DAHER-SOCATA

PILOT'S INFORMATION MANUAL

TBM 850 – Edition 1

DAHER-SOCATA

TBM 850
S/N 269 and from S/N 434

PILOT'S INFORMATION MANUAL

CAUTION

THIS INFORMATION MANUAL IS A NON−OFFICIAL COPY OF THE PILOT'S OPERATING HANDBOOK AND MAY BE USED FOR GENERAL INFORMATION PURPOSES ONLY.
IT IS NOT KEPT CURRENT AND THEREFORE CANNOT BE USED AS A SUBSTITUTE FOR AIRWORTHINESS AUTHORITIES APPROVED MANUAL WHICH IS THE ONLY ONE INTENDED FOR OPERATION OF THE AIRPLANE.

For any information concerning this document, please contact :

SOCATA
DIRECTION DES SERVICES
65921 TARBES CEDEX 9
FRANCE

TELEPHONE : 33 (0)5.62.41.73.00
TELEFAX : 33 (0)5.62.41.76.54

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SOCATA MODIFICATIONS - INDEX

NOTE :
The standardized name for SOCATA modifications is :
MOD70-XXX-XX

MOD70 No.	SUBJECT	CLASSIF.
068-32	Nose gear tires	minor
134-32	Variants of main landing gear tire	Major
0158-28*	Fuel gauging amplifier INTERTECHNIQUE	Minor
0188-00*	Increase of maximum cruise/climb engine power to 850 SHP	Major
0176-00*	G1000 Integrated Flight Deck - TBM 700 equipped with modification MOD70-0188-00 (TBM700N), modification MOD70-0211-57 (Increased capacity wings) and modification MOD70-0158-28 (Fuel gauging amplifier) Version A : Basic version Version I : Selected cabin altitude repeater potentiometer interface	Major
0189-53	Cabin floors new generation and redefinition of floors C2-C17 - Addition of an extinguisher support compatible with new floors if aircraft not equipped with right bottom cabinet Version A : Aircraft equipped with optional right bottom cabinet (MOD70-0171-25), extinguisher installed on the cabinet Version B : Aircraft not equipped with optional right bottom cabinet + extinguisher support directly attached to the rails	minor
0190-32	Reinforcement of main landing gear legs	Major
0207-00*	Global Air System (GAS), Oxygen system and cabin interiors	Major

MOD70 No.	SUBJECT	CLASSIF.
0211-57*	Increased capacity wings	Major
0217-24*	Battery firewall screen	minor
0219-33*	PL13, PL23 and PL40 back lighted panels	minor
0220-00	Commercial standard including following evolutions : Glass cockpit, new pressurization system, air conditioning and oxygen systems, new cabin interiors and rise fuel tanks (with modifications MOD70-0176-00 and MOD70-0207-21)	minor
0221-21	Improvement of cabin comfort (airplanes having applied modification MOD70-0207-00)	minor
0223-21	Modification of software version : from L82024AAH to L82024AAJ version (airplanes having applied modification MOD70-0221-21)	minor

* Modifications integrated in the modification MOD70-0220-00.

NOTE 1 :
Optional modifications are integrated in the list of equipment - refer to the list of equipment available in SOCATA Report reference NAV No. 34/90-RJ-App 1, located at the end of this POH.

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SECTION 1

GENERAL

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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 850 airplane. It also contains supplemental data supplied by the manufacturer.

The "GARMIN G1000 Integrated Flight Deck Cockpit Reference Guide for SOCATA TBM 850", P/N 190-00708-04, or any later version as applicable, must be permanently kept in the airplane with the Pilot's Operating Handbook.

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.

1.1 - GENERAL

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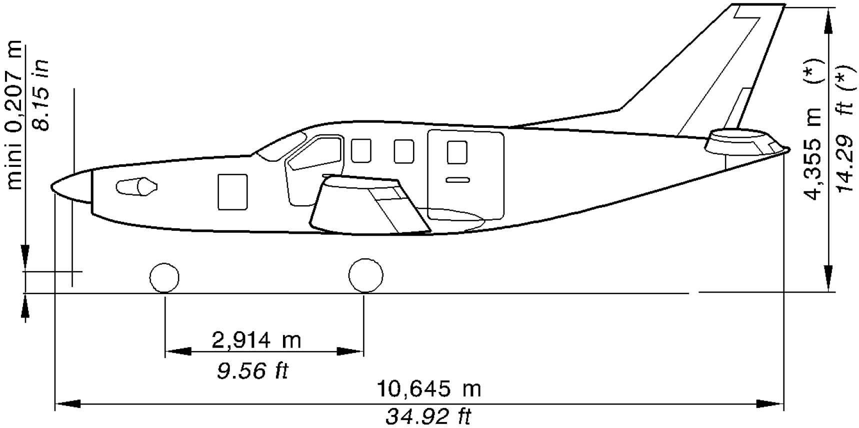
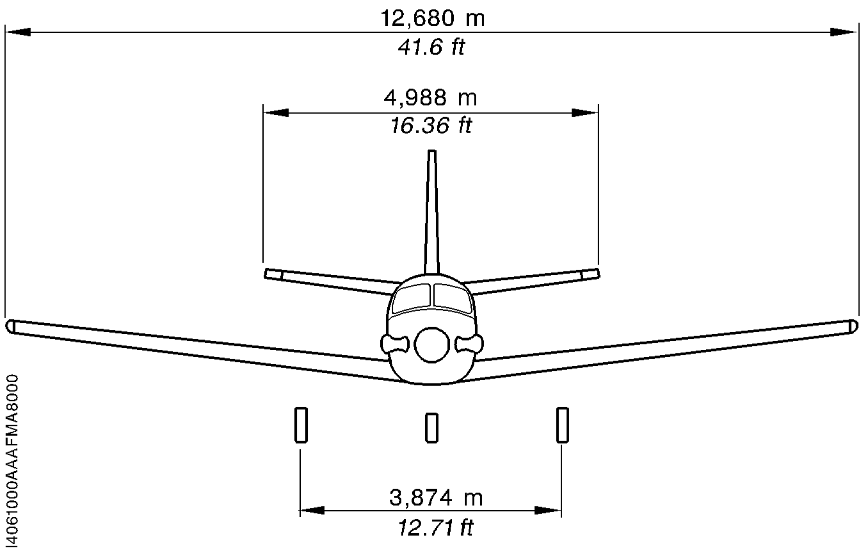
1.2 - THREE VIEW DRAWING





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

Figure 1.2.1 (1/2) - THREE VIEW DRAWING

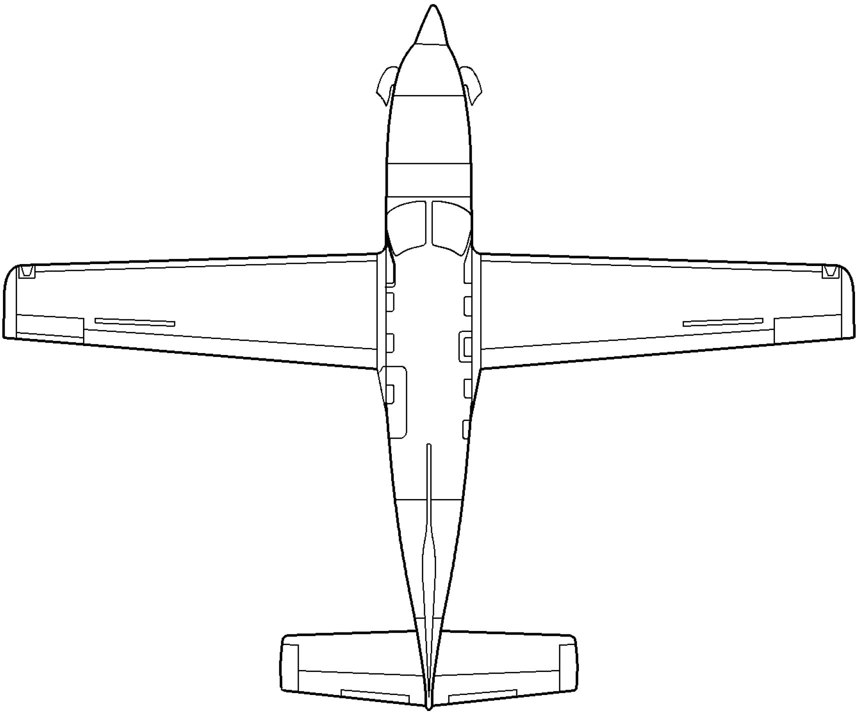


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Figure 1.2.1 (2/2) - THREE VIEW DRAWING

1.3 - DESCRIPTIVE DATA

ENGINE

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 66D

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

Compressor type :	4 axial stages 1 centrifugal stage
Combustion chamber type :	Annular
Turbine type :	1 gas generator turbine stage 2 power turbines stages

Horsepower rating and propeller speed : 850 SHP at 2000 RPM

PROPELLER

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-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 : 301 us gal (1140 Litres)
Total capacity each tank : 150.5 us gal (570 Litres)
Total usable : 292 us gal (1106 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 : 0.30 qt / hr (0.29 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 : 7430 lbs (3370 kg)
Takeoff : 7394 lbs (3354 kg)
Landing : 7024 lbs (3186 kg)
Baggage weight (refer to Section 6 for cargo loading instructions) :
- In FWD compartment (non pressurized) : 110 lbs (50 kg)
- in rear part of pressurized cabin : 220 lbs (100 kg)

STANDARD AIRPLANE WEIGHTS

Standard empty weight : 4563 lbs (2070 kg)
With "pilot" door : 4608 lbs (2090 kg)
Maximum useful load : 2831 lbs (1284 kg)
With "pilot" door : 2787 lbs (1264 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)
Number of cabin entries : 1 (standard) + 1 "pilot" door (if installed)
Entry width (standard) : 3' 6.52" (1.08 m)
Entry height (standard) : 3' 10.85" (1.19 m)
"Pilot" entry mean width : 2' 3.6" (0.70 m)
"Pilot" entry mean height : 3' 2.16" (0.97 m)

SPECIFIC LOADINGS

Wing loading : 38.16 lbs / sq.ft (186.3 kg / $m^{2)}$
Power loading : 8.7 lbs / SHP (3.95 kg / SHP)

1.4 - ABBREVIATIONS AND TERMINOLOGY

METEOROLOGICAL TERMINOLOGY

ISA : ***International standard atmosphere***

OAT : ***Outside air temperature***

SAT : ***Static air temperature***

QFE : Atmospheric pressure at the airport reference point.

QNH : Atmospheric pressure at sea level, at aircraft position.

NOTE :
On the ground, the altimeter will indicate ”zero” if it is set to QFE ; it will indicate airport altitude if it is set to QNH.

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

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

GENERAL AIRSPEED TERMINOLOGY AND SYMBOLS

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

A	:	Ampere or Amber
ADC	:	Air Data Computer
AGL	:	Above ground level
ALT. SEL.	:	Altitude selector
ALTI	:	Altimeter
AMP.	:	Ampere
AP	:	Autopilot
AUTO SEL	:	Automatic selector
AUX BP	:	Auxiliary boost pump
BAT	:	Battery
BAT OVHT	:	Battery overheat
BRT	:	Brightness
CAS	:	Crew Alerting System
˚C	:	Celsius degree
CHiPS	:	Cable Harness Protection System
CONT.	:	Control
DIEGME	:	Diethylene glycol monomethyl ether
DISC	:	Disconnect
DN	:	Down
ECS	:	Environmental control system
EGME	:	Ethylene glycol monomethyl ether
EMER	:	Emergency
ENCOD. ALTI	:	Encoding altimeter
ESHP	:	Estimated shaft horsepower
ESS. BUS TIE	:	Essential BUS tie
EXT. LIGHTS	:	Exterior lightings
˚F	:	Fahrenheit degree
FCU	:	Fuel control unit
FIRE EXTING	:	Fire extinguisher
FL	:	Flight level
FOB	:	Fuel On Board
ft	:	Feet
ft/min	:	Feet per minute
G	:	Green
HI	:	High
HP	:	High pressure
hPa	:	Hectopascal
hr	:	Hour

HTR	:	Heater
IGNIT	:	Ignition
in	:	Inch
INERT SEP	:	Inertial separator
INDIC	:	Indicator
in.Hg	:	Inch of mercury
INT. LIGHTS	:	Interior lightings
INSTR.	:	Instrument
ITT	:	Interturbine temperature
kg	:	Kilogram
kt	:	Knot (1 nautical mile/hr - 1852 m/hr)
kW	:	Kilowatt
l	:	Litre
L	:	Left
l/h	:	Litre / hour
lb or lbs	:	Pound(s)
L / D	:	Lift-to-drag
LDG	:	Landing
LDG GR	:	Landing gear
LRCR	:	Long Range Cruise
LO	:	Low
LP	:	Low pressure
LRN	:	Long range navigation
LTS TEST	:	Lightings test
m	:	Metre
m.a.c.	:	Mean aerodynamic chord
MAIN GEN	:	Main generation
MAN	:	Manual
MAN OVRD	:	Manual override
MAX RPM	:	Maximum revolutions per minute
MFD	:	Multi-function Display
MIN	:	Minimum
min	:	Minute
mm	:	Millimetre
MLW	:	Maximum Landing Weight
MRW	:	Maximum Ramp Weight
MTOW	:	Maximum Takeoff Weight
MXCR	:	Maximum Cruise
MZFW	:	Maximum Zero Fuel Weight
NM	:	Nautical mile

