed) ..... **OFF**
- 8 - At high altitude (above 12000 ft), undertake an EMERGENCY DESCENT (Refer to Chapter 3.6 of basic Pilot's Operating Handbook).
- 9 - Perform a FORCED LANDING (ENGINE SHUT DOWN) (Refer to Chapter 3.7 of basic Pilot's Operating Handbook).

**WARNING**

**AFTER AN ENGINE FIRE, DO NOT ATTEMPT AN AIR START**

## **SECTION 4**

### **NORMAL PROCEDURES**

The normal procedures hereafter supplement those of the standard airplane described in Section 4 "Normal procedures" of the basic Pilot's Operating Handbook when the TBM airplane is equipped with the option "ENGINE FIRE DETECTION SYSTEM".

- Before starting the engine

"FIRE DETECT TEST" push-button . . . . . DEPRESS

■ The "FIRE" red warning goes on or the "FIRE" CAS message lights on and causes the illumination of the "MASTER WARNING" light.

## **SECTION 5**

### **PERFORMANCE**

Installation and operation of the engine fire detection system do not modify the performance of the airplane described in Section 5 "Performance" of the basic Pilot's Operating Handbook.

**SECTION 6**  
**WEIGHT AND BALANCE**

Information hereafter supplement the one given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
<b>34 - FIRE PROTECTION</b>				
A	Engine fire detection system (OPT70 26002A) <u>TBM 700A &amp; TBM 700B (without G1000 system)</u>	L'HOTELLIER	1.455 (0.66)	96.06 (2.440)
A	Engine fire detection system (OPT70 26002D) <u>TBM 700A &amp; TBM 700B (with G1000 system)</u>	L'HOTELLIER	1.455 (0.66)	96.06 (2.440)
A	Engine fire detection system (OPT70 26002B) <u>TBM 700C &amp; TBM 850 (without G1000 system)</u>	L'HOTELLIER	1.455 (0.66)	96.06 (2.440)
A	Engine fire detection system (OPT70 26002C) <u>TBM 850 (with G1000 system)</u>	L'HOTELLIER	1.455 (0.66)	96.06 (2.440)

## SECTION 7

### DESCRIPTION

#### **Pre-MOD70-0176-00 or Pre-MOD70-276-00 "G1000 Integrated Flight Deck"**

The engine fire detection system enables the monitoring and indication of a fire in the engine area.

The system includes :

- 7 detectors
- the control relay
- the test push-button

The system also uses the advisory panel. The system is electrically supplied by "ESS BUS 1" bus bar and is protected by "ADVISORY2" circuit breaker.

#### **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.

#### **RELAY**

The relay controls the illumination of the "FIRE" warning light located on the advisory panel. It is positioned on a base plate secured under the floorboard.

#### **PUSH-BUTTON**

The push-button enables the pilot to test the detection system by opening the grounding circuit supplying the relay. It is connected in series with the 7 detectors. The push-button is located on the instrument panel on the L.H. side of the advisory panel near the "FIRE DETECT TEST" placard.

**Post-MOD70-0176-00 or Post-MOD70-0276-00 “G1000 Integrated Flight Deck”**

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 G1000 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. The push-button is located on the L.H. side instrument panel the "FIRE DETECT TEST" placard.

**DISPLAY****Airplane equipped with MOD70-0176-00**

Refer to the "GARMIN G1000 Integrated Flight Deck Cockpit Reference Guide for SOCATA TBM 850", P/N 190-00708-00, at its latest revision.

**Airplane equipped with MOD70-0276-00**

Refer to the "GARMIN G1000 Integrated Flight Deck Cockpit Reference Guide for DAHER-SOCATA TBM 700", P/N 190-01247-00, at its latest revision.



# **SUPPLEMENT**

## **"EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (30000 FT)**

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**"EROS/INTERTECHNIQUE"  
GASEOUS OXYGEN SYSTEM (30000 FT)****SECTION 1****GENERAL**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary to the operation when the TBM 700 airplane is equipped with the option ""EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (30000 FT)" and with MOD70-0276-00.

This system replaces the standard oxygen system described in Section 7 "Description", Chapter "Emergency oxygen", of the basic Pilot's Operating Handbook.

This optional oxygen system for air taxi and commercial operations provides supplementary oxygen for the crew and passengers to meet the requirements of FAR 135.89 and 135.157. Actual compliance with the regulation is the responsibility of the operator as established by the FAA for the particular operation.

## "EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (30000 FT)

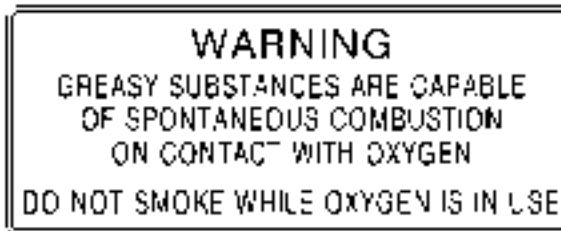
### SECTION 2 LIMITATIONS

The limitations hereafter supplement those of the standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option "EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (30000 FT) and with MOD70-0276-00.

#### PLACARDS

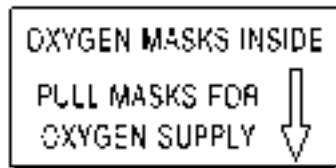
- (1) On R.H. side at front seat level and on the first rear passengers masks container (R.H. side on the ceiling)

41 1570456 10-50101



- (2) On rear passengers masks containers (on R.H. side on the ceiling)

41 1570456 10-50101



"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (30000 FT)**

**SECTION 3**  
**EMERGENCY PROCEDURES**

These emergency procedures supplement those of the standard airplane described in Section 3 "Emergency procedures" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option ""EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (30000 FT)" and with MOD70-0276-00.

The procedure hereafter replaces the one described in Chapter "Miscellaneous", Paragraph "Oxygen use", of the basic Pilot's Operating Handbook.

If circumstances require that the depressurized airplane remains at 10000 ft or above, tables located in Section 7 give minimum oxygen pressure values required to insure conditions indicated in these tables.

**OXYGEN USE**

**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...)**

**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. Press on the red side vanes to inflate the harness. Put the mask on the face.
- 2 - No smokes :  
 3-position selector-----**NORMAL**  
**(100 % as required)**



OXYGEN USE (Cont'd)

- 3 - In case of smokes :  
3-position selector----- **EMERGENCY**  
**Don the smoke goggles**  
**onto the face**
- 4 - "PASSENGERS OXYGEN" switch ----- **ON**
- 5 - Check the oxygen flow indicator for the front seats (the blinker is transparent) and for the rear passengers (the blinker is green).
- 6 - "NORMAL/MASK" micro inverter ----- **MASK**
- 7 - Perform an emergency descent to the "En route" minimum altitude and, if possible, below 10000 ft.

**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 on the face.

”EROS/INTERTECHNIQUE”  
**GASEOUS OXYGEN SYSTEM (30000 FT)**

**SECTION 4**  
**NORMAL PROCEDURES**

The normal procedures hereafter supplement those of the standard airplane described in Section 4 ”Normal procedures” of the basic Pilot’s Operating Handbook, when the TBM 700 airplane is equipped with the option ”EROS/INTERTECHNIQUE” GASEOUS OXYGEN SYSTEM (30000 FT)” and with MOD70-0276-00.

**PREFLIGHT INSPECTION**

**External**

Rear R.H. karman ----- **Oxygen cylinder open**  
 Oxygen pressure ----- **CHECK**

**Internal**

Oxygen supply ----- **Available for the planned flight  
 (see tables in Section 7  
 for a FAR 135 type operation)**  
 ”OXYGEN” switch ----- **ON**  
 ”PASSENGERS OXYGEN” switch ----- **OFF**  
 Copilot and pilot masks ----- **Press push-button  
 ”PRESS TO TEST” :  
 the blinker shall turn red  
 momentarily, then turns transparent**  
 ”NORMAL/MASK” micro inverter ----- **NORMAL**

**IN-FLIGHT AVAILABLE  
 OXYGEN QUANTITY**

Oxygen pressure ----- **Read**  
 Outside air temperature (OAT) ----- **Read**



**"EROS/INTERTECHNIQUE"  
GASEOUS OXYGEN SYSTEM (30000 FT)**

IN-FLIGHT AVAILABLE OXYGEN QUANTITY (Cont'd)

- 1 - Determine the usable oxygen percent using the chart Figure 9.29.1.

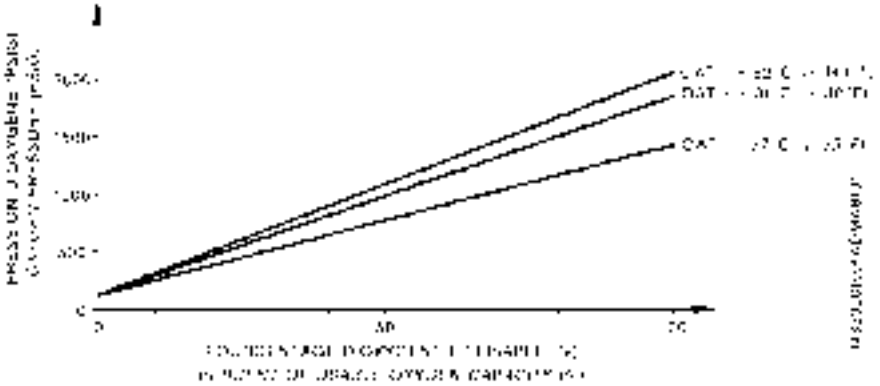


Figure 9.29.1

- 2 - Determine the oxygen duration in minutes by multiplying the values read on table Figure 9.29.2 by the percent obtained with the chart Figure 9.29.1.

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 9.29.2

<b>AFTER LANDING</b>
"OXYGEN" switch ----- <b>OFF</b>

**SECTION 5  
 PERFORMANCE**

The installation of the gaseous oxygen system does 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**

Information hereafter supplement the one given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
<b>A</b>	<b>35 - OXYGEN</b>  Gaseous oxygen system (30000 ft) (OPT70 35001C)	EROS/ INTERTECHNIQUE	22.930 (10.400)	178.19 (4.526)



**SECTION 7  
DESCRIPTION**

The TBM 700 airplane is equipped with an optional gaseous oxygen system, which 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.