NOCR	:	Normal cruise (recommended)
NORM	:	Normal
PFD	:	Primary Flight Display
PHF	:	Plan Horizontal Fixe (Horizontal stabilizer)
PRESS	:	Pressure
PROP	:	Propeller
psi	:	Pounds per square inch
qt	:	Quart (¼ us gal)
QTY	:	Quantity
R	:	Red or Right
RUD	:	Rudder
s or sec	:	Second
SEL	:	Selector
SIG	:	Signalization
SL	:	Sea level
S/N	:	Serial number
SPKR	:	Speaker
ST - BY	:	Stand-by
STALL HTR	:	Stall heater
Std	:	Standard
T°	:	Temperature
TEMP	:	Temperature
TO	:	Takeoff
TURN COORD	:	Turn coordinator
us gal	:	Gallon U.S
V	:	Volt or Voltage
WARN	:	Warning
W / S	:	Windshield

RADIO - NAVIGATION ABBREVIATIONS

ADF	:	Automatic Direction Finder System
ADI	:	Attitude Director Indicator
AFCS	:	Automated Flight Control System
AHRS	:	Attitude and Heading Reference System
ATC	:	Transponder
B RNAV	:	Basic aRea NAVigation
CDI	:	Course Deviation Indicator
COM	:	Communications Transceivers
DME	:	Distance Measuring Equipment
ELT	:	Emergency Locator Transmitter
FMS	:	Flight Management System
GPS	:	Ground Positioning System
HF	:	High Frequency
IFR	:	Instrument Flight Rules
ILS	:	Instrument Landing System
IMC	:	Instrument Meteorological Conditions
L NAV	:	Lateral NAVigation
LPV	:	Localizer Precision Vertical
MKR	:	Marker Radio Beacon
NAV	:	Navigation Indicators or Receivers
P RNAV	:	Precision aRea NAVigation
R NAV	:	Area NAVigation
RNP	:	Required Navigation Performance
TAS	:	Traffic Advisory System
TAWS	:	Terrain Awareness Warning System
VFR	:	Visual Flight Rules

VHF	**:**	Very High Frequency
VMC	**:**	Visual Meteorological Conditions
V NAV	**:**	Vertical NAVigation
VOR	**:**	VHF Omnidirectional Range
VOR / LOC	**:**	VHF Omnidirectional Range LOCalizer
WAAS	**:**	Wide Area Augmentation System
WXR	**:**	Weather surveillance radar
XPDR	**:**	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

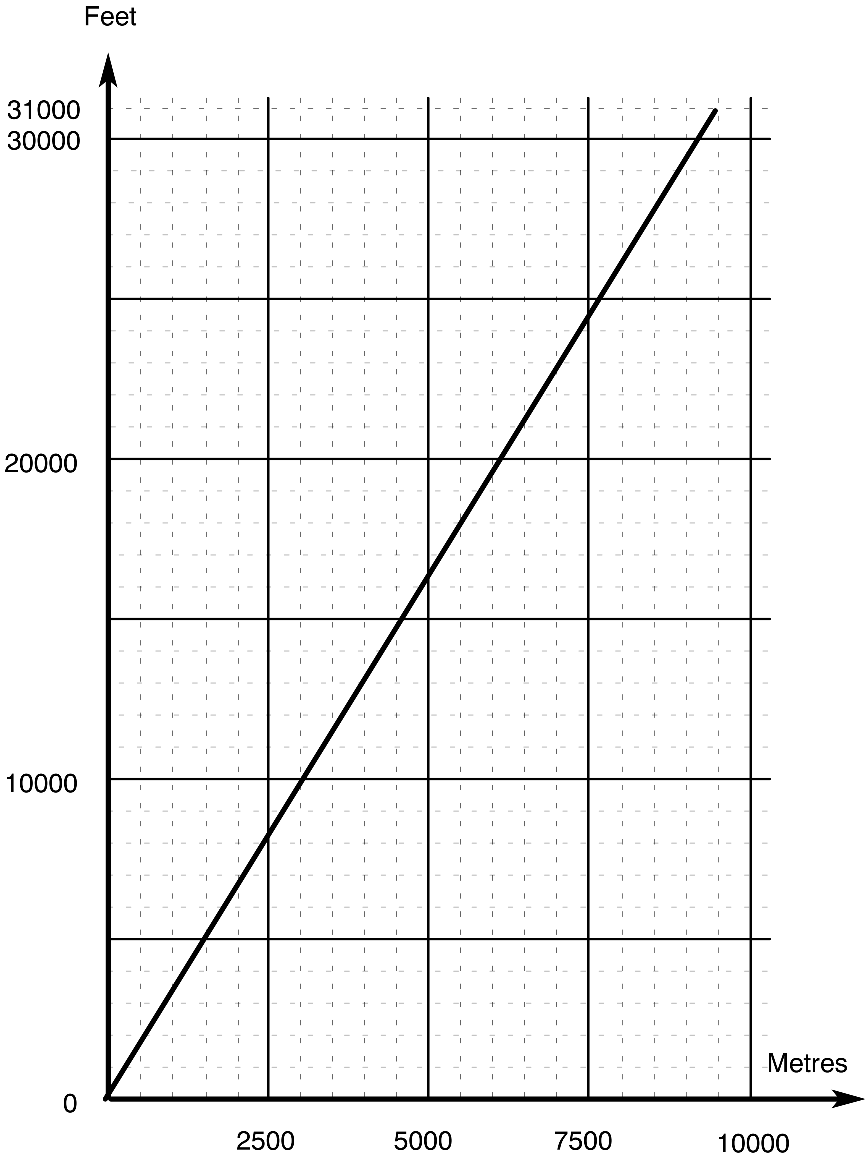

Figure 1.5.2 - FEET VERSUS METRES

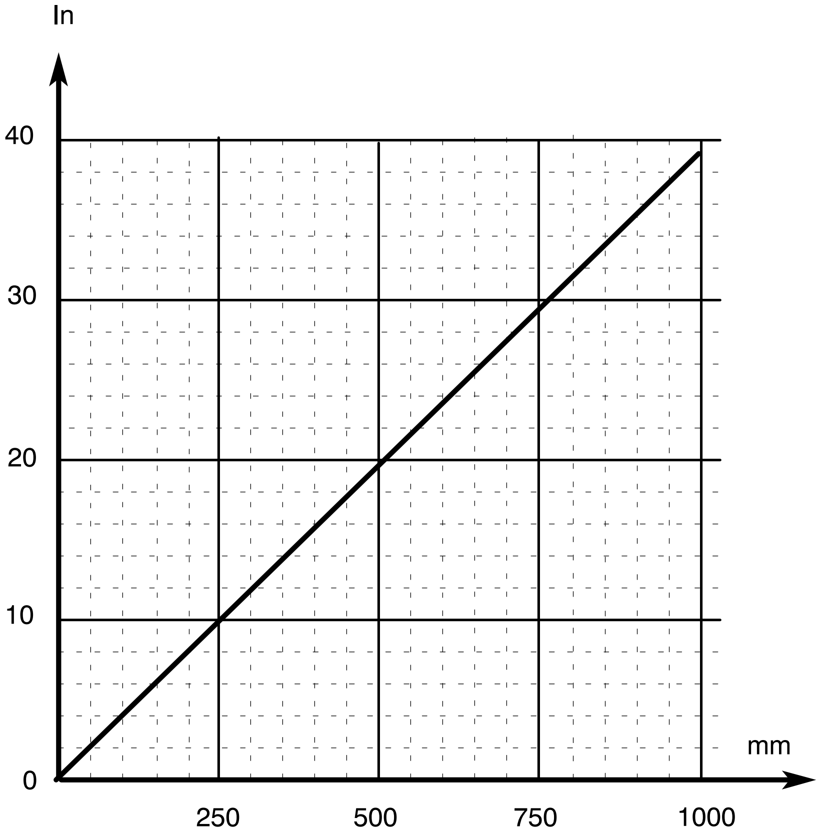

Figure 1.5.3 – INCHES VERSUS MILLIMETRES

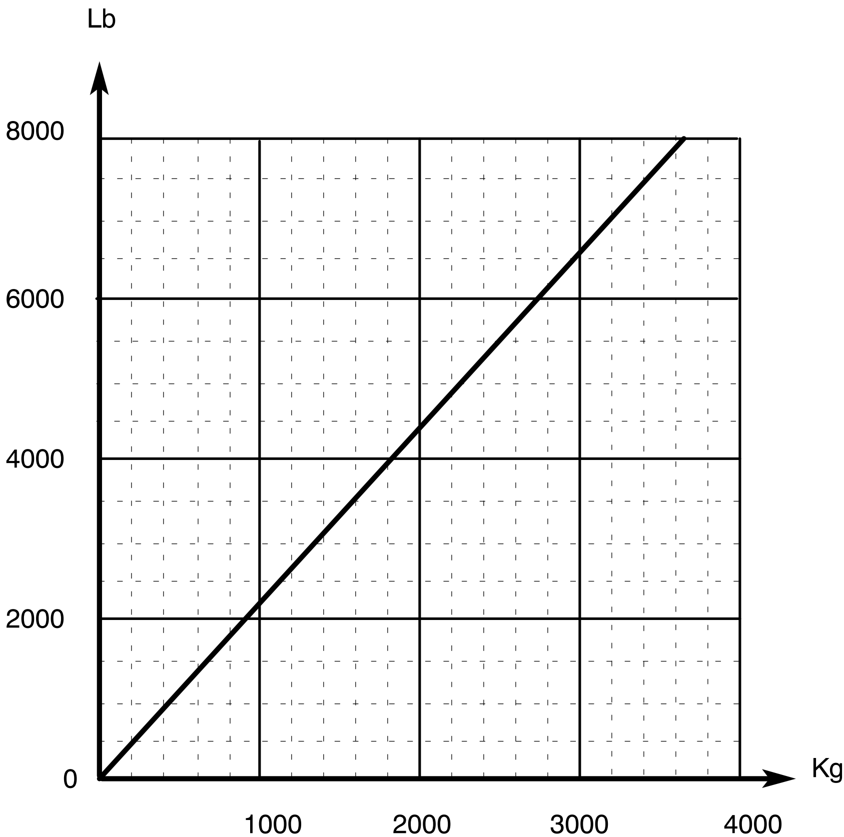

Figure 1.5.4 - POUNDS VERSUS KILOGRAMS

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
31000	287.4	- 46.4	- 51.6

Figure 1.6.1 - STANDARD ATMOSPHERE

PRESSURE CONVERSION TABLE

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

950 28.05	951 28.08	952 28.11	953 28.14	954 28.17	955 28.20	956 28.23	957 28.26	958 28.29	959 28.32
960 28.35	961 28.38	962 28.41	963 28.44	964 28.47	965 28.50	966 28.53	967 28.56	968 28.58	969 28.61
970 28.64	971 28.67	972 28.70	973 28.73	974 28.76	975 28.79	976 28.82	977 28.85	978 28.88	979 28.91
980 28.94	981 28.97	982 29.00	983 29.03	984 29.06	985 29.09	986 29.12	987 29.15	988 29.18	989 29.20
990 29.23	991 29.26	992 29.29	993 29.32	994 29.35	995 29.38	996 29.41	997 29.44	998 29.47	999 29.50
1000 29.53	1001 29.56	1002 29.59	1003 29.62	1004 29.65	1005 29.68	1006 29.71	1007 29.74	1008 29.77	1009 29.80
1010 29.83	1011 29.85	1012 29.88	1013 29.91	1014 29.94	1015 29.97	1016 30.00	1017 30.03	1018 30.06	1019 30.09
1020 30.12	1021 30.15	1022 30.18	1023 30.21	1024 30.24	1025 30.27	1026 30.30	1027 30.33	1028 30.36	1029 30.39
1030 30.42	1031 30.45	1032 30.47	1033 30.50	1034 30.53	1035 30.56	1036 30.59	1037 30.62	1038 30.65	1039 30.68
1040 30.71	1041 30.74	1042 30.77	1043 30.80	1044 30.83	1045 30.86	1046 30.89	1047 30.92	1048 30.95	1049 30.98

Figure 1.6.2 – PRESSURE CONVERSION TABLE

SECTION 2

LIMITATIONS

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SECTION 2

LIMITATIONS

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2.1 - GENERAL

"TBM 850" is the trade name of the TBM 700 "N version" airplane (TBM 700 type), which is certified in the Normal Category.

This airplane must be flown in compliance with the limits specified by placards or markings and with those given in this Section and throughout the Pilot's Operating Handbook.

The "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 850, No. 190-00708-04, or any later version as applicable, must be readily available to the pilot.

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 powerplant and installed equipment.

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

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

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

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2.2 - AIRSPEED LIMITATIONS

Airspeed limitations and their operational significance are shown in 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

2.3 - POWERPLANT LIMITATIONS

ENGINE

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 66D

Maximum power :

Flaps set to UP, TO or LDG position	Flaps set to 850 position
- 100 % at Np = 2000 RPM - 110 % at Np = 1800 RPM	- 121.4 % at Np = 2000 RPM

Ng limitation :

104.1 %

Np limitation :

2000 RPM

ITT limitations :

- Take off : 850°C
- Maximum climb/cruise : 840°C
- During start : $\leq$ 850°C (no duration limitation)
  $\leq$ 870°C for 20 seconds max.
  $\leq$ 1000°C for 5 seconds max.

CAUTION

WHEN NORMALLY OPERATING, REFER TO CHAPTER 5.8 "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 : 150.5 us gal (570 Litres) each
  Total fuel : 301 us gal (1140 Litres)
  Usable fuel : 292 us gal (1106 Litres)
  Unusable fuel : 9 us gal (34 Litres)
  Maximum fuel imbalance : 15 us gal (57 Litres)

NOTE :
Usable fuel can be safely used during all normal airplane maneuvers.