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 9.29.3, 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 supplying the "OXYGEN" CAS message located on the MFD unit. This CAS 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).

"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (30000 FT)**

An indicating and control panel located in the cockpit overhead panel at the disposal of the pilot includes :

- a graduated pressure gage to permit checking the cylinder charge,
- a two-position valve ON/OFF ("OXYGEN" switch) to permit the supply of the front seats occupiers masks,
- a two-position valve ON/OFF ("PASSENGERS OXYGEN" switch) with guard to permit the supply of the passengers four masks, when the first valve is open.

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 switch ("NORMAL/MASK" micro inverter) under cover located on the instrument panel near the pilot's control wheel, with 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 smoke goggles are stowed in the drawer of the cabinet at the rear of the pilot.

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 both switches at its disposal are 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 EMERGENCY DESCENT

Number of occupants		OUTSIDE TEMPERATURE						
Cockpit	Cabin	110°F/ 43°C	90°F/ 32°C	70°F/ 21°C	50°F/ 10°C	30°F/ -1°C	10°F/ -12°C	-10°F/ -23°C
1	0	451	435	<b>418</b>	399	381	365	346
1	1	567	545	<b>525</b>	501	479	457	435
1	2	685	657	<b>632</b>	605	578	550	522
1	3	802	770	<b>740</b>	707	674	642	608
1	4	920	882	<b>847</b>	809	772	734	696
2	0	937	898	<b>864</b>	824	783	745	709
2	1	1056	1009	<b>971</b>	925	881	837	792
2	2	1175	1123	<b>1078</b>	1027	977	928	875
2	3	1293	1234	<b>1186</b>	1115	1072	1014	961
2	4	1414	1349	<b>1293</b>	1228	1168	1106	1044

(Values in PSIG)

*Conditions :*

1. 4 minutes from 30000 to 15000 ft. All equipment used from 30000 ft.
2. Plus 30 minutes usage by each pilot and passenger at 15000 ft.
3. Plus 86 minutes usage by each pilot at 10000 ft.

*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 "EN ROUTE" ALTITUDE**

Number of occupants		OUTSIDE TEMPERATURE						
Cockpit	Cabin	110°F/ 43°C	90°F/ 32°C	70°F/ 21°C	50°F/ 10°C	30°F/ -1°C	10°F/ -12°C	-10°F/ -23°C
1	0	464	447	<b>430</b>	410	393	376	357
1	1	672	646	<b>621</b>	593	567	539	513
1	2	880	843	<b>811</b>	773	738	702	665
1	3	1091	1044	<b>1001</b>	955	910	864	817
1	4	1300	1242	<b>1191</b>	1134	1077	1022	966
2	0	912	873	<b>839</b>	801	763	728	689
2	1	1122	1072	<b>1029</b>	980	934	885	840
2	2	1333	1271	<b>1220</b>	1163	1108	1045	991
2	3	1545	1472	<b>1410</b>	1342	1272	1203	1138
2	4	1755	1671	<b>1600</b>	1516	1436	1355	1262

(Values in PSIG)

*Conditions :*

1. *Flight above 15000 ft. All equipment used.*
2. *1 hour usage by each pilot and passenger.*
3. *Plus 1 hour usage by each pilot under 15000 ft.*

*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

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	464	447	<b>430</b>	410	393	376	357
1	1	776	745	<b>716</b>	683	653	622	590
1	2	776	745	<b>716</b>	683	653	622	590
1	3	776	745	<b>716</b>	683	653	622	590
1	4	776	745	<b>716</b>	683	653	622	590
2	0	912	873	<b>839</b>	801	763	728	689
2	1	1228	1172	<b>1125</b>	1073	1016	966	913
2	2	1228	1172	<b>1125</b>	1073	1016	966	913
2	3	1228	1172	<b>1125</b>	1073	1016	966	913
2	4	1228	1172	<b>1125</b>	1073	1016	966	913

(Values in PSIG)

Conditions :

1. Flight under 15000 ft.
2. 90 minutes usage by each pilot and one passenger.
3. Plus 30 minutes usage by each pilot at 10000 ft.

NOTE :

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.

**SECTION 8**  
**HANDLING, SERVICING AND MAINTENANCE**

The operations hereafter supplement those of the standard airplane described in Section 8 "Handling, servicing and maintenance" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option "EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (30000 FT)" and with MOD70-0276-00.

These directives replace the one described in Chapter "Servicing", Paragraph "Oxygen", of the basic Pilot's Operating Handbook.

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 9.29.3, located on the inside of the cylinder service door, gives the cylinder charge maximum pressure according to the environment temperature.

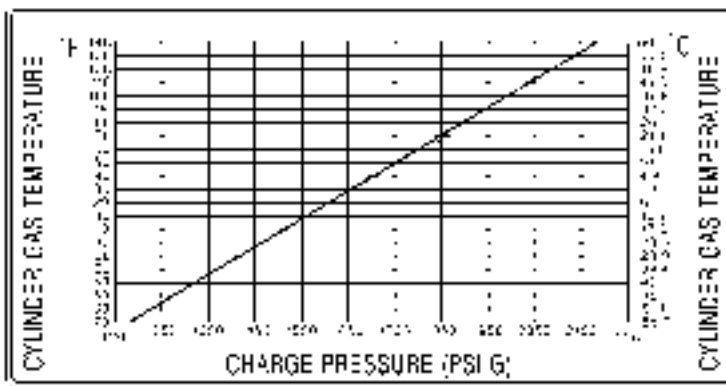


Figure 9.29.3 - Charge pressure chart

**REPLENISHMENT PROCEDURE****WARNING**

**MAKE SURE THAT THE AIRPLANE IS FITTED WITH A GROUING 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 9.29.3 which lists the required pressures according to the cylinder temperature.*

Open the oxygen service door on the R.H. rear karman.

Measure the oxygen cylinder temperature.

Make sure the thermometer indication is constant. Note the indication.

Refer to the temperature/pressure chart for the correct oxygen cylinder pressure.

**"EROS/INTERTECHNIQUE"  
GASEOUS OXYGEN SYSTEM (30000 FT)**

If the pressure on the oxygen cylinder gage is lower, fill the oxygen cylinder.

Make sure the area around the oxygen cylinder charging valve is clean. Remove the cap from the charging valve.

Make sure the oxygen supply hose is clean and connect it to the charging valve.

Slowly pressurize the oxygen cylinder to the correct pressure.

Close the oxygen supply and let the cylinder temperature become stable.

Monitor the oxygen pressure on the gage and fill to the correct pressure if necessary.

Release the pressure in the oxygen supply hose and disconnect from the charging valve.

Install the cap on the charging valve.

Make sure all the tools and materials are removed and the work area is clean and free from debris.

Close the oxygen service door.

**PASSENGER MASKS REPACKING INSTRUCTIONS****WARNING**

**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**

**WARNING**

**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**



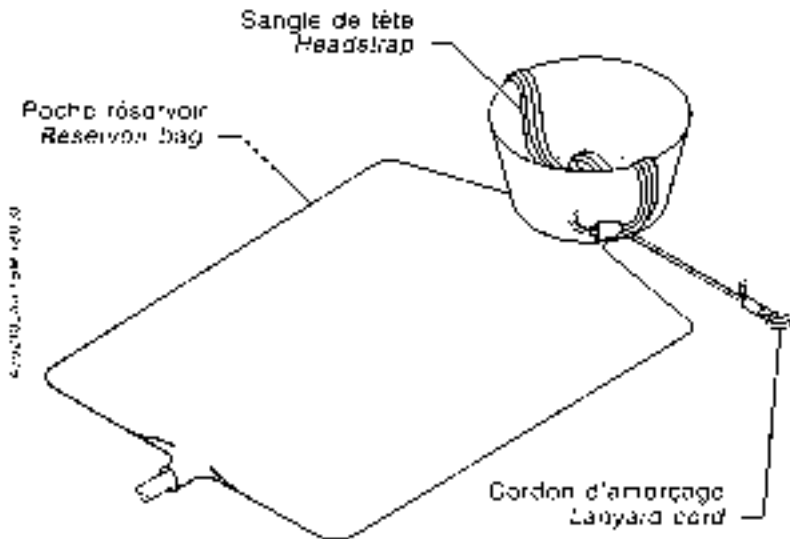
## WARNING

### **MASKS SHALL BE REPACKED IN AN AREA FREE OF OIL, GREASE, FLAMMABLE SOLVENTS OR OTHER CONTAMINANTS**

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.

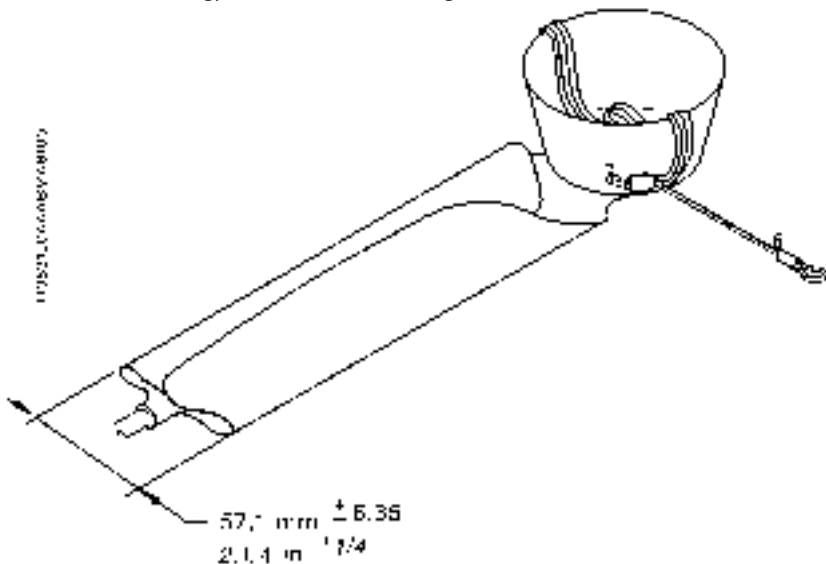
Fold headstrap into facepiece. Pull lanyard cord out to side of facepiece so that it does not interfere with repacking.