CAUTION

THE FUEL USED MUST CONTAIN AN ANTI-ICE ADDITIVE, IN ACCORDANCE WITH SPECIFICATION MIL-I-27686 OR MIL-I-85470. ADDITIVE CONCENTRATIONS (EGME OR DIEGME) SHALL BE COMPRISED BETWEEN A MINIMUM OF 0.06 % AND A MAXIMUM OF 0.15 % BY VOLUME. REFER TO SECTION 8 "HANDLING, SERVICING AND MAINTENANCE" FOR ADDITIONAL INFORMATION.

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°

2.4 - STARTER OPERATION LIMITS

Starter operation sequence is limited as follows :

if Ng ≤ 30 % . . . . 30 seconds

if Ng > 30 % . . . . 60 seconds

Should several sequences be necessary, respect following spacing :

1st sequence

wait . . . . 1 minute

2nd sequence

wait . . . . 5 minutes

3rd sequence

wait . . . . 30 minutes

4th sequence

2.5 - WEIGHT AND C.G. LIMITS

WEIGHT LIMITS

Maximum ramp weight (MRW) : 7430 lbs (3370 kg)
Maximum takeoff weight (MTOW) : 7394 lbs (3354 kg)
Maximum landing weight (MLW) : 7024 lbs (3186 kg)
Maximum zero fuel weight (MZFW) : 6032 lbs (2736 kg)
Maximum baggage weight :
- in FWD compartment (non pressurized) : 110 lbs (50 kg)
- in rear part of pressurized cabin : 220 lbs (100kg)

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)
185.3 inches (4.707 m) aft of datum at 6579 lbs (2984 kg) (20.85 % of m.a.c)
187 inches (4.752 m) aft of datum at all weights above 7024 lbs (3186 kg) (23.8 % 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.)
193.65 inches (4.921 m) aft of datum at 7394 lbs (3354 kg) (35 % 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.

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 31000 ft pressure altitude
Linear decrease between 8000 and 31000 ft

FLIGHT LOAD FACTOR LIMITS

Flaps up

Weight below 6579 lbs (2984 kg) :

$- 1.5 \leq n \leq + 3.8$ g

Weight above 6579 lbs (2984 kg) :

$- 1.5 \leq n \leq + 3.5$ g

Flaps down

$- 0 \leq n \leq + 2.0$ 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>Support>Contact Garmin Support>Aviation. Pilots and operators can view navigation data base alerts at 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, 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.

The use of flap control in "850" position is prohibited for takeoff and landing.

REVERSE UTILIZATION

The use of control reverse BETA (β) 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
- 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 : 31000 ft (9449 m)
Maximum differential pressure : 6.2 psi

Operation in RVSM area

This airplane is approved for operations in Reduced Vertical Separation Minimum (RVSM) airspace when required equipment (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.

2.6 - 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 31000 ft pressure altitude
Linear decrease between 8000 and 31000 ft

FLIGHT LOAD FACTOR LIMITS

Flaps up

Weight below 6579 lbs (2984 kg) :

$- 1.5 \leq n \leq + 3.8$ g

Weight above 6579 lbs (2984 kg) :

$- 1.5 \leq n \leq + 3.5$ g

Flaps down

$- 0 \leq n \leq + 2.0$ 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.

GPS NAVIGATION LIMITS

Data base updating must be verified before each flight.

The navigation sources required for the anticipated flight shall be serviceable and allow an immediate crossed check on available ground aids or shall allow to return to primary navigation sources in case of GPS navigation loss.

Use of GPS as a navigation source is **PROHIBITED**, unless the pilot verifies the currency of the data base and the coordinates of each selected waypoint.

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.

The two GARMIN G1000 GPS receivers installed on the aircraft are approved under TSO C145a Class 3. The GARMIN G1000 system has been demonstrated capable of, and has been shown to meet the accuracy requirements for Enroute, Terminal, non-precision instrument approach operations using GPS and WAAS (including "GPS" or "GPS and RNAV approaches"), and approach procedures with vertical guidance (including "LNAV/VNAV", "LNAV+V", and "LPV") within the U.S. National Airspace System in accordance with AC 20-138A.

Procedures during flight preparation

During flight preparation, the pilot must get information about GPS constellation, via aeronautical data (consultation of GPS NOTAM).

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.

RAIM function prediction can be done using prediction software integrated into G1000 system or any other approved software such as the one provided for the users by EUROCONTROL on INTERNET.

If a loss of RAIM function is predicted on the chosen route for a period of more than 5 minutes, the flight cannot be done. In that case, the flight will either be postponed or another route will be chosen. The prediction software must then be used again.

Preflight procedures

During preflight checks, it is necessary to verify data base validity (updating of the last AIRAC cycle).

The onboard equipment must be initialized in compliance with manufacturer procedures (refer to the "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide).

In case a pre-programmed or an already stored flight plan is used, an accurate check of the waypoints is also required.

General in-flight procedures

Before entering a B-RNAV or P-RNAV area, the pilot must make sure that RAIM function is available.

Flight plan activation, WPT and LEG changes as well as any modification of initialization data must be done in compliance with equipment User's Manual.

For every navigation into areas reserved for B-RNAV or P-RNAV, the pilot must be provided with a predicted availability of RAIM on the route, if the constellation disposes of less than 23 satellites.

The check of navigation system information consistency must be regularly performed during the flight :

- when reaching each waypoint or before reaching the position report point of the ATC,
- before leaving a published route and then every 15 minutes during this type of operation (function "Direct To").

The check of position information consistency may be performed by comparing this position with the one determined by the primary radionavigation sources.

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 ”Equipement 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.

The use of flap control in "850" position is prohibited for takeoff and landing.

REVERSE UTILIZATION

The use of control reverse BETA (β) 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

8) Pilot instruments

- Airspeed indicator
- Sensitive and adjustable altimeter
- Magnetic compass with built-in compensator

9) 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
- Battery stop
- Main generator OFF
- Low voltage
- Ground power unit connected
- Inertial separator
- Starter
- Ignition
- Flaps
- Landing gears and doors

10) Aural warning

- V_{MO} warning
- Landing gear warning
- Stall warning

11) Engine instruments

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

12) Various indicators

- Fuel gauge indicators (2)
- Fuel pressure indicator
- Voltmeter
- Ammeter
- Outside air temperature

13) 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

14) 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 : 31000 ft (9449 m)
Maximum differential pressure : 6.2 psi

Operation in RVSM area

This airplane is approved for operations in Reduced Vertical Separation Minimum (RVSM) airspace when required equipment (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.

- 2 front seats at 178.5 in. (4.534 m)
- 2 intermediate seats at 222.7 in. (5.656 m)
- Rear bench (2 seats) at 267.1 in. (6.785 m)

BAGGAGE LIMITS

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

MINIMUM CREW

- One pilot

MAXIMUM OCCUPANCY

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

USE OF DOORS

Flight with door open or ajar is prohibited.

2.8 - MARKINGS

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 65	/
White line	65 - 122	Full Flap Operating Range Lower limit is maximum weight V_{SO} in landing configuration.
Red sector	Above 266	266 = VMO

Figure 2.8.1 - AIRSPEED INDICATOR MARKINGS

PRESSURIZATION

MARKING	VALUE	SIGNIFICANCE
Red line	6.2 psi	Cabin ΔP limit

Figure 2.8.2 - PRESSURIZATION MARKING

ENGINE INSTRUMENTS

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

INDICATION	Red Line or Arc --------- Minimum Limit	Yellow Line or Arc --------- Caution Range	Green Line or Arc --------- Normal Operating	Red Line --------- Maximum Limit
Oil temperature	– 40 °C (– 40 °F)	– 40 to 0 °C (– 40 to 32 °F) 104 to 110 °C (219.2 to 230 °F)	0 to 104 °C (32 to 219.2 °F)	110 °C (230 °F)
Oil pressure	60 psi	60 to 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 Engine start or off	---	840 to 1090 °C (1544 to 1994 °F)	400 to 840 °C (752 to 1544 °F)	840 °C (1544 °F) normal limit --------------- 870 °C (1598 °F) (< 20 seconds limit) --------------- 1090 °C (1994 °F) (red line) absolute limit
Engine running		---	400 to 840 °C (752 to 1544 °F)	840 °C (1544 °F) normal limit
Torque (TRQ)	---	121.4 %	0 to 121.4 %	121.4 %

Figure 2.8.3 – ENGINE INSTRUMENT MARKINGS

SUCTION GAGE

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 2.8.4 – SUCTION GAGE MARKINGS

2.9 - PLACARDS

(1) Under L.H. front side window

FLIGHT CONDITIONS :
DAY AND NIGHT VFR AND IFR

TBM 850
THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE
IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM
OF PLACARDS, MARKINGS AND PILOT OPERATING HANDBOOK

ICING CONDITIONS ALLOWED

INVERTED FLIGHT ____ PROHIBITED
ACROBATIC MANEUVERS ____ PROHIBITED
INTENTIONAL SPINS ____ PROHIBITED
MAXIMUM TAKEOFF WEIGHT ____ 3354 kg / 7394 lbs
MAXIMUM LANDING WEIGHT ____ 3186 kg / 7024 lbs
DESIGN LOAD FACTOR (MAXIMUM)
FLAPS UP WEIGHT BELOW 2984 kg / 6579 lbs ____ $-1.5 \leq n \leq +3.8$ g
ABOVE 2984 kg / 6579 lbs ____ $-1.5 \leq n \leq +3.5$ g
FLAPS DOWN ____ $0 \leq n \leq +2$ g

MANEUVERING SPEED V_A ____ 158 KIAS
MAXIMUM OPERATING SPEED V_{MO} ____ 266 KIAS
FLAPS EXTENDED MAXIMUM SPEED V_{FE}
TAKEOFF CONFIGURATION ____ 178 KIAS
LANDING CONFIGURATION ____ 122 KIAS
LANDING GEAR EXTENDED MAXIMUM SPEED V_{LE} ____ 178 KIAS
LANDING GEAR OPERATING MAXIMUM SPEED V_{LO}
UP ____ 128 KIAS
DOWN ____ 178 KIAS

I4113004AAAKMA18100

(2) Calibration chart on compass and on windshield post

WARNING
TURN 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 pressurized baggage compartment partition wall

100 kg - 220 lbs MAXIMUM

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

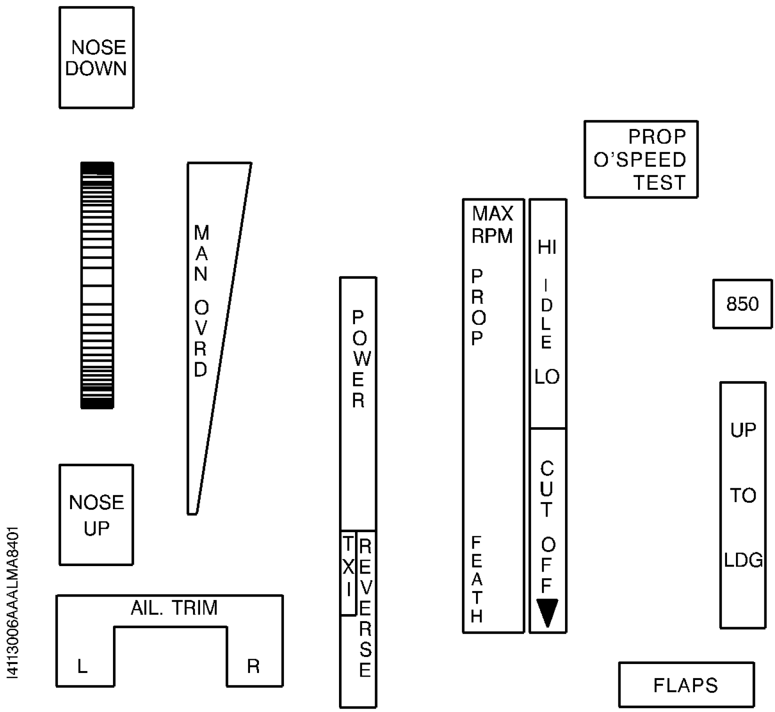
FOR LOADING INSTRUCTIONS SEE "WEIGHT AND BALANCE DATA" IN PILOT'S OPERATING HANDBOOK

(3)a On FWD baggage compartment door frame (non pressurized)

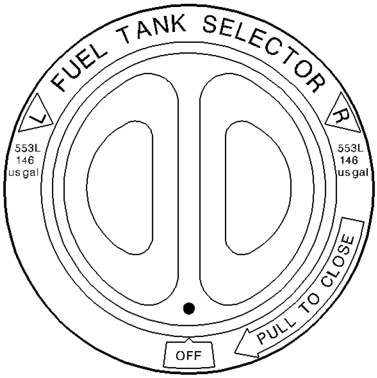
50 kg – 110 lbs MAXIMUM

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

(4) Under GCU 475 control unit on pedestal console

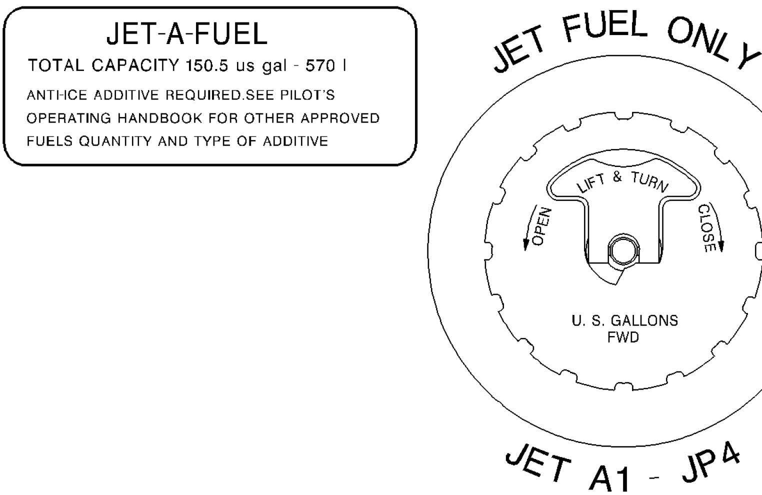


(5) On fuel selector



I4113006AAALMA8300

(6) Near fuel tank caps



I4112004AAAMA8200

(7) On internal face of L.H. engine cowling

Oil system capacity
12 l
12.7 qt

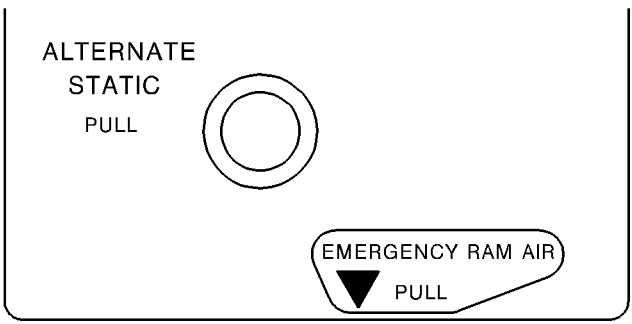
(8) On landing gear emergency control access door

LDG GEAR
EMERGENCY
ACCESS PULL

(9) On rear passenger's table casing

TABLE MUST BE STOWED DURING TAKEOFF AND LANDING

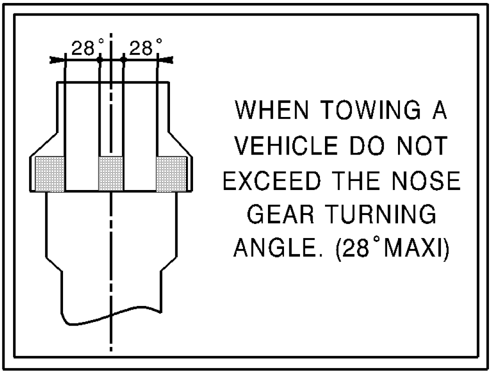
(10) Under R.H. control wheel



I4113006AAAKMA8000

(11) On nose gear door

I4112001AAACMA8000



(12) On nose gear leg

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

(13) On main gear leg

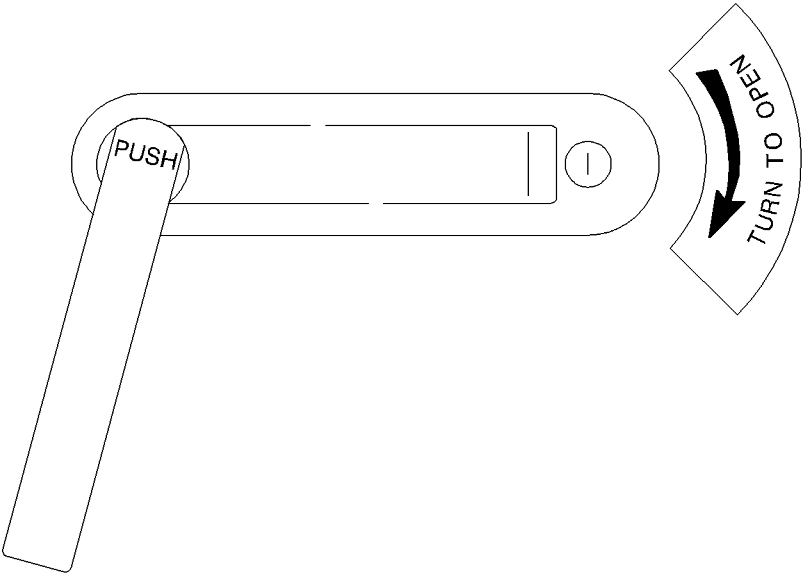
MAIN LANDING GEAR
TIRE PRESSURE : 8,96 bar
130 psi

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

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

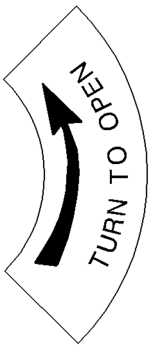
(15) On "pilot" door - External side (if installed)

I4112002AAAEMA8100

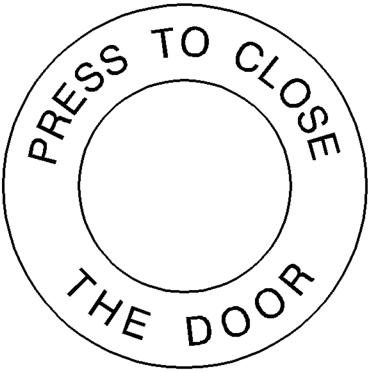


(16) On access door - External side

I4112002AAAEMA8000



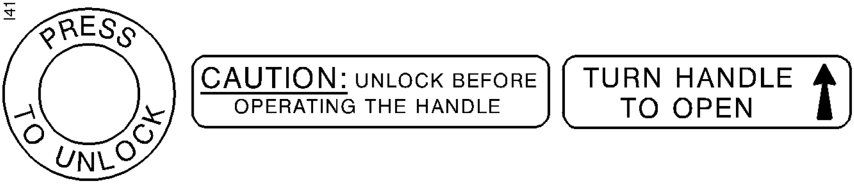
(17) On outer fuselage skin aft of access door and in the cabin forward of access door



I4112002AAADMA8000

(18) On access door - Internal side

I4112002AAADMA8201

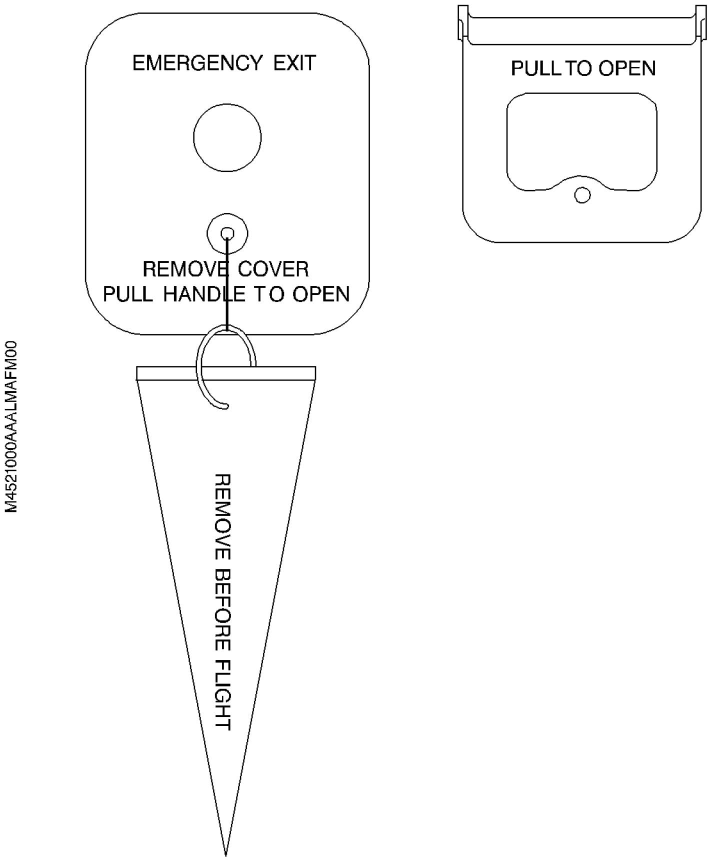


(19) On "pilot" door - Internal side (if installed)

(20) On emergency exit handle

Marking on cover

Marking on handle



(21) On last step of stairs

STAIRS MAX LOAD : ONE PERSON

(22) On R.H. access door jamb

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

(23) On R.H. side at front seat level and on the first rear passengers masks container (R.H. side on the ceiling)

WARNING
GREASY SUBSTANCES ARE CAPABLE
OF SPONTANEOUS COMBUSTION
ON CONTACT WITH OXYGEN
DO NOT SMOKE WHILE OXYGEN IS IN USE

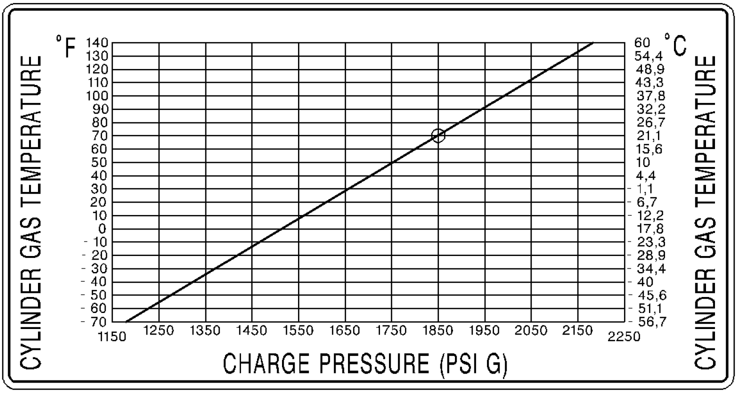
I4113400AAAABMA8000

(24) On rear passengers masks containers

OXYGEN MASKS INSIDE
PULL MASKS FOR
OXYGEN SUPPLY

I4113400AAABMA8101

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



I4112400AAAAMA8000

(26) On the oxygen service door

I4112400AAAAMA8100

(27) On emergency locator transmitter inspection door

I4112200AAAAMA8000

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

CURTAIN MUST BE STOWED FOR TAKE-OFF AND LANDING

SECTION 3

EMERGENCY PROCEDURES

TABLE OF CONTENTS

NOTE :
Sub-title for each Section 3 chapter is given at the back of their respective divider hereafter.

SECTION 3.1

GENERAL

TABLE OF CONTENTS

Page

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 **MASTER WARNING**

or

- a fixed amber indicator **MASTER CAUTION**

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.

SECTION 3.2

REJECTED TAKEOFF PROCEDURE

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Page

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 . . . . **PUSH DOWN**

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

SECTION 3.3

ENGINE FAILURES

TABLE OF CONTENTS

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 . . . . **PUSH DOWN**

3.3 - ENGINE FAILURES

ENGINE FAILURE AFTER ROTATION (1/2)

- ***If altitude does not allow to choose a favourable runway or field : Land straight ahead keeping flaps at TO and without changing landing gear position.***

Before touch-down :

1 - Maintain :

Weight < 6579 lbs (2984 kg)	Weight ≥ 6579 lbs (2984 kg)
IAS > 80 KIAS	**IAS > 85 KIAS**

2 - Power lever . . . . **IDLE**

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

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

5 - CRASH lever . . . . **PUSH DOWN**

- ***If altitude allows to reach a favourable runway or ground :***

1 - LDG . . . . **DOWN**

2 - Flaps . . . . **AS REQUIRED**

3 - Maintain :

Weight < 6579 lbs (2984 kg)	Weight ≥ 6579 lbs (2984 kg)
IAS > 100 KIAS, Flaps UP	**IAS > 105 KIAS, Flaps UP**
IAS > 90 KIAS, Flaps TO	**IAS > 95 KIAS, Flaps TO**

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

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

3.3 - ENGINE FAILURES

ENGINE FAILURE AFTER ROTATION (2/2)

Before touch-down :

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

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

8 - CRASH lever . . . . **PUSH 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 (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 WARNING 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 looses 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 - Tank selector . . . . **SWITCH TANKS**

4 - Check that no parameter exceeds allowed values

5 - "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 OVERSHOOTING. 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

6 - Continue flight, SHORTEN if possible

⬇

3.3 - ENGINE FAILURES

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

7 - Perform a normal landing WITHOUT REVERSE

8 - 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 > 840°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 Np < 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 Np ≤ 2000 RPM. The propeller reducer is designed for a max. Np 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 engine reduction gearbox

The airplane repair is mandatory before any other flight.

3.3 - ENGINE FAILURES

RED WARNING 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 > 840˚C for more than 20 seconds

If the limits previously mentioned are exceeded :

1 - Stop the starting procedure.

2 - Record the engine parameters displayed in case of overtemperature, as well as OAT conditions.

3 - Cancel the flight, inform maintenance department.

B - After engine start :

Indicates that ITT has been higher than 840˚C more than 2 seconds :

1 - Reduce power according to "Engine Operation" tables - Chapter 5.8

If ITT remains higher than 840°C :

1 - Reduce power to maintain ITT < 840°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

RED WARNING CAS MESSAGE “TORQUE” ON

Indicates that the torque is above 124.5 %.

1 - Reduce power according to ”Engine Operation” tables - Chapter 5.8.

2 - Shorten the flight.

3 - Record the airplane and engine parameters read in case of overtorque.