Lay reservoir bag on flat surface and smooth out wrinkles.



"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (30000 FT)**

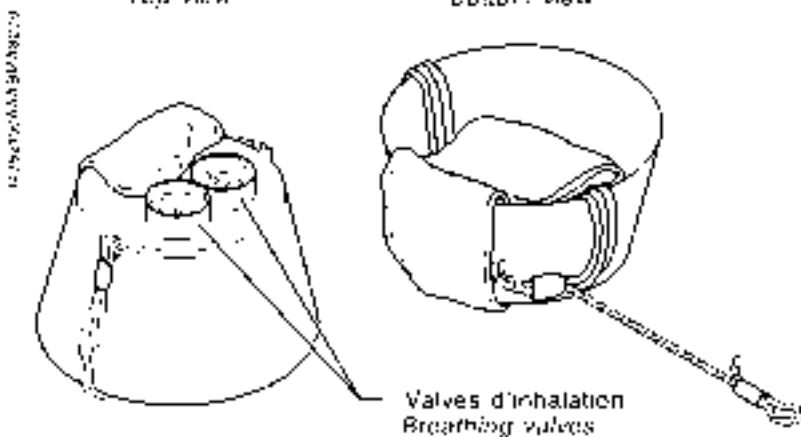
Gently fold reservoir bag lengthwise into thirds (outside edges folded inward over center of bag). Do not crease bag.



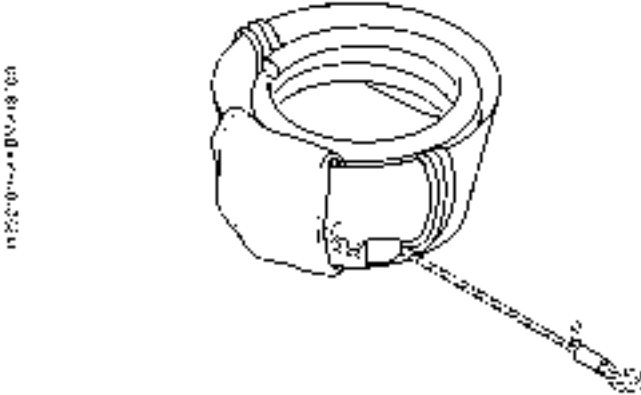
Fold reservoir bag away from breathing valves and into facepiece. Make sure bag does not cover breathing valves.

Vue de dessus  
 Top view

Vue de dessous  
 Bottom view



Coil oxygen tubing inside facepiece over reservoir bag.



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**

Insert lanyard pin into corresponding check valve.

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.

Close and latch deployment container lid.

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**SUPPLEMENT****"EROS/INTERTECHNIQUE"  
GASEOUS OXYGEN SYSTEM  
(31000 FT)****TABLE OF CONTENTS**

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**"EROS/INTERTECHNIQUE"  
GASEOUS OXYGEN SYSTEM (31000 FT)****SECTION 1****GENERAL**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary to the operation when the TBM 700 airplane is equipped with the option ""EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (31000 FT)" and with MOD70-0276-00.

This system replaces the standard oxygen system described in Section 7 "Description", Chapter "Emergency oxygen", of the basic Pilot's Operating Handbook.

This optional oxygen system for air taxi and commercial operations provides supplementary oxygen for the crew and passengers to meet the requirements of FAR 135.89 and 135.157. Actual compliance with the regulation is the responsibility of the operator as established by the FAA for the particular operation.

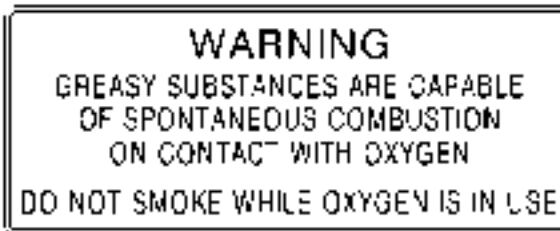
## SECTION 2 LIMITATIONS

The limitations hereafter supplement those of the standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option "EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (31000 FT) and with MOD70-0276-00.

### PLACARDS

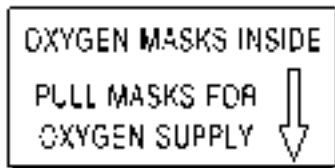
- (1) On R.H. side at front seat level and on the first rear passengers masks container (R.H. side on the ceiling)

41 1570456 10-50101



- (2) On rear passengers masks containers (on R.H. side on the ceiling)

41 1570456 10-50101



"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (31000 FT)**

**SECTION 3**  
**EMERGENCY PROCEDURES**

These emergency procedures supplement those of the standard airplane described in Section 3 "Emergency procedures" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option ""EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (31000 FT)" and with MOD70-0276-00.

The procedure hereafter replaces the one described in Chapter "Miscellaneous", Paragraph "Oxygen use", of the basic Pilot's Operating Handbook.

If circumstances require that the depressurized airplane remains at 10000 ft or above, tables located in Section 7 give minimum oxygen pressure values required to insure conditions indicated in these tables.

**OXYGEN USE**

**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...)**

**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. Press on the red side vanes to inflate the harness. Put the mask on the face.
- 2 - No smokes :  
 3-position selector-----**NORMAL**  
**(100 % as required)**





OXYGEN USE (Cont'd)

- 3 - In case of smokes :  
3-position selector----- **EMERGENCY**  
**Don the smoke goggles**  
**onto the face**
- 4 - "PASSENGERS OXYGEN" switch ----- **ON**
- 5 - Check the oxygen flow indicator for the front seats (the blinker is transparent) and for the rear passengers (the blinker is green).
- 6 - "NORMAL/MASK" micro inverter ----- **MASK**
- 7 - Perform an emergency descent to the "En route" minimum altitude and, if possible, below 10000 ft.

**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 on the face.



**"EROS/INTERTECHNIQUE"  
GASEOUS OXYGEN SYSTEM (31000 FT)**

IN-FLIGHT AVAILABLE OXYGEN QUANTITY (Cont'd)

- 1 - Determine the usable oxygen percent using the chart Figure 9.37.1.

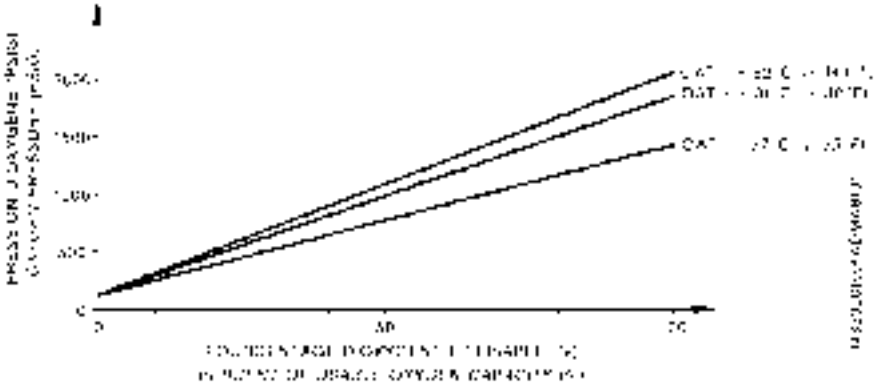


Figure 9.37.1

- 2 - Determine the oxygen duration in minutes by multiplying the values read on table Figure 9.37.2 by the percent obtained with the chart Figure 9.37.1.

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 9.37.2

<b>AFTER LANDING</b>
"OXYGEN" switch ----- <b>OFF</b>

**SECTION 5  
 PERFORMANCE**

The installation of the gaseous oxygen system does 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**

Information hereafter supplement the one given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
<b>35 - OXYGEN</b>				
A	Gaseous oxygen system (31000 ft) (OPT70 35001D)	EROS/ INTERTECHNIQUE	24.692 (11.200)	178.19 (4.526)

**SECTION 7  
DESCRIPTION**

The TBM 700 airplane is equipped with an optional gaseous oxygen system, which 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.

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 9.37.3, 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 supplying the "OXYGEN" CAS message located on the MFD unit. This CAS 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).

"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (31000 FT)**

An indicating and control panel located in the cockpit overhead panel at the disposal of the pilot includes :

- a graduated pressure gage to permit checking the cylinder charge,
- a two-position valve ON/OFF ("OXYGEN" switch) to permit the supply of the front seats occupiers masks,
- a two-position valve ON/OFF ("PASSENGERS OXYGEN" switch) with guard to permit the supply of the passengers four masks, when the first valve is open.

An altimetric valve provides an automatic passengers masks actuation function at a cabin altitude between 13250 and 14750 ft.

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 switch ("NORMAL/MASK" micro inverter) under cover located on the instrument panel near the pilot's control wheel, with 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 smoke goggles are stowed in the drawer of the cabinet at the rear of the pilot.

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 both switches at its disposal are set to ON, or automatically at a cabin altitude between 13250 and 14750 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 EMERGENCY DESCENT

Number of occupants		OUTSIDE TEMPERATURE						
Cockpit	Cabin	110°F/ 43°C	90°F/ 32°C	70°F/ 21°C	50°F/ 10°C	30°F/ -1°C	10°F/ -12°C	-10°F/ -23°C
1	0	631	614	<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

(Values in PSIG)

*Conditions :*

1. 4 minutes from 31000 to 15000 ft. All equipment used from 31000 ft.
2. Plus 30 minutes usage by each pilot and passenger at 15000 ft.
3. Plus 86 minutes usage by each pilot at 10000 ft.