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 . . . . **PUSH DOWN**

10 - Inform the maintenance department

SECTION 3.4

AIR START

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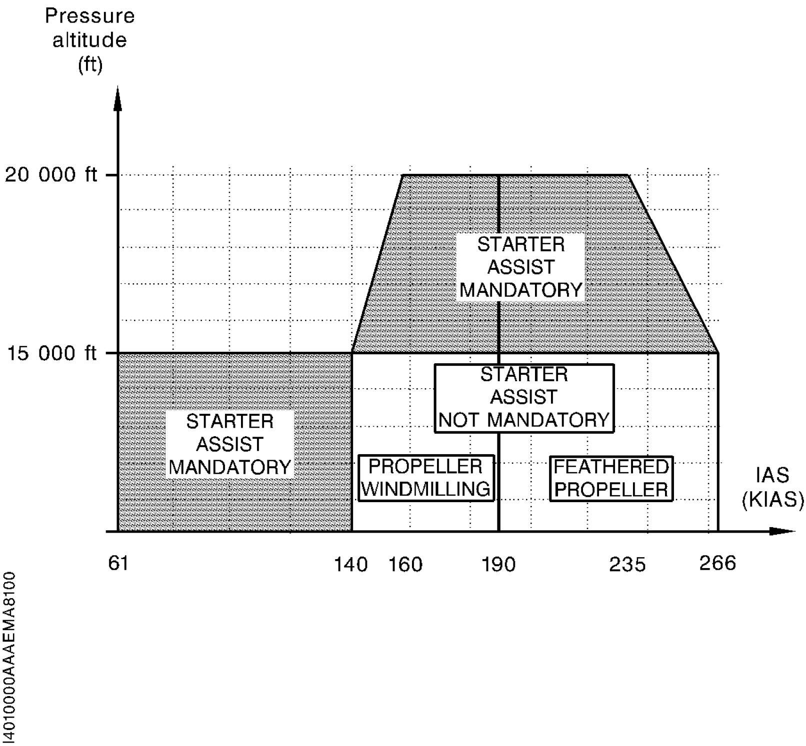
3.4 - AIR START

AIR START ENVELOPE



Air start may be attempted at all speeds and all altitudes. 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" switch . . . . **OFF**

CAUTION

"BLEED" SWITCH SET TO "AUTO" MAY CAUSE OVERTEMPERATURE OR ABNORMAL ACCELERATION

2 - "AIR COND" switch . . . . **OFF**

3 - Air start envelope . . . . **CHECKED**

4 - Electric consumption . . . . **REDUCE**

5 - Power lever . . . . **IDLE**

6 - Propeller governor lever . . . . **FEATHER**

7 - Condition lever . . . . **CUT OFF**

8 - Tank selector . . . . **CHECK**

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

3.4 - AIR START

AIR START WITH STARTER (2/2)

10 - "IGNITION" switch .... **AUTO or ON**

11 - "STARTER" switch .... **ON**

12 - Condition lever .... **LO / IDLE when Ng ∼ 13 %**

13 - ITT and Ng .... **MONITOR**

14 - When Ng ∼ 50 % steady .... **STARTER OFF IGNITION AUTO or ON**

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

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

17 - Power lever .... **AS REQUIRED**

18 - Electrical equipment .... **AS REQUIRED**

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

20 - "BLEED" switch .... **AS REQUIRED**

3.4 - AIR START

AIR START WITHOUT STARTER (STARTER ASSIST NOT MANDATORY) (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" switch . . . . **OFF**

CAUTION

"BLEED" SWITCH SET TO "AUTO" MAY CAUSE OVERTEMPERATURE OR ABNORMAL ACCELERATION

2 - "AIR COND" switch . . . . **OFF**

3 - Air start envelope . . . . **CHECKED**
Speed with propeller windmilling . . . . **140 < IAS< 190 KIAS**
with feathered propeller . . . . **IAS > 190 KIAS**

4 - Electrical consumption . . . . **REDUCE**

5 - Power lever . . . . **IDLE**

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

7 - Tank selector . . . . **CHECK**

3.4 – AIR START

AIR START WITHOUT STARTER (STARTER ASSIST NOT MANDATORY) (2/2)

8 – "AUX BP" fuel switch . . . . **ON**

9 – "IGNITION" switch . . . . **ON**

10 – Condition lever . . . . **LO / IDLE**

11 – ITT and Ng . . . . **MONITOR**

12 – When Ng ~ 50 % steady . . . . **IGNITION AUTO or ON**

13 – Condition lever . . . . **HI / IDLE**

14 – Propeller governor lever . . . . **MAX. RPM**

15 – Power lever . . . . **AS REQUIRED**

16 – Electrical equipment . . . . **AS REQUIRED**

17 – "AUX BP" fuel selector . . . . **AUTO**

18 – "BLEED" switch . . . . **AS REQUIRED**

SECTION 3.5

FIRE AND SMOKE

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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" switch .... **OFF**
4 - "AIR COND" switch .... **OFF**
5 - Brakes .... **AS REQUIRED**
6 - Tank selector .... **OFF**
7 - Warn for ground assistance, if necessary
8 - CRASH lever .... **PUSH 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 for ground assistance, if necessary
5 - CRASH lever .... **PUSH DOWN**
6 - Cabin extinguisher .... **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" switch . . . . **OFF**

7 - "AIR COND" switch . . . . **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 .... **USE AS REQUIRED (pilot and passengers)**

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

Descend quickly below 12000 ft

3 – Using the on board extinguisher, 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 .... **USE AS REQUIRED (pilot and passengers)**

2 – "AIR COND" switch .... **OFF**

3 – Not necessary 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**

8 – All 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 necessary 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 . . . . **USE AS REQUIRED (pilot and passengers)**

3 – If smoke persists, undertake an EMERGENCY DESCENT (Refer to Chapter 3.6)

4 – ”BLEED” switch . . . . **OFF**

5 – “AIR COND” switch . . . . **OFF**

6 – ”DUMP” switch . . . . **ACTUATE**

Wait until the differential pressure drops

7 – ”RAM AIR” control knob . . . . **PULL**
If smoke increases . . . . **PUSH**

8 – LAND as soon as possible

SECTION 3.6

EMERGENCY DESCENTS

TABLE OF CONTENTS

3.6 - EMERGENCY DESCENTS

Two types of descent are considered :

1 - Engine running, maximum descent rate, if necessary

The factors to be considered are :

- Cabin altitude and oxygen duration
- Electrical power endurance
- Distance to appropriate landing area
- Flight conditions IMC, VMC, ICING
- Minimum safe altitude
- Fuel reserves

2 - Engine failure, aircraft flown for maximum range

The pilot is in charge of evaluating the situation and priorities.

Refer to Figure 3.6.1 “EMERGENCY DESCENT PROFILES”.

3.6 - EMERGENCY DESCENTS

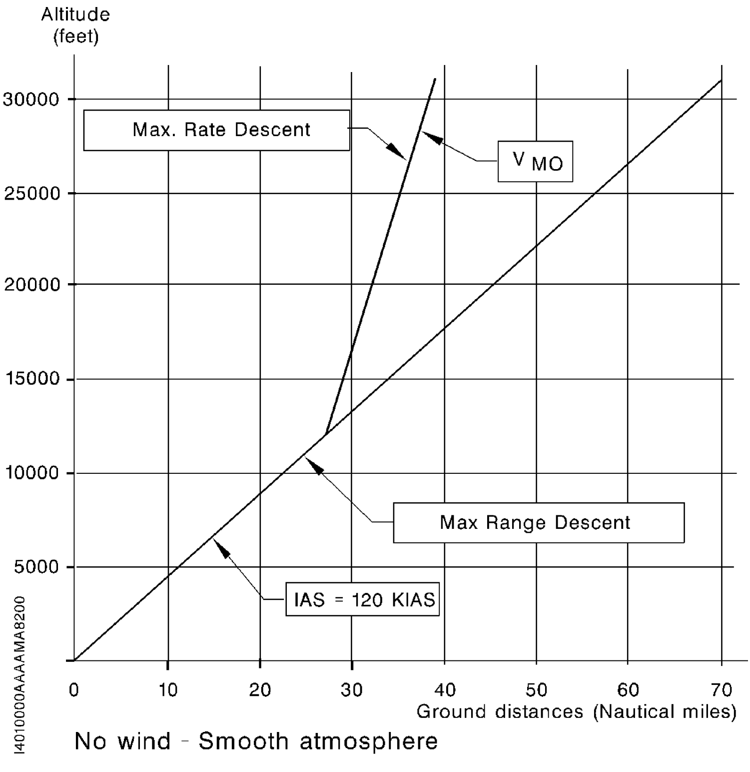

Figure 3.6.1 - EMERGENCY DESCENT PROFILES

3.6 - EMERGENCY DESCENTS

MAXIMUM RATE DESCENT

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

2 - Oxygen .... **If necessary**

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

Procedure in smooth air :

4 - Flaps .... **UP**

5 - Landing gear .... **UP**

6 - Speed .... **V_{MO} = 266 KIAS**

Procedure in rough air or in case of structure problem :

7 - Reduce speed .... **IAS ≤ 178 KIAS**

8 - Landing gear .... **DN**

9 - Flaps .... **UP**

10 - Keep .... **IAS ≤ 178 KIAS**

3.6 - EMERGENCY DESCENTS

MAXIMUM RANGE DESCENT (1/2)

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

2 - Propeller governor lever .... **FEATHER**

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

4 - Flaps .... **UP**

5 - Landing gear .... **UP**

6 - Speed .... **IAS = 120 KIAS**

7 - Oxygen .... **If necessary**

Check oxygen duration before reaching 12000 ft and check flow to passengers

8 - "DUMP" switch .... **ACTUATED**

9 - "RAM AIR" control knob .... **PULLED**

If conditions allow : VMC and non icing conditions :

10 - "ESS BUS TIE" reverse switch .... **Cover up**
EMER position

11 - Prepare a forced landing .... **Refer to Chapter 3.7**

If flight conditions do not allow :

12 - "ESS BUS TIE" reverse switch .... **NORMAL**

13 - Manually disconnect ancillary systems as follows :

- "AIRFRAME DE ICE" switch .... **OFF**
- "ICE LIGHT" switch .... **OFF**
- "PROP DE ICE" switch .... **OFF**
- "WINDSHIELD" switch .... **OFF**

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3.6 - EMERGENCY DESCENTS

MAXIMUM RANGE DESCENT (2/2)

- "PITOT R & 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**
- "CD" player .... **OFF**
- "INSTR / CABIN / ACCESS" controls .... **OFF**
- XPDR 2 breaker .... **PULL**

If icing conditions :

- "PITOT L 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 - Prepare a forced landing .... **Refer to Chapter 3.7**

SECTION 3.7

EMERGENCY LANDINGS

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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" switch . . . . **OFF**

7 – "AIR COND" switch . . . . **OFF**

8 – "DUMP" switch . . . . **ACTUATED**

9 – Glide speed . . . . **120 KIAS maintained until favourable ground approach**

If ground allows it :

10 – "ESS BUS TIE" reverse switch . . . . **NORMAL** **in order to have GEAR and FLAPS available**

11 – Landing gear . . . . **DN**

If night conditions :

12 – L.LDG / R.LDG . . . . **ON**

If ground does not allow it :

13 – Keep landing gear . . . . **UP**

14 – When chosen ground is assured . . . . **FLAPS LDG**

15 – CRASH lever . . . . **PUSH DOWN**

16 – Final approach : Weight < 6250 lbs (2835 kg) : **IAS = 110 KIAS**
Weight $\geq$ 6250 lbs (2835 kg) : **IAS = 115 KIAS**

17 – Land flaring out

18 – 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" switch . . . . **OFF**

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

4 - Maintain tank selector on defective landing gear side to lighten corresponding wing [maximum fuel imbalance 15 us gal (57 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

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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 . . . . **PUSH 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**

Weight < 6250 lbs (2835 kg)	Weight ≥ 6250 lbs (2835 kg)
IAS = 90 KIAS	**IAS = 95 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 . . . . **PUSH DOWN**

9 - EVACUATE after airplane comes to a stop

3.7 - EMERGENCY LANDINGS

LANDING WITH GEAR UP

1 - Final approach .... **Standard**

2 - Flaps .... **LDG**

Weight < 6250 lbs (2835 kg)	Weight ≥ 6250 lbs (2835 kg)
IAS = 80 KIAS	**IAS = 85 KIAS**

3 - "BLEED" switch .... **OFF**

4 - "DUMP" switch .... **ACTUATED**

When runway is assured :

5 - Power lever .... **IDLE**

6 - Propeller governor lever .... **FEATHER**

7 - Condition lever .... **CUT OFF**

8 - Tank selector .... **OFF**

9 - Flare out

10 - After touch-down, CRASH lever .... **PUSH DOWN**

11 - 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 :

Proceed as for a normal landing, maintaining approach airspeed :

Weight < 6250 lbs (2835 kg)	Weight ≥ 6250 lbs (2835 kg)
IAS = 100 KIAS	**IAS = 105 KIAS**

Provide for a landing distance increased up to about 60 %

For flaps deflections greater than "TO" position :

Proceed as for a normal landing, maintaining approach airspeed :

Weight < 6250 lbs (2835 kg)	Weight ≥ 6250 lbs (2835 kg)
IAS = 95 KIAS	**IAS = 100 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 :

Weight < 6579 lbs (2984 kg)	Weight ≥ 6579 lbs (2984 kg)
IAS = 80 KIAS	**IAS = 85 KIAS**

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

6 - "DUMP" switch . . . . **ACTUATED**

7 - CRASH lever . . . . **PUSH DOWN**

8 - Maintain attitude without rounding off until touch-down

9 - EVACUATE through EMERGENCY EXIT

SECTION 3.8

FUEL SYSTEM

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3.8 - FUEL SYSTEM

RED WARNING 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 .... **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 occured 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 18000 ft.

12 - Land as soon as possible.

3.8 - FUEL SYSTEM

AMBER WARNING 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"** *warning CAS message goes out, continue flight normally*

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

3 - ”AUX BP” fuel switch .... **ON**

4 - Shorten flight

3.8 - FUEL SYSTEM

AMBER WARNING 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 WARNING 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 IMBALANCE IS 15 USG

SECTION 3.9

ELECTRICAL SYSTEM

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3.9 - ELECTRICAL SYSTEM

AMBER WARNING CAS MESSAGE "BAT OFF" ON

Indicates that :

- the "SOURCE" selector has been positioned on OFF or GPU or
- the battery plug is disconnected

1 - If necessary . . . . **CORRECT**

2 - If warning persists . . . . **SHORTEN FLIGHT**

3 - Monitor airplane mains voltage

3.9 - ELECTRICAL SYSTEM

AMBER WARNING 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 :

- "AIR COND" switch . . . . **OFF**
- "STROBE" switch . . . . **OFF**
- "CABIN" lights switch . . . . **OFF**
- "AP TRIMS" MASTER switch . . . . **AP OFF**
- Not necessary equipment . . . . **OFF**
- "WINDSHIELD" switch
  (above 15 000 ft) . . . . **OFF**
- "BLEED" 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 WARNING CAS MESSAGE "LOW VOLTAGE" ON normal functioning on "MAIN GEN"

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

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

In that case :

3 - Disconnect following ancillary electrical systems :

- "AIR COND" switch . . . . **OFF**
- "STROBE" switch . . . . **OFF**
- "CABIN" lights switch . . . . **OFF**
- "AP TRIMS" MASTER switch . . . . **AP OFF**
- Not necessary equipment . . . . **OFF**
- "WINDSHIELD" switch
  (above 15 000 ft) . . . . **OFF**
- "BLEED" 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 WARNING CAS MESSAGE "LOW VOLTAGE" ON functioning on "ST-BY GENERATOR" (after "MAIN GEN" failure) (1/3)

Amber warning 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**

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3.9 - ELECTRICAL SYSTEM

AMBER WARNING 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 R & 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**

3.9 - ELECTRICAL SYSTEM

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

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

If icing conditions :

- "PITOT L 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

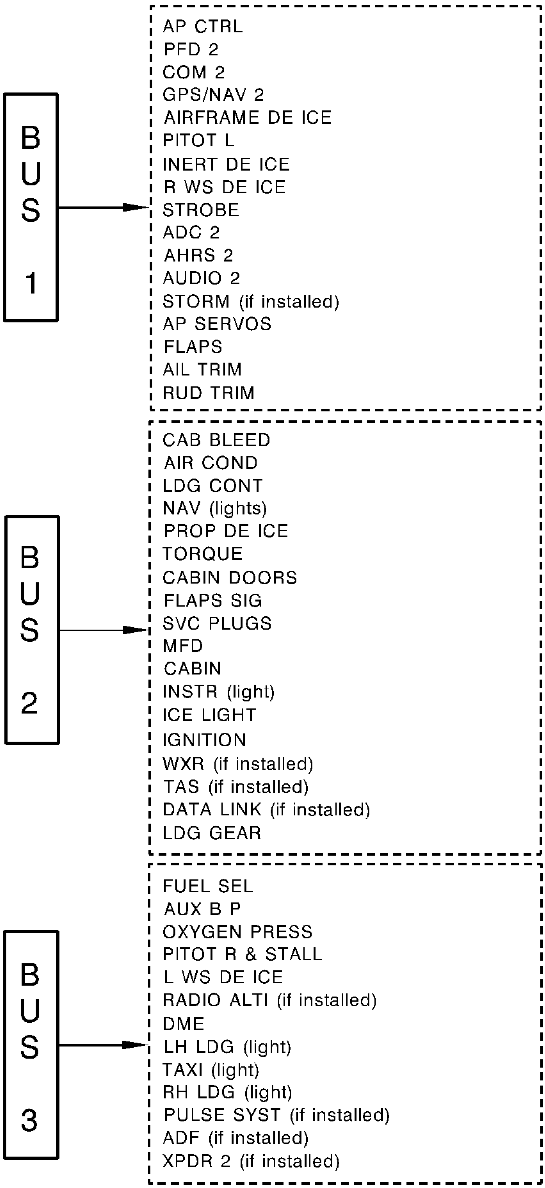

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Figure 3.9.1 (1/2) - ELECTRICAL DISTRIBUTION OF BUS BARS

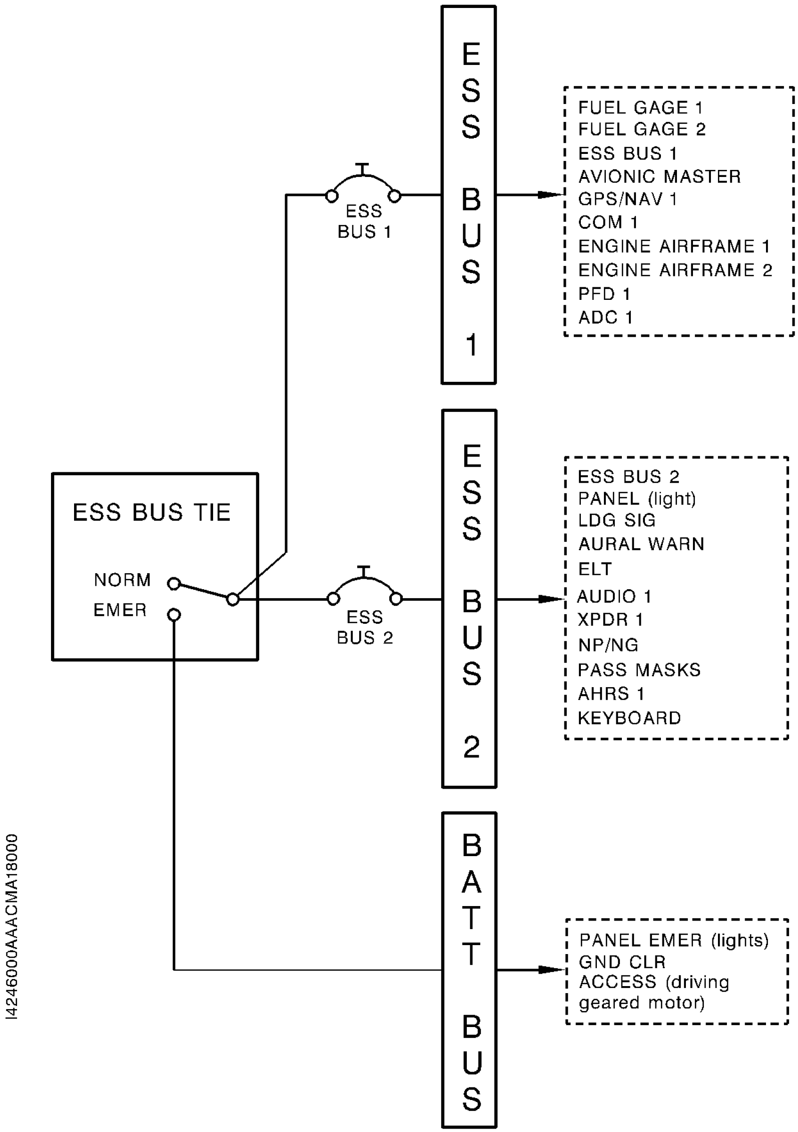

Figure 3.9.1 (2/2) - ELECTRICAL DISTRIBUTION OF BUS BARS

3.9 - ELECTRICAL SYSTEM

"AVIONICS" MASTER SWITCH FAILURE

In case of "AVIONICS" MASTER switch misfunction, 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.

SECTION 3.10

PRESSURIZATION AND AIR CONDITIONING

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3.10 - PRESSURIZATION AND AIR CONDITIONING

RED WARNING CAS MESSAGE "CABIN DIFF PRESS" ON

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

If ΔP > 6.2 psi :

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

3 - EMERGENCY DESCENT (Refer to Chapter 3.6)

RED WARNING CAS MESSAGE "CABIN ALTITUDE" ON

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

If cabin altitude > 10000 ft :

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

3 - "BLEED" switch . . . . **CHECK AUTO**

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" switch .... **OFF**

3 – "RAM AIR" control knob .... **PULLED if necessary**

4 – Wait for complete cabin depressurization before opening the door

3.10 - PRESSURIZATION AND AIR CONDITIONING

AMBER WARNING CAS MESSAGE "BLEED OFF" ON

Indicates the pressurization system is not running possibly due to :

- failure or
- "BLEED" switch on "OFF" position

1 - If necessary . . . . **CORRECT**

2 - If possible, reduce power

3 - "BLEED" switch . . . . **OFF**

4 - "BLEED" switch . . . . **AUTO**

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 WARNING CAS MESSAGE "BLEED TEMP" ON

Indicates overheat of bleed air system. Normally this leads to BLEED cutoff and to **"BLEED OFF"** amber warning CAS message appearance.

Should automatic cutoff occur or not :

1 - If possible, reduce power

2 - "AIR FLOW" distributor . . . . **CABIN**

3 - "CABIN CTRL" selector . . . . **OVERRIDE**

4 - "CABIN TEMP/°C" selector . . . . **MINI**

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

6 - As soon as warning **"BLEED TEMP"** OFF,
"BLEED" switch . . . . **AUTO**

If **"BLEED TEMP"** and **"BLEED OFF"** warnings still ON :

7 - If necessary EMERGENCY DESCENT - refer to Chapter 3.6 or continue flight at an altitude < 12000 ft

8 - Continue flight

3.10 - PRESSURIZATION AND AIR CONDITIONING

RED WARNING CAS MESSAGE “DOOR” ON

Indicates that one of the door latches of the access door or (if installed) of the ”pilot” door is not correctly locked

On ground :

- Check the correct locking, as well as the latches position of the access door and (if installed) of the pilot door
- Do not take off if warning CAS message “DOOR” is ON

In flight :

1 - Start a slow descent

2 - Decrease cabin pressure differential by selecting a higher cabin altitude and maximum cabin rate

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

3 - ”BLEED” switch . . . . **OFF**

4 - ”DUMP” switch . . . . **ACTUATED**

5 - If necessary, undertake ”IN ROUGH ATMOSPHERE” EMERGENCY DESCENT type (Refer to Chapter 3.6)

3.10 - PRESSURIZATION AND AIR CONDITIONING

AMBER WARNING CAS MESSAGE "VACUUM LOW" ON

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

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

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

"BLEED" switch . . . . **OFF**

3.10 - PRESSURIZATION AND AIR CONDITIONING

DEFOG MALFUNCTION

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

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

If moisture continues :

2 - "AIR FLOW" distributor .... **HOT**

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

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

4 - Altitude .... **$\leq$12000 ft**

5 - "BLEED" 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.

SECTION 3.11

LANDING GEAR AND FLAPS

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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 GEAR" 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 GEAR" 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 doubt about the gear extension.

Maintain IAS ≤ 128 KIAS

1 - Landing gear control .... **DN**
2 - "LDG GEAR" 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 GEAR" 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 WARNING 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 - Flap control lever .... **UP**

3 - SHORTEN flight maintaining airspeeds :
- *IAS ≤ 178 KIAS* *for deflections between "UP" and "TO" positions*
- *IAS ≤ 122 KIAS* *for deflections greater than "TO" position*

4 - For landing, refer to Chapter 3.7, Paragraph "LANDING WITH FLAPS MALFUNCTION".

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 ≤ 178 KIAS* *for deflections between "UP" and "TO" positions*
- *IAS ≤ 122 KIAS* *for deflections greater than "TO" position*

4 - For landing, refer to Chapter 3.7, Paragraph "LANDING WITH FLAPS MALFUNCTION".

SECTION 3.12

DEICING SYSTEM

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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 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/°C" selector (pilot) . . . . **Maxi warm**

2 - "AIR FLOW" distributor . . . . **HOT**

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/°C" selector (pilot) . . . . **Set to 21°C (12 o'clock position)**

2 – "AIR FLOW" distributor . . . . **DEFOG**

3 – "WINDSHIELD" switch . . . . **ON**

If not successful, to gain sufficient visibility :

4 – "AIR FLOW" distributor . . . . **HOT**

5 – Manually clean a sufficient visibility area.

6 – 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.

7 – For landing with flaps LDG, maintain :

Weight < 6250 lbs (2835 kg)	Weight ≥ 6250 lbs (2835 kg)
IAS ≥ 90 KIAS	**IAS ≥ 95 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 WARNING CAS MESSAGES "PITOT NO HT L", "PITOT NO HT R" OR "STALL NO HEAT" ON

Indicates a heating failure of the corresponding probe

"PITOT NO HT L"

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_{MO} overshooting and stall warning lights are always operating

"PITOT NO HT R"

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

Monitor maximum airspeed . . . . $\leq$ ***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

SECTION 3.13

MISCELLANEOUS

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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 ΔP 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" remote control 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

AUTOPILOT OR ELECTRIC PITCH TRIM MALFUNCTION

1 - "AP / TRIMS DISC INT" push-button . . . . **PRESSED and HELD**

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

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

4 - If necessary, control wheel . . . . **RETRIM**

CAUTION

WHEN DISCONNECTING THE AUTOPILOT AFTER A PITCH TRIM MALFUNCTION, HOLD THE CONTROL WHEEL FIRMLY ; UP TO 30 POUNDS OF FORCE ON THE CONTROL WHEEL MAY BE NECESSARY TO HOLD THE AIRPLANE LEVEL

3.13 - MISCELLANEOUS

INADVERTENT SPINS

(Voluntary spins are prohibited)

In case of inadvertent 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...)

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)

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.

3.13 - MISCELLANEOUS

OXYGEN USE (2/2)

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.

3.13 - MISCELLANEOUS

AIRSPEED INDICATING SYSTEM FAILURE

Symptoms : erroneous indication in flight

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

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

If symptoms persist :

3 - "ALTERNATE STATIC" selector . . . . **PULL THROROUGHLY**

If symptoms persist, as well as on the airspeed indicator of the R.H instrument panel, carry out a precautionary approach maintaining an adequate speed.