*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 "EN ROUTE" ALTITUDE**

Number of occupants		OUTSIDE TEMPERATURE						
Cockpit	Cabin	110°F/ 43°C	90°F/ 32°C	70°F/ 21°C	50°F/ 10°C	30°F/ -1°C	10°F/ -12°C	-10°F/ -23°C
1	0	618	602	<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

(Values in PSIG)

*Conditions :*

1. *Flight above 15000 ft. All equipment used.*
2. *1 hour usage by each pilot and passenger.*
3. *Plus 1 hour usage by each pilot under 15000 ft.*

*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**

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

(Values in PSIG)

Conditions :

1. Flight under 15000 ft.
2. 90 minutes usage by each pilot and one passenger.
3. Plus 30 minutes usage by each pilot at 10000 ft.

NOTE :

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.

**SECTION 8**  
**HANDLING, SERVICING AND MAINTENANCE**

The operations hereafter supplement those of the standard airplane described in Section 8 "Handling, servicing and maintenance" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option "EROS/INTERTECHNIQUE" GASEOUS OXYGEN SYSTEM (31000 FT)" and with MOD70-0276-00.

These directives replace the one described in Chapter "Servicing", Paragraph "Oxygen", of the basic Pilot's Operating Handbook.

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 9.37.3, located on the inside of the cylinder service door, gives the cylinder charge maximum pressure according to the environment temperature.

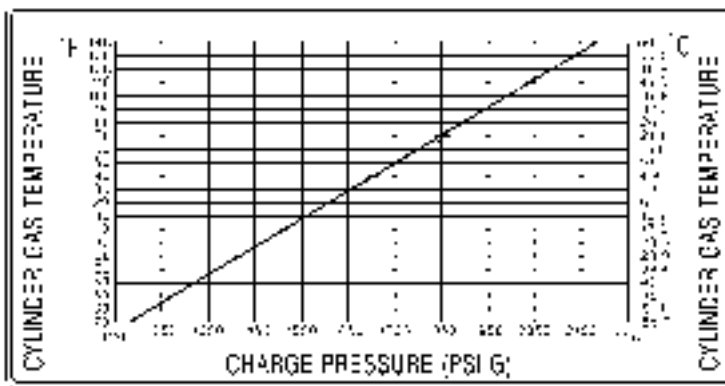


Figure 9.37.3 - Charge pressure chart

**REPLENISHMENT PROCEDURE****WARNING**

**MAKE SURE THAT THE AIRPLANE IS FITTED WITH A GROUING 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 9.37.3 which lists the required pressures according to the cylinder temperature.*

Open the oxygen service door on the R.H. rear karman.

Measure the oxygen cylinder temperature.

Make sure the thermometer indication is constant. Note the indication.

Refer to the temperature/pressure chart for the correct oxygen cylinder pressure.

"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (31000 FT)**

If the pressure on the oxygen cylinder gage is lower, fill the oxygen cylinder.

Make sure the area around the oxygen cylinder charging valve is clean. Remove the cap from the charging valve.

Make sure the oxygen supply hose is clean and connect it to the charging valve.

Slowly pressurize the oxygen cylinder to the correct pressure.

Close the oxygen supply and let the cylinder temperature become stable.

Monitor the oxygen pressure on the gage and fill to the correct pressure if necessary.

Release the pressure in the oxygen supply hose and disconnect from the charging valve.

Install the cap on the charging valve.

Make sure all the tools and materials are removed and the work area is clean and free from debris.

Close the oxygen service door.

## **PASSENGER MASKS REPACKING INSTRUCTIONS**

### **WARNING**

**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**

### **WARNING**

**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**

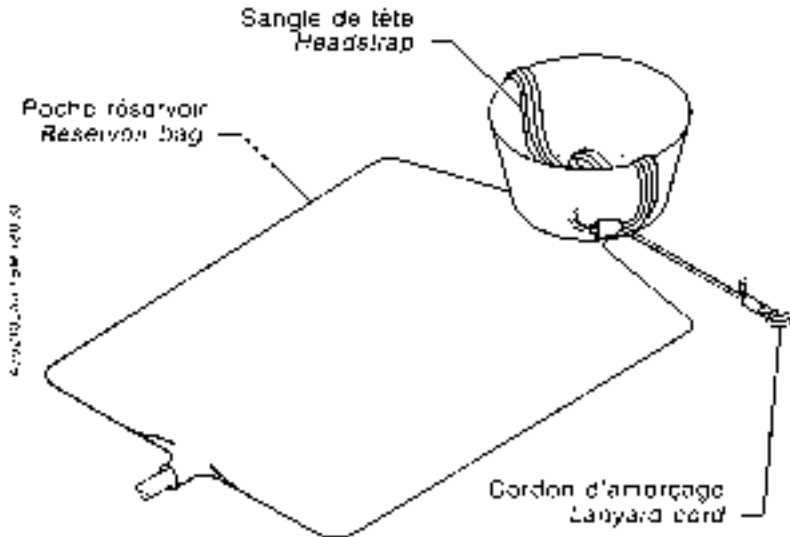
## WARNING

### **MASKS SHALL BE REPACKED IN AN AREA FREE OF OIL, GREASE, FLAMMABLE SOLVENTS OR OTHER CONTAMINANTS**

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.

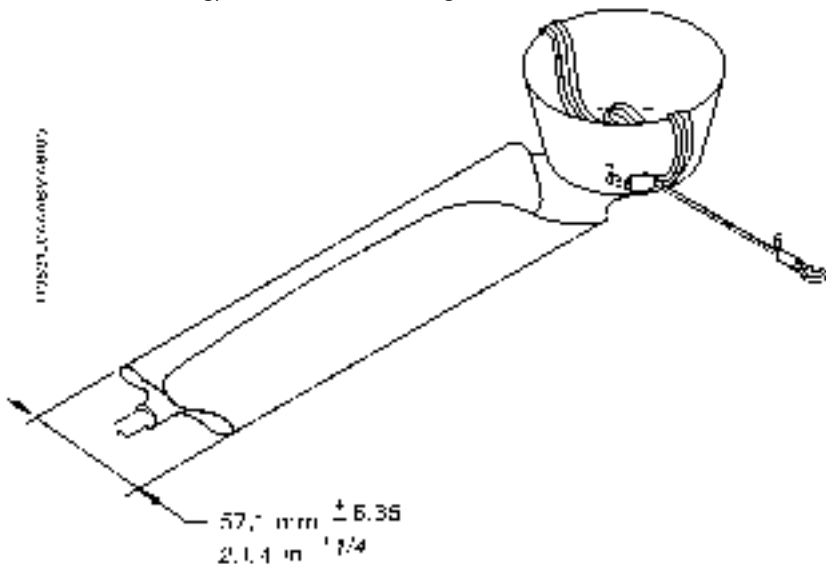
Fold headstrap into facepiece. Pull lanyard cord out to side of facepiece so that it does not interfere with repacking.

Lay reservoir bag on flat surface and smooth out wrinkles.



"EROS/INTERTECHNIQUE"  
**GASEOUS OXYGEN SYSTEM (31000 FT)**

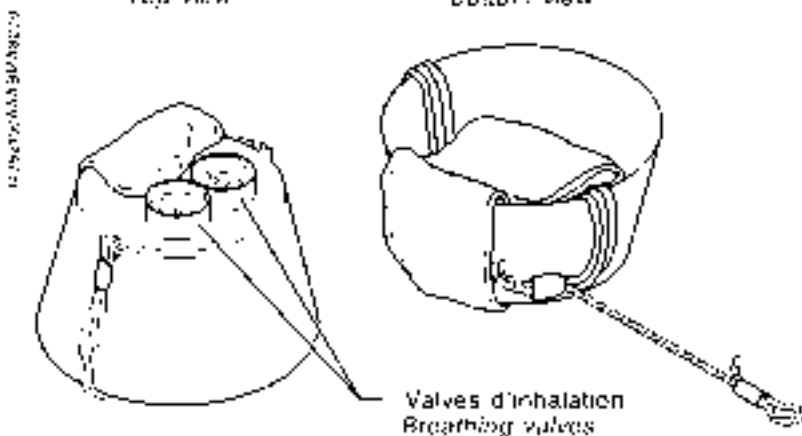
Gently fold reservoir bag lengthwise into thirds (outside edges folded inward over center of bag). Do not crease bag.



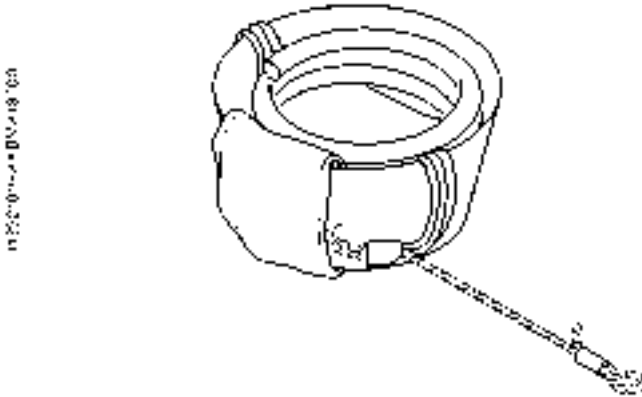
Fold reservoir bag away from breathing valves and into facepiece. Make sure bag does not cover breathing valves.

Vue de dessus  
 Top view

Vue de dessous  
 Bottom view



Coil oxygen tubing inside facepiece over reservoir bag.



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**

Insert lanyard pin into corresponding check valve.

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.

Close and latch deployment container lid.

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# **SUPPLEMENT**

## **OPERATION AT 31000 FT**

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## **SECTION 1**

### **GENERAL**

This supplement is intended to inform the pilot about the limitations and the operation of the TBM 700 airplane at 31000 ft.

## **SECTION 2**

### **LIMITATIONS**

The limitations hereafter supplement those of the standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook, when the TBM 700 airplane is equipped with the option "OPERATION AT 31000 FT" and with MOD70-0276-00.

The operation of the TBM 700 airplane at 31000 ft is subjected to the application of the "PRATT & WHITNEY" Service Bulletins No. 14261 and 14308.

Flight at 31000 ft is authorized, if the option OPT70 35001D "EROS/INTERTECHNIQUE" Gaseous oxygen system (31000 ft)" - refer to Section 9, Supplement 37 Edition 1 - is installed and correctly operates on the TBM 700 airplane.

## **SECTION 3**

### **EMERGENCY PROCEDURES**

The operation of the TBM 700 airplane at 31000 ft does not change the emergency procedures described in Section 3 "Emergency procedures" of the basic Pilot's Operating Handbook.

## **SECTION 4**

### **NORMAL PROCEDURES**

The operation of the TBM 700 airplane at 31000 ft does not change the normal procedures described in Section 4 "Normal procedures" of the basic Pilot's Operating Handbook.

**SECTION 5**  
**PERFORMANCE**

Information hereafter supplement or replace the one given for the standard airplane in Section 5 "Performance" of the basic Pilot's Operating Handbook.

**5.1 - CABIN PRESSURIZATION ENVELOPE**

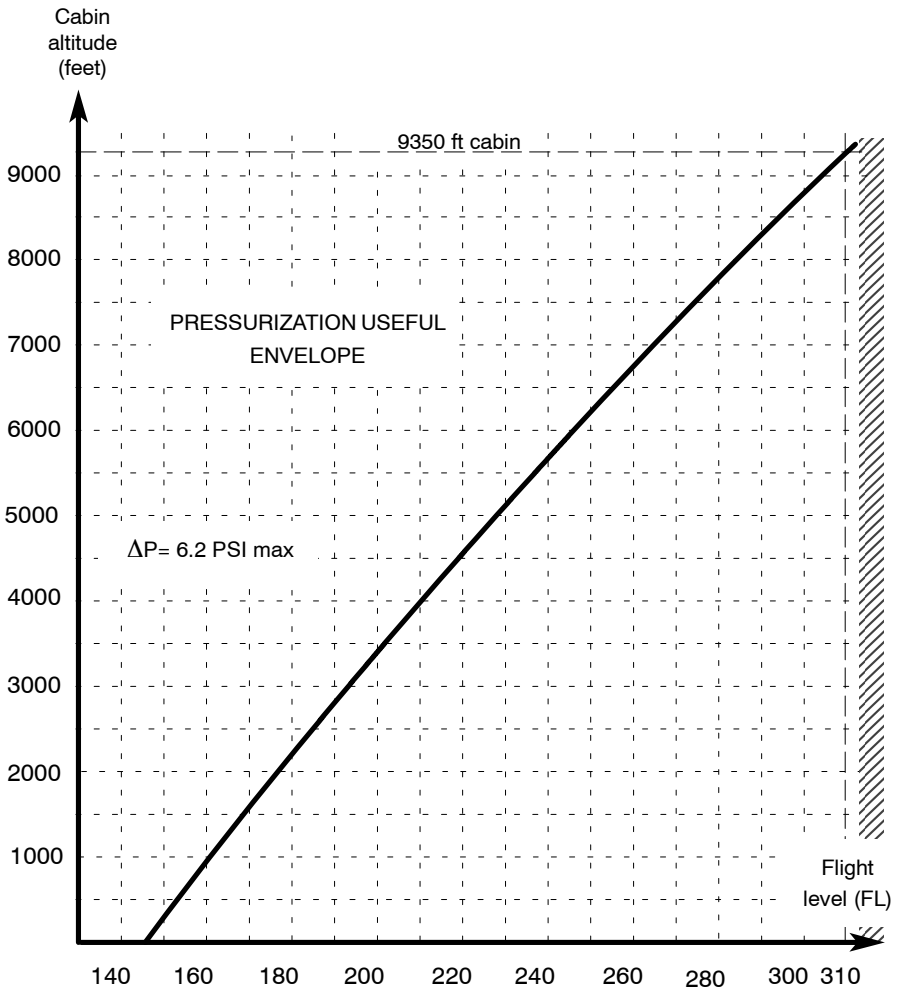


Figure 9.38.1 - CABIN PRESSURIZATION ENVELOPE

**5.2 - ENGINE OPERATION**

Conditions: **31000 ft**

Landing gear and flaps UP

Np = 2000 RPM - BLEED LO

OAT (°C)	Maximum Climb Power IAS = 130 kt TRQ (%)	Normal (recommended) Cruise Power TRQ (%)	Maximum Cruise Power TRQ (%)
- 66	91	95	100
- 64	89	93	99
- 62	86	91	97
- 60	85	89	95
- 58	83	87	93
- 56	81	85	91
- 54	79	83	89
- 52	77	81	87
- 50	75	79	85
- 48	74	77	83
- 46	73	75	81
- 44	72	73	79
- 42	70	71	77
- 40	69	70	75
- 38	67	69	74
- 36	65	67	72
- 34	64	65	70
- 32	62	63	68
- 30	61	61	66
- 28	59	59	64
- 26	57	57	62
- 24	55	56	60
- 22	54	54	59
- 20	53	52	57

Figure 9.38.2 - ENGINE OPERATION

### **5.3 - CLIMB PERFORMANCE : TIME, CONSUMPTION AND CLIMB DISTANCE**

To obtain the values for 31000 ft, refer to Section 5 "Performance", Chapter 5.9 "Climb performance", of the basic Pilot's Operating Handbook and add 4 % to the values given for 30000 ft in the tables "Time, consumption and climb distance".

### **5.4 - MAXIMUM, NORMAL (RECOMMENDED) AND INTERMEDIATE CRUISE PERFORMANCE**

To obtain the values for 31000 ft, refer to Section 5 "Performance", Chapter 5.10 "Cruise performance", of the basic Pilot's Operating Handbook and decrease the values given for 30000 ft in the tables "Maximum cruise", "Normal (recommended) cruise" and "Intermediate cruise" by :

- 1.85 US Gal/h for the fuel flow,
- 5 kt for IAS,
- 3 kt for TAS.

### **5.5 - LONG RANGE CRUISE PERFORMANCE**

To obtain the values for 31000 ft, refer to Section 5 "Performance", Chapter 5.10 "Cruise performance", of the basic Pilot's Operating Handbook and decrease the values given for 29000 ft in the tables "Long Range Cruise" by :

- 1 % for TRQ values,
- 1.2 US Gal/h for the fuel flow (FF),
- 4 kt for IAS,
- 2 kt for TAS.

**SECTION 6**  
**WEIGHT AND BALANCE**

The operation of the TBM 700 airplane at 31000 ft does not change the weight and balance given in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

**SECTION 7**  
**DESCRIPTION**

In order to be able to fly at 31000 ft, the "PRATT & WHITNEY" Service Bulletins No. 14261 and 14308 must be applied for the engine and the airplane must be equipped with the option OPT70 35001D "EROS/INTERTECHNIQUE" Gaseous oxygen system (31000 ft)" - refer to Section 9, Supplement 37 Edition 1.

# SUPPLEMENT

## CHIP DETECTION SYSTEM

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**SECTION 1**  
**GENERAL**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary to the operation when the TBM airplane is equipped with the option "CHIP DETECTION SYSTEM" and with MOD70-0276-00.

**SECTION 2**  
**LIMITATIONS**

The installation and the operation of the CHIP DETECTION SYSTEM do not change the limitations of the airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook.



**SECTION 3**  
**EMERGENCY PROCEDURES**

The emergency procedures hereafter supplement 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 "CHIP DETECTION SYSTEM" and with MOD70-0276-00.

**OIL CONTAMINATION CHIP**

Indication : "**CHIP**" amber CAS message lights on

**On ground**

*Before engine start :*

1 - Do not start engine.

*After engine start or after landing :*

1 - Return to parking area.

2 - Shut down engine.

3 - Inspect chip detector(s) and engine, if required.

**In flight**

1 - Check and monitor engine parameters.

2 - Land as soon as practical.

3 - Shut down engine.

4 - Inspect chip detector(s) and engine, if required.

**SECTION 4**  
**PROCEDURES NORMALES**

The normal procedures hereafter supplement those of the standard airplane described in Section 4 "Normal procedures" of the basic Pilot's Operating Handbook, when the TBM airplane is equipped with the option "CHIP DETECTION SYSTEM" and with MOD70-0276-00.

When "CHIP" amber CAS message lights on, it causes the illumination of the "Master Caution" light.

**SECTION 5**  
**PERFORMANCE**

The installation and the operation of the CHIP 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**

Information hereafter supplement those given for the standard aircraft in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	<b>79 - LUBRICATION</b>  Chip detection system (1 or 2 detectors) (MOD70-0169-79D)		Negligible	/

**SECTION 7**  
**DESCRIPTION**

The chip detection system enables the monitoring of engine oil system.

The system includes one chip detector installed on propeller reduction gear box and, if installed, a second chip detector installed on engine accessory gear box.

In case of chip detection, "CHIP" amber CAS message on G1000 system screen goes on.

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**SUPPLEMENT****"AIRBORNE" GWX 68**  
**COLOR WEATHER RADAR****TABLE OF CONTENTS**

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**SECTION 1****GENERAL**

This supplement supplies information necessary for the operation of the airplane when the optional “AIRBORNE” GWX 68 color weather radar system is installed in the TBM 700 or TBM 850 airplanes equipped with MOD70-0176-00 or MOD70-276-00.

**SECTION 2****LIMITATIONS**

These limitations supplement those of standard airplane described in Section 2 “Limitations” of the basic Pilot’s Operating Handbook.

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.

**Airplanes equipped with MOD70-0176-00**

The “GARMIN” G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 850 No. 190-00708-00 at its latest revision shall be readily available to the pilot whenever the operation of the radar system is predicted.

**Airplanes equipped with MOD70-0276-00**

The “GARMIN” G1000 Integrated Flight Deck Cockpit Reference Guide for the Daher-Socata TBM 700 No. 190-01247-00 at its latest revision shall be readily available to the pilot whenever the operation of the radar system is predicted.

**SECTION 3**  
**EMERGENCY PROCEDURES**

Installation and operation of “AIRBORNE” GWX 68 color weather radar system do not change the basic emergency procedures of the airplane described in Section 3 “Emergency procedures” of the basic Pilot’s Operating Handbook.