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 or 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 becontinued 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" <u>is associated</u> to **white** annunciation "IAS NO COMP" and/or "ALT NO COMP" :

1 - NO action required

If <u>ALL</u> 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** (<u>not associated</u> 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**

SECTION 4

NORMAL PROCEDURES

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

4.1 - GENERAL

This Section provides procedures for the conduct of normal operation of TBM 850 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.

4.2 - AIRSPEEDS FOR NORMAL OPERATION

CONDITIONS : – Takeoff weight :	6579 lbs (2984 kg)	7394 lbs (3354 kg)
– Landing weight :	6250 lbs (2835 kg)	7024 lbs (3186 kg)
1 Rotation airspeed (V_R) – Flaps TO	Depending on weight (See "Takeoff distances" Chapter 5.9)	
2 Best rate of climb speed (V_Y) – Landing gear UP, flaps UP	123 KIAS	124 KIAS
3 Best angle of climb speed (V_x)	95 KIAS	100 KIAS
4 Maximum speed : – Flaps TO – Flaps LDG	 178 KIAS 122 KIAS	 178 KIAS 122 KIAS
5 Maximum speed with landing gear down	178 KIAS	178 KIAS
6 Maximum landing gear operating speed – Extension – Retraction	 178 KIAS 128 KIAS	 178 KIAS 128 KIAS
7 Approach speed – Flaps LDG	80 KIAS	85 KIAS
8 Maximum operating speed (V_{MO})	266 KIAS	266 KIAS
9 Glide speed (maximum L / D ratio) – Landing gear UP, flaps UP	120 KIAS	120 KIAS
10 Maximum inertial separator operating speed	200 KIAS	200 KIAS

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)

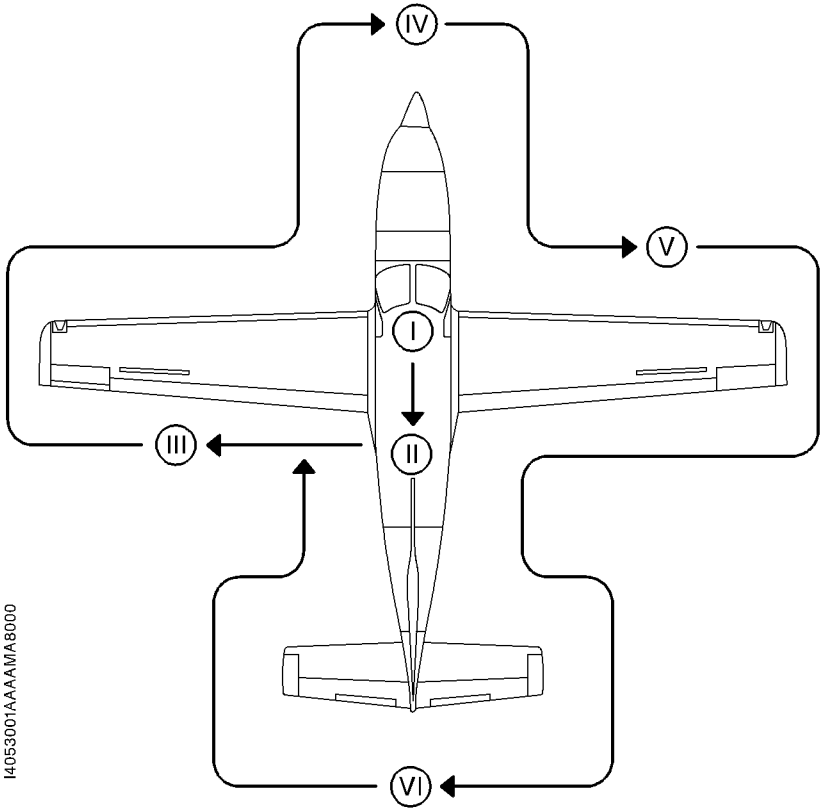

Figure 4.3.1 - PREFLIGHT INSPECTION

CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

A - INSIDE INSPECTIONS

Cockpit I

1 - DE ICE SYSTEM panel
- All switches . . . . **OFF**

2 - ELT . . . . **ARM**

3 - "NORMAL/MASK" micro inverter . . . . **NORMAL**

4 - Flight control lock . . . . **REMOVED / STOWED**

5 - Flight controls . . . . **Deflections checked**

6 - Parking brake . . . . **SET**

7 - Landing gear control . . . . **DN**

8 - 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**

9 - Flaps control . . . . **UP**

10 - Fuel tank selector . . . . **L or R**

CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

11 - Landing gear emergency control
- Lever . . . . **PULLED DOWN**
- By-pass selector . . . . **PUSHED**
- Door . . . . **IN PLACE**

12 - ECS panel
- "BLEED" switch . . . . **OFF**
- "AIR COND" switch . . . . **OFF**
- "DUMP" switch . . . . **GUARDED**

13 - Static Air control knob . . . . **PUSHED**

14 - "RAM AIR" control knob . . . . **PUSHED**

15 - Breakers panel
- All breakers . . . . **ENGAGED**

16 - "AVIONICS" MASTER switch . . . . **OFF**

17 - "AP TRIMS" MASTER switch . . . . **OFF**

18 - Fuel
- "FUEL SEL" selector . . . . **MAN**
- "AUX BP" switch . . . . **OFF**

19 - ENGINE START panel
- "IGNITION" switch . . . . **AUTO or OFF**
- "STARTER" switch . . . . **OFF**

20 - ELECTRIC POWER panel
- CRASH lever . . . . **UP**
- "GENERATOR" selector . . . . **MAIN**
- "SOURCE" selector . . . . **OFF**

21 - Access lighting . . . . **CHECKED**

22 - INT LIGHTS panel . . . . **OFF**

CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

23 - EXT LIGHTS panel
  - All switches . . . . **OFF**

24 - Pilots "OXYGEN" switch . . . . **OFF**

25 - "PASSENGERS OXYGEN" switch . . . . **OFF**

26 - Emergency lighting . . . . **CHECKED**

CAUTION

BEFORE SELECTING SOURCE, CHECK :

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

28 - "STARTER" switch . . . . OFF

29 - Landing gear control . . . . DN

30 - "SOURCE" selector . . . . **BAT or GPU**

31 - Voltage . . . . **CHECK**
  - BAT . . . . **$\geq$ 24.5 Volts**
  - GPU . . . . **$\simeq$ 28 Volts**

32 - EXT LIGHTS panel
  - "LTS TEST" push button . . . . **PRESS**
    (All instrument panel lamps ON except on landing gear control panel)
  - "L.LDG / TAXI / R.LDG" switches . . . . **ON**
    (3 green lamps ON)
  - "L.LDG / TAXI / R.LDG" switches . . . . **OFF**
  - "STROBE" . . . . **ON**
  - "NAV" . . . . **ON**

CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

Reentering the airplane

33 - EXT LIGHTS panel .... **ALL SWITCHES OFF**

34 - DE ICE SYSTEM panel
- All switches .... **OFF**
- "ICE LIGHT" .... **ON**

35 - "AVIONICS" MASTER switch .... **START**

36 - CAS display .... **CHECK**

37 - Left and right fuel quantities .... **CHECK**

38 - EXT LIGHTS panel
- "LTS TEST" push button .... **PRESS**
(red and amber MASTER warnings ON)

39 - Flaps .... **LDG**

40 - Landing gear panel .... **Warning lights : 3 GREEN ON**
Test 1, then 2 : RED FLASHING

41 - DE ICE SYSTEM panel
- "PITOT L HTR" switch .... **ON**

WARNING CAS MESSAGE "PITOT HT L" OFF

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

WARNING CAS MESSAGE "PITOT HT ON L-R" OFF

WARNING CAS MESSAGE "STALL HEAT ON" OFF

"PITOT L HTR" switch .... **OFF**

"PITOT R & STALL HTR" switch .... **OFF**

CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

WARNING

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

42 - "AVIONICS" MASTER switch . . . . **OFF**

43 - "SOURCE" selector . . . . **OFF**

Cabin II

1 - Cabin fire extinguisher . . . . **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 . . . . **IN PLACE**

7 - Doors operation . . . . **CHECK**

8 - 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 - Left pitot . . . . **Condition - CHECK**

9 - Wing lower surface . . . . **CHECK**
(No leak)

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

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

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

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CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

Fuselage forward section IV

1 - Forward 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 - Right pitot . . . . **Condition - CHECK**

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

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

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CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

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

13 - Rear R.H. karman
- Oxygen cylinder .... **OPEN**
- Oxygen quantity .... **CHECKED**

14 - Oxygen pressure .... **CHECK**

Fuselage rear section / Empennages VI

1 - ELT .... **OFF**
- ELT door .... **CLOSED/LOCKED**

2 - Static pressure ports .... **CLEAN - CHECK**

3 - Ventral fins .... **CHECK**
(Condition / Attachments)

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)

CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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 (1/3)

CAUTION

"BLEED" SWITCH SET TO "AUTO" 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 - "Pilot" door (if installed) .... **CLOSED / LOCKED**

4 - Baggage .... **STOWED**

5 - Parking brake .... **SET**

6 - Weight and balance .... **COMPUTED / CHECKED**

7 - Pilot seat and R.H. front seat (if occupied)
   - Height adjustment .... **Maximum UP**
   - Fore and aft adjustment ... **ADJUST and CHECK LOCKING**
   - Height adjustment .... **ADJUST**

CAUTION

IT IS MANDATORY TO ADJUST SEAT IN FORE-AFT MOVEMENT WHEN SEAT IS IN MAXIMUM HIGH PERMISSIBLE POSITION, TO AVOID INTERFERENCE BETWEEN SIDE UPHOLSTERY PANEL AND SEAT HOUSING IN LOW AND INTERMEDIATE POSITIONS

CHECK-LIST PROCEDURES

BEFORE STARTING ENGINE (2/3)

8 - R.H and L.H. pedals .... **ADJUSTED**

9 - Belts and harnesses (Pilot and passengers) .... **FASTENED**

10 - "NORMAL/MASK" micro inverter .... **NORMAL**

11 - Landing gear control .... **DN**

12 - "AVIONICS" MASTER switch .... **START**

13 - RADIO VHF .... **ON - ADJUSTED**

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

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

16 - "SOURCE" selector .... **BAT (or GPU)**

17 - Authorization for engine starting .... **ASKED**

18 - Pilots "OXYGEN" switch .... **ON**

19 - "PASSENGERS OXYGEN" switch .... **OFF**

20 - Copilot and pilot masks .... **Press push-button "PRESS TO TEST" : the blinker shall turn red momentarily, then turns transparent**

21 - Passengers briefing .... **AS REQUIRED**

22 - CAS display
- Access door and (if installed) "pilot" door

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

- Oxygen emergency system

WARNING CAS MESSAGE	**"OXYGEN"**	**OFF**

CHECK-LIST PROCEDURES

BEFORE STARTING ENGINE (3/3)

23 - 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

24 - EXT LIGHTS panel
- "STROBE" .... **AS REQUIRED**

25 - 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** **$\geq$ 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**

CHECK-LIST PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (2/5)

7 - Flaps .... **UP**

> **WARNING**
>
> **IT IS PROHIBITED TO SET FLAPS CONTROL LEVER TO "850" POSITION ON GROUND AND FOR TAKEOFF**

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

WARNING CAS MESSAGE "AUX BOOST PMP ON" ON

WARNING CAS MESSAGE "FUEL PRESS" OFF

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 AIRPLANE POWER (3/5)

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 $\leq$ 870°C FOR MORE THAN 20 SECONDS - $\leq$ 1000°C FOR MORE THAN 5 SECONDS),

INTERRUPT STARTING PROCEDURE :

Condition lever .... CUT OFF

"IGNITION" switch .... OFF (or AUTO)

Wait ITT < 850°C, then :

"STARTER" switch .... OFF

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

CONTINUE WITH NORMAL PROCEDURE HEREAFTER

CAUTION

IF ENGINE IS SLOW TO START OR STAGNATES,

INTERRUPT STARTING PROCEDURE :

Condition lever .... CUT OFF

"IGNITION" switch .... OFF (or AUTO)

"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 AIRPLANE POWER (4/5)

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

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

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

Ng $\simeq$ 13 %

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

Monitor increase of :
- ITT .... **(max. ITT : $\lesssim$ 870°C for 20 seconds max.**
  $\lesssim$ 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 > 52 %**
(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

CHECK-LIST PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (5/5)

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

12 - Engine instruments .... **CHECK : Ng ≃ 69 % (± 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
- Ammeter .... **CHARGE CHECKED**
- Voltmeter .... **VOLTAGE CHECKED**
(V ≃ 28 Volts)

CHECK-LIST PROCEDURES

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

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

CAUTION

BEFORE SELECTING SOURCE, CHECK :

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

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

- Voltmeter .... **VOLTAGE CHECKED (V $\simeq$ 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 (Flight idle stop)**
- Propeller governor lever .... **MAX RPM**
- Condition lever .... **CUT OFF**

CHECK-LIST PROCEDURES

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

8 - Flaps .... **UP**

> **WARNING**
>
> **IT IS PROHIBITED TO SET FLAPS CONTROL LEVER TO "850" POSITION ON GROUND AND FOR TAKEOFF**

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

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

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

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

10 - Propeller .... **AREA CLEAR**

11 - 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)

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 $\leq$ 870°C FOR MORE THAN 20 SECONDS - $\leq$ 1000°C FOR MORE THAN 5 SECONDS),