**CAUTION**

**IN REVERSIONARY MODE, THE WEATHER RADAR SYSTEM  
AUTOMATICALLY SWITCHES TO STANDBY MODE. THE SYSTEM  
REMAINS IN STANDBY MODE UNTIL BOTH DISPLAYS ARE  
RESTORED.**

**IN REVERSIONARY MODE, THE WEATHER RADAR SYSTEM  
CANNOT BE CONTROLLED**

**SECTION 4**  
**NORMAL PROCEDURES**

The normal procedures hereafter supplement those of the standard airplane described in Section 4 "Normal procedures" of the basic Pilot's Operating Handbook.

Normal operating procedures for "AIRBORNE" GWX 68 color weather radar system are outlined in the Pilot's Guide, the references of which are given in Section 2 "Limitations" of this Supplement.

**CAUTION**

**IN REVERSIONARY MODE, THE WEATHER RADAR SYSTEM  
AUTOMATICALLY SWITCHES TO STANDBY MODE. THE SYSTEM  
REMAINS IN STANDBY MODE UNTIL BOTH DISPLAYS ARE  
RESTORED.  
IN REVERSIONARY MODE, THE WEATHER RADAR SYSTEM  
CANNOT BE CONTROLLED**

**AFTER ENGINE STARTING**

- Radar Mode Softkey ..... **STANDBY**  
(A one-minute warm up period is initiated. The count down is displayed on the screen)

**AFTER TAKE OFF**

- Radar Mode Softkey ..... **As required**



<b>BEFORE LANDING</b>	
- Radar Mode Softkey .....	<b>STANDBY</b>

<b>ENGINE SHUT-DOWN</b>	
- Radar Mode Softkey .....	<b>OFF</b>

**SECTION 5**  
**PERFORMANCE**

Installation of "AIRBORNE" GWX 68 color weather radar system results in a 5 KIAS decrease in maximum cruise performance and a 3 KIAS decrease in Long Range cruise performance described in Section 5 "Performance" of the basic Pilot's Operating Handbook.

**SECTION 6**  
**WEIGHT AND BALANCE**

Information hereafter supplement the one given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
<b>34 - NAVIGATION</b>				
A	Weather radar (MOD70-0176-00 Version C) (MOD70-0276-00 Version C)	AIRBORNE	9.36 (4.246)	173.46 (4.406)

**SECTION 7**  
**DESCRIPTION**

The weather information are displayed only on the MFD (GDU 1500).

The controls for the MFD are located on both the MFD bezel and the MFD control unit (keyboard GCU 475).

- 1) GDU 1500 MFD
- 2) Radar mode
- 3) Area of weather display
- 4) Antenna stabilization status
- 5) MFD bezels
- 6) GCU 475 MFD control unit
- 7) Changes radar range, TILT and bearing
- 8) Scale for weather display

Figure 9.47.1 (1/2) - GWX 68 weather radar display and controls

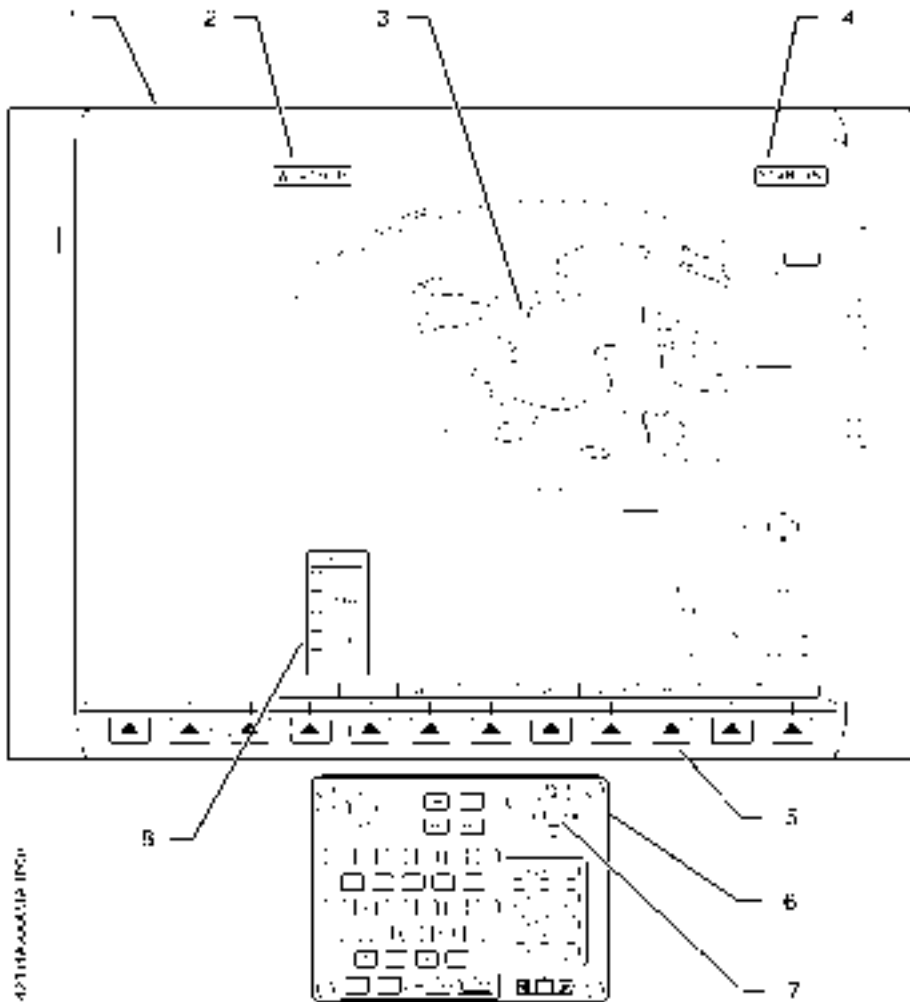
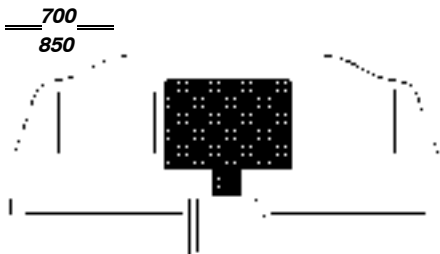


Figure 9.47.1 (2/2) - GWX 68 weather radar display and controls

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**SUPPLEMENT****"GARMIN" G1000 TAWS SYSTEM****TABLE OF CONTENTS**

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**SECTION 1****GENERAL**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary to the operation when the airplane is equipped with the option "GARMIN" G1000 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 those of the standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook, when the airplane is equipped with the option "GARMIN" G1000 TAWS SYSTEM.

The G1000 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.

The following documents or any further edition applicable to the latter, shall be readily available to the pilot, each time the TAWS system is used :

**Airplanes equipped with MOD70-0176-00**

- "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 850 No. 190-00708-00.

**Airplanes equipped with MOD70-0276-00**

- "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Daher-Socata TBM 700 No. 190-01247-00.

**SECTION 3**  
**EMERGENCY PROCEDURES**

The emergency procedures hereafter supplement 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 "GARMIN" G1000 TAWS SYSTEM.

**"TAWS FAIL" ANNUNCIATION**

The TAWS function is not operational.

**SECTION 4**  
**NORMAL PROCEDURES**

The normal procedures hereafter supplement 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 "GARMIN" G1000 TAWS SYSTEM.

**BEFORE TAKEOFF**

- "TAWS System Test OK" voice message . . . . . **HEARD**



#### 4.1 - WARNINGS OF THE TAWS FUNCTION

### **"PULL UP" AURAL WARNING**

The red "PULL-UP" PFD/MFD annunciation and MFD pop-up alert light on.

- 1 - Level the wings.
- 2 - Display the maximum power.
- 3 - Choose the optimum rate of climb adapted to airplane configuration and speed, until the warning disappears.

### **"Terrain Terrain, Pull up Pull up", "Obstacle Obstacle, Pull up Pull up", AURAL WARNINGS**

The red "PULL-UP" PFD/MFD annunciation and "TERRAIN/OBSTACLE PULL-UP" pop-up alerts light on.

Adjust airplane path in order to make the warning disappear.

#### 4.2 - CAUTIONS OF THE TAWS FUNCTION

### **"Caution terrain", "Caution obstacle", "Too low terrain" AURAL WARNINGS**

The amber "TERRAIN" PFD/MFD annunciation and "CAUTION TERRAIN/OBSTACLE" or "TOO LOW TERRAIN" pop-up alerts light on.

Adjust airplane path in order to make the warning disappear.

**"Don't sink" AURAL WARNING**

The amber "TERRAIN" PFD/MFD annunciation and "DON'T SINK" pop-up alert light on.

Re-establish a positive rate of climb.

**"Sink rate" AURAL WARNING**

The amber "TERRAIN" PFD/MFD annunciation and "SINK RATE" pop-up alert light on.

Reduce rate of descent.

**SECTION 5  
PERFORMANCE**

The installation and the operation of the "GARMIN" G1000 TAWS 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

Information hereafter supplement the one given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	<b>34 - NAVIGATION</b>  G1000 TAWS system (MOD70-0176-00 Version F) (MOD70-0276-00 Version F)	GARMIN	/	/

## SECTION 7

### DESCRIPTION

The G1000 TAWS function has 7 modes.

#### 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 7.1. 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 7.1.

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 7.1 – 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.

The aural/displayed messages associated with the FLTA function are described in the table 7.2.

Alert Type	PFD/MFD TAWS Page Annun- cia- tion	MFD Map Page Pop-Up Alert	Aural Message
Reduced Required Terrain Clearance Warning (RTC) (Red)	PULL UP	TERRAIN - PULL-UP	"Terrain, Terrain ; Pull up, Pull up"
Imminent Terrain Impact Warning (ITI) (Red)	PULL UP	TERRAIN AHEAD - PULL-UP	"Terrain Ahead, Pull up ; Terrain Ahead, Pull up"
Reduced Required Obstacle Clearance Warning (ROC) (Red)	PULL UP	OBSTACLE - PULL-UP	"Obstacle, Obstacle ; Pull up, Pull up"
Imminent Obstacle Impact Warning (IOI) (Red)	PULL UP	OBSTACLE AHEAD - PULL-UP	"Obstacle Ahead, Pull up ; Obstacle Ahead, Pull up"
Reduced Required Terrain Clearance Caution (RTC) (Amber)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain ; Caution, Terrain"
Imminent Terrain Impact Caution (ITI) (Amber)	TERRAIN	TERRAIN AHEAD	"Terrain Ahead ; Terrain Ahead"
Reduced Required Obstacle Clearance Caution (ROC) (Amber)	TERRAIN	CAUTION - OBSTACLE	"Caution, Obstacle ; Caution, Obstacle"
Imminent Obstacle Impact Caution (IOI) (Amber)	TERRAIN	OBSTACLE AHEAD	"Obstacle Ahead ; Obstacle Ahead"

Table 7.2 - FLTA alerts

**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.

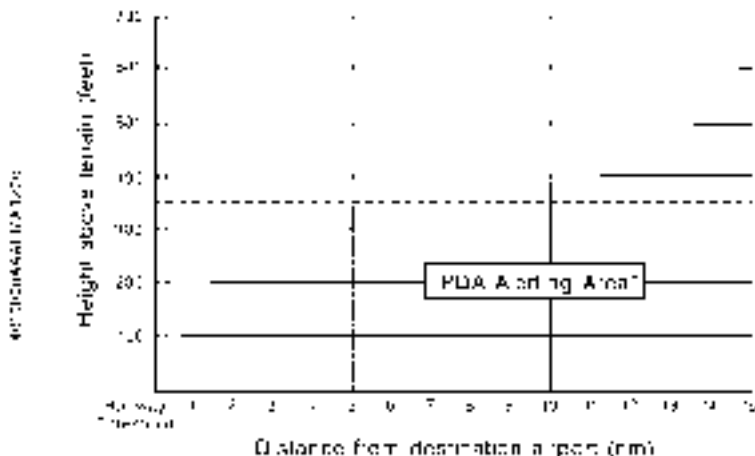


Figure 9.49.1 - PDA alerting threshold

The aural/displayed messages associated with the PDA function are described in the table 7.3.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Premature Descent Alert Caution (PDA) (Amber)	TERRAIN	TOO LOW - TERRAIN	"Too low, Terrain"

Table 7.3 - PDA alerts

## 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.

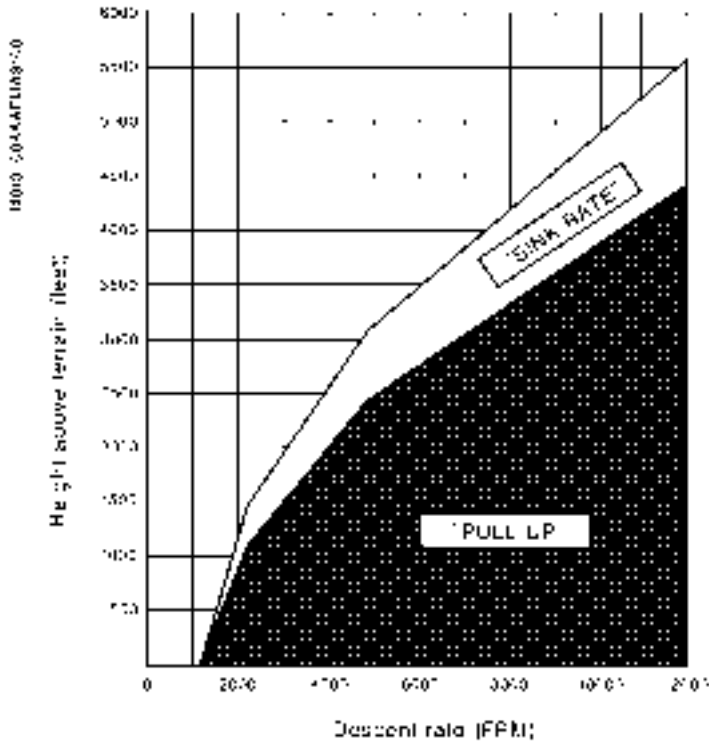


Figure 9.49.2 – Excessive Descent Rate Alert Criteria

The aural/displayed messages associated with the EDR function are described in the table 7.4.

Alert Type	PFD/MFD TAWS Page Annuncia- tion	MFD Map Page Pop-Up Alert	Aural Message
Excessive Descent Rate Warning (EDR) (Red)	<b>PULL UP</b>	PULL-UP	"Pull up"
Excessive Descent Rate Caution (EDR) (Amber)	<b>TERRAIN</b>	SINK RATE	"Sink rate"

Table 7.4 - EDR alerts

### **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 display. 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 2 Nm or less.
- . The heading change from the heading at the time of departure is less than 110 degrees.

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.

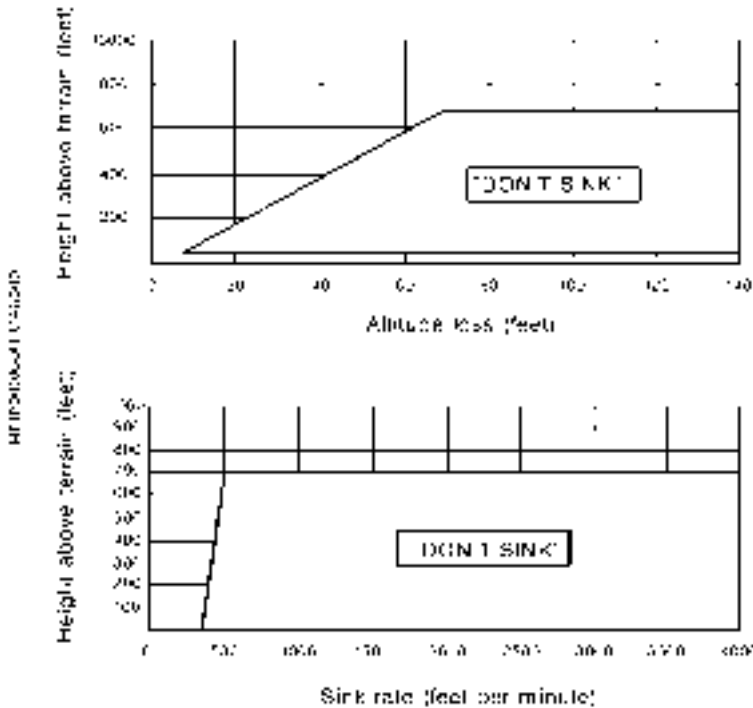


Figure 9.49.3 - Negative Climb Rate (NCR) Alert Criteria

The aural/displayed messages associated with the NCR function are described in the table 7.5.

Alert Type	PFD/MFD TAWS Page Annuncia- tion	MFD Map Page Pop-Up Alert	Aural Message
Negative Climb Rate Caution (NCR) (Amber)	TERRAIN	DON'T SINK	"Don't sink"

Table 7.5 - NCR alert

**"FIVE-HUNDRED" AURAL ALERT**

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.

**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.

**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.

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**SYNTHETIC VISION SYSTEM****TABLE OF CONTENTS**

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**SECTION 1****GENERAL**

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary to the operation when the airplane is equipped with the option "GARMIN" G1000 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 those of the standard airplane described in Section 2 "Limitations" of the basic Pilot's Operating Handbook, when the airplane is equipped with the option "GARMIN" G1000 SYNTHETIC VISION SYSTEM.

The following document, or any further edition applicable to the latter, shall be readily available to the pilot, each time the SVS is used :

### Airplanes equipped with MOD70-0176-00

- "GARMIN" G1000 Integrated Flight Deck Cockpit Pilot's Guide for the Socata TBM 850 No. 190-00709-01 or any later revision as applicable.

### Airplanes equipped with MOD70-0276-00

- "GARMIN" G1000 Integrated Flight Deck Cockpit Pilot's Guide for the Daher-Socata TBM 700 No. 190-01247-00 or any later revision as applicable.

The use of the Synthetic Vision system display elements alone for aircraft control without reference to the G1000 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 aircraft 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 procedures hereafter supplement 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 "GARMIN" G1000 SYNTHETIC VISION SYSTEM.

**INCONSISTENT DISPLAY BETWEEN SVS  
 AND  
 G1000 PRIMARY FLIGHT INSTRUMENTS**

- "PFD" key ..... **Press**
- "SYN VIS" key ..... **Press**
- "SYN TERR" key ..... **Press**
- SVS is removed from the PFD ..... **Verify**

Use G1000 primary displays for navigation and aircraft control.

**"GARMIN" G1000  
SYNTHETIC VISION SYSTEM**

**SECTION 4  
NORMAL PROCEDURES**

The normal procedures hereafter supplement 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 "GARMIN" G1000 SYNTHETIC VISION SYSTEM.

**CAUTION**

**SVS INFORMATION IS NOT A SUBSITUTE 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 (1/2)**

1 - If SVS is desired :

- "PFD" key ..... **Press**
- "SYN VIS" key ..... **Press**
- "SYN TERR" key ..... **Press**

The synthetic vision system will cycle on or off with each press of the "SYN TERR" key. The Flight Path Marker is displayed anytime "SYN TERR" is selected for display.

(a) If Pathway is desired :

- "PATHWAY" key ..... **Press**

The Pathway display will cycle on or off with each press of the "PATHWAY" key. The Pathway can be displayed separately or in conjunction with the flight director.

**NOTE :**

*The utilization of the PATHWAYS is bound by limitations mentioned in Section 2 of this Supplement.*





**SVS ACTIVATION (2/2)**

(b) If Horizon Heading is desired :

- "HRZN HDG" key ..... **Press**

The horizon heading display will cycle on or off with each press of the "HRZN HDG" key.

(c) If Airport Signs are desired :

- "APTSIGNS" key ..... **Press**

The airport signs display will cycle on or off with each press of the "APTSIGNS" key.

**NOTE :**

- For *PATHWAY, HRZN HDG and APTSIGNS* : "*SYN TERR*" must be activated first.
- When display backup mode is selected, the display of the SVS is active within 1 minute after SVS selection.

**SECTION 5  
PERFORMANCE**

The installation and the operation of the "GARMIN" G1000 SYNTHETIC VISION 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**

Information hereafter supplement the one given for the standard airplane in Section 6 "Weight and balance" of the basic Pilot's Operating Handbook.

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	<b>34 - NAVIGATION</b>  G1000 Synthetic Vision System	GARMIN	/	/

## SECTION 7

### DESCRIPTION

SVS provides additional features on the G1000 primary flight display (PFD) which display the following information :

- **Synthetic Terrain** : an artificial, database derived, three dimensional view of the terrain ahead of the aircraft within a field of view of approximately 30 degrees left and 35 degrees right of the aircraft heading. The terrain data has a resolution of 9 arc seconds.
- **Obstacles** : obstacles such as towers, including buildings over 200 AGL that are within the depicted synthetic terrain field of view.
- **Flight Path Marker (FPM)** : an indication of the current lateral and vertical path of the aircraft. The FPM is always displayed when synthetic terrain is selected for display.
- **Pathway** : a pilot selectable three dimensional representation of the programmed flight plan path that can be selected for display alone or with the flight director anytime synthetic terrain is selected for display.
- **Traffic** : a display on the PFD indicating the position of other aircraft detected by the Traffic Information System (TIS) component of the G1000 system.
- **Horizon Line** : a white line indicating the true horizon is always displayed on the SVS display.
- **Horizon Heading** : a pilot selectable display of heading marks displayed just above the horizon line on the PFD.
- **Airport Signs** : pilot selectable "signposts" displayed on the synthetic terrain display indicating the position of nearby airports that are in the G1000 database.
- **Runway Highlight** : a highlighted presentation of the location and orientation of the runway(s) at the departure and destination airports.

## USE OF PATHWAY

If Synthetic Terrain is displayed on the PFD, the Pathway may be used to assist the pilot's awareness of the programmed lateral and vertical navigation path. The following sections describe the basic use of the Pathway in various flight segments. For more detailed information, consult the G1000 Pilot's Guide.

### - Departure

Prior to departure, load and activate the desired flight plan into the G1000 FMS, set the initial altitude on the G1000 altitude selector and select GPS on the HSI display just as you would without the SVS system.

The programmed flight path will be displayed as a series of magenta boxes along the path at the flight plan altitude subject to the following conditions :

- If the first segment of the flight plan is a heading to altitude leg, the Pathway will not be displayed for that segment. The first Pathway segment displayed will be the first GPS course leg.
- The Pathway must be within the SVS field of view of 30 degrees left and 35 degrees right. If the programmed path is outside that field of view, the Pathway will not be visible on the display until the aircraft has turned toward the course.
- The Pathway will be displayed at either the altitude selected on the G1000 selector OR the altitude published for the procedure (e.g. SID) WHICHEVER IS HIGHER.

After departure, the primary aircraft control must be by reference to the primary aircraft instruments. The SVS and Pathway displays should be used to aid in awareness of the terrain and programmed flight path.

Prior to intercepting the programmed course, the Pathway will be displayed as a series of magenta "boxes" with pointers at each corner that point in the direction of the programmed course. The Pathway boxes will not be displayed on portions of the course line that would lead the pilot to intercept the course in the wrong direction.

As the aircraft approaches the center of the programmed course and altitude, the number of Pathway boxes will decrease to a minimum of four.

## - Enroute

When enroute, the Pathway will be displayed along the lateral path defined by the flight plan, at the altitude selected on the G1000 altitude selector.

Flight plan changes in altitude that require a climb will be indicated by the Pathway being displayed as a level path at the altitude entered for the current flight plan leg. Because the G1000 system does not have information available to it about aircraft performance, climb profiles are not displayed by the Pathway.

If the programmed flight plan includes one or more defined VNAV descent segments, the descent path(s) will be displayed by the Pathway as prompted by the G1000 FMS.

If the flight plan includes a significant change in course at a waypoint, the Pathway boxes toward the currently active waypoint will be magenta in color. The boxes defining the next flight plan segment may be visible, but will be displayed in a white color.

## - Approach

During approach, the SVS and Pathway displays should only be used to maintain awareness with regard to the surrounding terrain and the programmed flight path. Primary aircraft control must be accomplished by reference to the primary flight instruments and, if desired, the flight director.

## - GPS approach

During a GPS approach, the lateral path and altitude will be displayed by the Pathway in magenta along each segment including the path required to track course reversals that are part of the approach procedure (such as a holding pattern). Approach descent segments will be displayed by the Pathway as published in the approach procedure.

If Vectors-To-Final is selected as the approach transition, the Pathway will display the final approach course inbound to the Missed Approach Point (MAP). The Pathway will be shown level at the altitude set in the G1000 altitude selector, or the Final Approach Fix (FAF) crossing altitude (whichever is higher), up to the point along the final approach course where that altitude intercepts the extended VPTH or GP. If the altitude selector indicates an altitude below the airplane's current altitude, the Pathway will appear below the airplane altitude and the pilot must use normal descent techniques to intercept the VPTH or GP.

**"GARMIN" G1000  
SYNTHETIC VISION SYSTEM**

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If the altitude selector is left at an altitude above the current airplane altitude, the airplane will intercept the final approach course below the extended VPTH or GP, such that the Pathway will be displayed above the airplane until the aircraft intercepts the VPTH or GP. From the VPTH or GP intercept point, the pathway will be shown inbound to the MAP along the published lateral and vertical descent path.

**- ILS approach**

When an ILS approach is programmed into the G1000 FMS, the initial approach segments will be displayed by the Pathway in magenta at the procedure segment altitudes if they are being flown by reference to a GPS path. When the G1000 system switches to the localizer inbound to the final approach fix, the Pathway will be displayed along the localizer inbound path and glideslope in green.

If Vectors-To-Final is selected as the approach transition, the Pathway will display the final approach course inbound to the Missed Approach Point (MAP). The Pathway will be shown level at the altitude set in the G1000 altitude selector, or the Final Approach Fix (FAF) crossing altitude (whichever is higher), up to the point along the final approach course where that altitude intercepts the extended GS. If the altitude selector indicates an altitude below the airplane's current altitude, the Pathway will appear below the airplane altitude and the pilot must use normal descent techniques to intercept the GS. If the altitude selector is left at an altitude above the current airplane altitude, the airplane will intercept the final approach course below the extended GS, such that the Pathway will be displayed above the airplane until the aircraft intercepts the GS. From the GS intercept point, the pathway will be shown inbound to the MAP along the published localizer and glideslope.

**- VOR, LOC BC or other approach**

Approach segments for a VOR, LOC BC, ADF or other approach that are approved to be flown by reference to GPS will be displayed by the Pathway in a magenta color. Approach segments that are defined by other than a GPS or ILS, such as heading legs or VOR defined final approach course, will not be displayed by the Pathway.

**- Missed approach**

When the missed approach is selected on the G1000 FMS, the Pathway to the Missed Approach Holding Point will be displayed just as described for the departure segment.

The pilot must assure that the aircraft path will, at all times, comply with the requirements of the published missed approach procedure.

If the initial missed approach leg is heading-to-altitude or a leg defined by other than a GPS course, the Pathway will not be displayed for that segment.

If the course to the Missed Approach Holding Point is out of the SVS field of view during the initial missed approach climb, the Pathway will not be visible on the PFD until the aircraft is turned toward the course.

The Pathway will be displayed at the published missed approach altitude OR the altitude set on the G1000 altitude selector WHICHEVER IS HIGHER. If the G1000 altitude selector is set to MDA on the final approach segment and not reset during the initial missed approach, the Pathway will still be displayed at the published missed approach altitude.

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## **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 “ADS-B OUT function”.

The ADS-B OUT function is integrated in the optional modification MOD70-0494-34A : Garmin GTX 330 Diversity Mode S transponder # 1 with the extended squitter functionality.

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

### **1.4 - ABBREVIATIONS AND TERMINOLOGY**

#### **RADIO-NAVIGATION ABBREVIATIONS**

**ADS-B** : Automatic Dependent Surveillance-Broadcast

## **SECTION 2**

### **LIMITATIONS**

Operation of “ADS-B OUT function” does not change the limitations of the airplane described in Section 2 “Limitations” of the basic Pilot’s Operating Handbook.

## **SECTION 3**

### **EMERGENCY PROCEDURES**

Operation of “ADS-B OUT function” does not change the emergency procedures of the airplane described in Section 3 “Emergency Procedures” of the basic Pilot’s Operating Handbook.

## SECTION 4 NORMAL PROCEDURES

Operation of “ADS-B OUT function” does not change the normal procedures of the airplane described in Section 4 “Normal Procedures” of the basic Pilot’s Operating Handbook.

## SECTION 5 PERFORMANCE

Operation of “ADS-B OUT function” does not change the performance of the airplane described in Section 5 “Performance” of the basic Pilot’s Operating Handbook.

## SECTION 6 WEIGHT AND BALANCE

Information 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 “ADS-B OUT function”.

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>34-53 - Transponder</b>		
O	0494-34A	Transponder # 1 Mode S with diversity and extended squitter	GTX330D ES 7.50 (3.400)	153.86 (3.908)

## **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 "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.

ADS-B OUT data is only transmitted via transponder # 1. Use of transponder # 2 (if installed) results in a loss of the ADS-B OUT data transmission.

The loss of an interfaced input to the transponder #1 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.

If the transponder # 1 detects any internal fault or failure with the ADS-B OUT functionality, the following advisory message "NO ADSB" will be displayed on the transponder screen.

After being informed of ADS-B OUT failure either by the advisory message "NO ADSB" or by Air Traffic Control, it is possible to disable ADS-B OUT function by selecting transponder # 2 (if installed).

## **SECTION 8**

### **HANDLING, SERVICING AND MAINTENANCE**

Operation of "ADS-B OUT function" does not change the handling, servicing and maintenance of the airplane described in Section 8 "Handling, Servicing and Maintenance" of the basic Pilot's Operating Handbook.