INTERRUPT STARTING PROCEDURE :

Condition lever . . . . CUT OFF

"IGNITION" switch . . . . OFF (or AUTO)

Wait ITT < 850°C, then :

"STARTER" switch . . . . OFF

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

CONTINUE WITH NORMAL PROCEDURE HEREAFTER

CAUTION

IF ENGINE IS SLOW TO START OR STAGNATES,

INTERRUPT STARTING PROCEDURE :

Condition lever . . . . CUT OFF

"IGNITION" switch . . . . OFF (or AUTO)

"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) (4/5)

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

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

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

Ng $\simeq$ 13 %

- Condition lever .... **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**

Ng $\simeq$ 50 %
- "STARTER" switch .... **OFF**

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

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

Engine instruments .... **CHECK Ng > 52 %**
(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

CHECK-LIST PROCEDURES

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

12 - "SOURCE" selector . . . . **BAT**

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

13 - Propeller governor lever . . . . **FEATHER**

14 - GPU . . . . **HAVE IT DISCONNECTED**

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

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

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

17 - Engine instruments . . . . **CHECK : Ng ≃ 69 % (± 2 %)**
(Oil pressure / Oil temperature / ITT = green sector)

18 - FUEL panel
- "AUX BP" switch . . . . **AUTO**

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

19 - Generator

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

RESET if necessary
- Ammeter . . . . **CHARGE CHECKED**
- Voltmeter . . . . **VOLTAGE CHECKED**
(V ≃ 28 Volts)

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 (Flight idle stop)**
  - 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**

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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

MOTORING 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 (Flight idle stop)**
- 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**

CHECK-LIST PROCEDURES

MOTORING FOLLOWED BY AN ENGINE START (2/2)

5 - After 15 seconds :
- "IGNITION" switch .... **AUTO**
- Ng .... **Check at ≃ 13 %**
- Condition lever .... **LO / IDLE**

6 - Monitor increase of :
- ITT .... **(max. ITT : ≤ 870°C for 20 seconds max.**
  ≤ 1000°C for 5 seconds max.)
- Ng
- Oil pressure

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

Ng ≃ 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 ≃ 69 % (± 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
- Ammeter .... **CHARGE CHECKED**
- Voltmeter .... **VOLTAGE CHECKED**
  (V ≃ 28 Volts)

CHECK-LIST PROCEDURES

AFTER STARTING ENGINE (1/2)

1 - "GENERATOR" selector
- On "MAIN" .... **Voltage and current checked**

when current ≤ 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 - Oxygen supply .... **Available for the planned flight (see tables of paragraph "IN-FLIGHT AVAILABLE OXYGEN QUANTITY" in this Chapter and Chapter 7.10 for a FAR 135 type operation)**

5 - PFD 1, MFD and PFD 2
- Brightness .... **ADJUST If necessary**
- DISPLAY BACKUP button .... **CHECK then return to NORMAL mode**

If ammeter < 100 A :

6 - ECS panel
- "BLEED" switch .... **AUTO**
- "AIR COND" switch .... **AUTO**
- "CABIN CTRL" selector .... **AS REQUIRED**
- "CABIN TEMP/°C" selectors .... **ADJUST**
- "AIR FLOW" distributor .... **AS REQUIRED**
- Cabin pressure control panel .... **Airfield altitude**

7 - Stand-by instruments .... **CHECKED**
- Suction gage .... **CHECKED**

8 - ADI/HSI on PFD1 / PFD2 .... **CHECKED**

9 - Altimeter setting .... **CHECKED**

⬇

CHECK-LIST PROCEDURES

AFTER STARTING ENGINE (2/2)

10 - VHF/VOR/GPS . . . . **ADJUSTED - TESTED**
- Radar/Stormscope/TAS/TAWS/ Radio altimeter (if installed) . . . . **ADJUSTED - TESTED**

11 - MFD flight management
- Weight computing . . . . **SET/CHECKED**
- FOB synchro . . . . **SET**
- FPL (if requested) . . . . **SET**

12 - 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**

13 - DE ICE SYSTEM panel
- "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 lights 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

IN-FLIGHT AVAILABLE OXYGEN QUANTITY

Oxygen pressure . . . . **Read**

Outside air temperature (OAT) . . . . **Read**

1 - Determine the usable oxygen percent using the chart Figure 4.3.2.

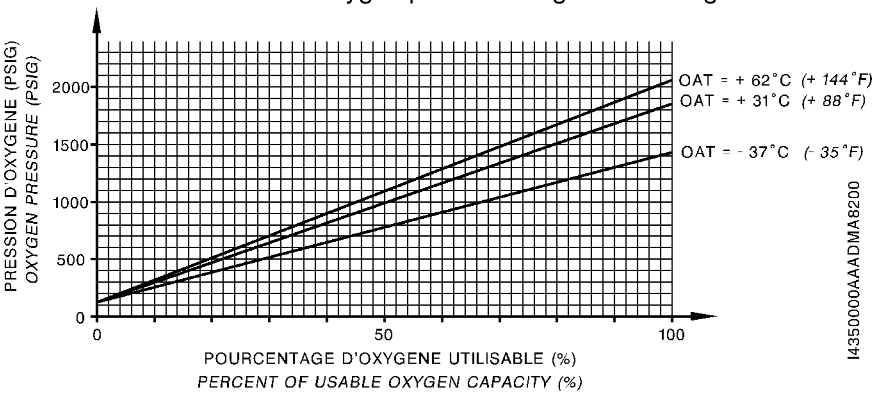


Figure 4.3.2

2 - Determine the oxygen duration in minutes by multiplying the values read on table Figure 4.3.3 by the percent obtained with the chart Figure 4.3.2.

Number of passengers	Duration : Passengers, plus 1 pilot	Duration : Passengers, plus 2 pilots
0	226	113
1	162	94
2	127	81
3	104	71
4	88	65

Figure 4.3.3

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**

10 - Cabin pressurization control panel . **Cruise altitude + 1000 feet**

CHECK-LIST PROCEDURES

BEFORE TAKEOFF (1/2)

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

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

2 - Condition lever .... **HI / IDLE**
[Ng : 69 % (± 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 L HTR" switch .... **ON**
- "PITOT R & 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's 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 ≃ + 2°**

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 5.9**
- Normal takeoff . . . . **ATTITUDE : 7°5**
- Short takeoff
  . Weight < 6579 lbs (2984 kg) . . . . **ATTITUDE : 15°**
  . Weight ≥ 6579 lbs (2984 kg) . . . . **ATTITUDE : 12°5**

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 - Initial climb speed . . . . . Weight < 6579 lbs (2984 kg) : **110 KIAS**
Weight ≥ 6579 lbs (2984 kg) :**115 KIAS**

14 - Flaps . . . . **UP**

Only when flaps are confirmed UP :

15 - Flap control **850**

16 - Power lever . . . . **TRQ =121.4 %**

17 - Climb speed (recommended) . . . . **130 KIAS**
- Trims (Pitch, Roll and Yaw) **ADJUSTED**

18 - "YAW DAMPER" push-button . . . . **ON**

19 - Lights
- "TAXI" . . . . **OFF**
- "L.LDG / R.LDG" . . . . **AS REQUIRED**

CHECK-LIST PROCEDURES

CLIMB

1 - Power lever .... **ADJUST according to engine operation tables - Chapter 5.8 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 5.8**

2 - Climb speed .... **AS REQUIRED**

3 - ECS panel
- Cabin pressure control panel .... **Cruise altitude + 1000 feet**
- Pressurization .... **CHECK**
- "CABIN TEMP/°C" selectors .... **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 tables - Chapter 5.8 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 5.8**

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

3 - Fuel

- Gages .... **CHECK**

  REGULARLY CHECK :
  - **consumption**
  - **expected fuel at destination**
  - **tank automatic change (every 10 minutes)**
  - **symmetry [max. dissymmetry 15 us gal (57 Litres)]**

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**

CHECK-LIST PROCEDURES

FLAP CONTROL TRANSITION FROM "UP" TO "850"

1 - Flaps .... **CHECKED UP**
2 - Propeller RPM **2000**
3 - Power lever .... **TRQ $\leq$ 100 %**
4 - Flap control lever .... **From UP to 850**
5 - Power lever .... **As required**
TRQ less than 121.4 %

FLAP CONTROL TRANSITION FROM "850" TO "UP"

1 - Altitude .... **At or above 1500 ft AGL**
2 - Propeller RPM **2000**
3 - Power lever .... **TRQ $\leq$ 100 %**
4 - Flap control lever .... **From 850 to UP**
5 - Power lever .... **As required**
TRQ less than 100 %
(2000 RPM)

CHECK-LIST PROCEDURES

DESCENT

1 - Flaps .... **UP**

2 - Altimeter settings .... **COMPLETE**

3 - "ALT SEL" .... **SELECTED**

4 - ECS panel
- Cabin pressure control panel .... **Airfield altitude**

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

CAUTION

IF HEAVY PRECIPITATION, TURN IGNITION AND INERT SEP ON

CAUTION

USE OF CONTROL REVERSE BETA (β) RANGE (BEHIND THE FLIGHT IDLE POSITION) IS PROHIBITED DURING FLIGHT

6 - Windshield misting protection system .... **As required**

7 - Fuel
- Gages .... **CHECK**
(Quantity / Symmetry)
- Fullest tank .... **SELECT**

8 - Passengers briefing .... **As required**

9 - Seats, belts and harnesses .... **LOCKED**

10 - Passengers's table .... **REMOVED**

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**
- 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 .... **DISCONNECT**

9 - Flaps .... (IAS ≤ 122 KIAS) .... **LDG**

10 - Approach speed
(Flaps LDG) .... Weight < 6250 lbs (2835 kg) : **80 KIAS**
Weight ≥ 6250 lbs (2835 kg) : **85 KIAS**
(Flaps LDG) .... With AP engaged : .... **≥ 85 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

ON SNOWY OR DIRTY RUNWAY, IT IS BETTER NOT TO USE REVERSE BELOW 40 KIAS

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

CHECK-LIST PROCEDURES

GO-AROUND

1 - GO AROUND push-button . . . . **PUSHED**

2 - Simultaneously
- Power lever . . . . **TRQ = 100 %**
- Attitude . . . . **7°5**

3 - Flaps . . . . **TO**

<u>Weight below 6579 lbs (2984 kg)</u>

If the vertical speed is positive and if IAS is at or above 85 KIAS :

4 - Landing gear control . . . . **UP**
All warning lights OFF

If IAS is at or above 110 KIAS :

5 - Flaps . . . . **UP**

6 - Climb speed . . . . **AS REQUIRED**

<u>Weight above 6579 lbs (2984 kg)</u>

If the vertical speed is positive and if IAS is at or above 90 KIAS :

7 - Landing gear control . . . . **UP**
All warning lights OFF

If IAS is at or above 115 KIAS :

8 - Flaps . . . . **UP**

9 - Climb speed . . . . **AS REQUIRED**

10 - Power . . . . **AS REQUIRED**

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 5.9**

- Normal takeoff . . . . **ATTITUDE : 7°5**
- Short takeoff
  . Weight < 6579 lbs (2984 kg) . . . . **ATTITUDE : 15°**
  . Weight ≥ 6579 lbs (2984 kg) . . . . **ATTITUDE : 12°5**

CHECK-LIST 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**
- "WINDSHIELD" switch .... **As required**
- "PITOT L HTR" switch .... **OFF**
- "PITOT R & STALL HTR" switch .... **OFF**
- "BLEED" switch .... **As required**

2 - Radar (if installed) .... **CHECKED STANDBY**

3 - Transponder .... **CHECKED SBY**

4 - Flaps .... **UP**

5 - "STROBE" switch .... **OFF**

6 - Lights
- "L.LDG / R.LDG" .... **OFF**
- "TAXI" .... **ON**

7 - "OXYGEN" switch .... **OFF**

CHECK-LIST PROCEDURES

SHUT-DOWN (1/2)

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

WARNING CAS MESSAGE "PARK BRAKE" ON

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

3 - Power lever . . . . **IDLE for 1 minute minimum**

4 - "TAXI" light . . . . **OFF**

5 - "AP TRIMS" MASTER switch . . . . **OFF**

6 - "AVIONICS" MASTER switch . . . . **START**

7 - ECS panel
- "BLEED" switch . . . . **OFF**
- Check for cabin depressurization
- "AIR COND" switch . . . . **OFF**

CAUTION

IN CASE OF SHUT-DOWN ON A CONTAMINATED AREA :

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

8 - Propeller governor lever . . . . **FEATHER for 15 seconds**

9 - Condition lever . . . . **CUT OFF**

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

11 - "AVIONICS" MASTER switch . . . . **OFF**

12 - EXT LIGHTS panel
- All switches . . . . **OFF**

CHECK-LIST PROCEDURES

SHUT-DOWN (2/2)

13 - INT LIGHTS panel
- All switches . . . . **OFF**

14 - Fuel
- "AUX BP" switch . . . . **OFF**
- "FUEL SEL" switch . . . . **MAN**
- Tank selector . . . . **OFF**

15 - "GENERATOR" selector . . . . **OFF**

16 - "SOURCE" selector . . . . **OFF**

17 - CRASH lever . . . . **PUSHED DOWN**

18 - 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")

4.4 - AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION

A - INSIDE INSPECTIONS

Cockpit I

1 - DE ICE SYSTEM panel
- All switches . . . . **OFF**

2 - ELT . . . . **ARM**

3 - "NORMAL/MASK" micro inverter . . . . **NORMAL**

4 - 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.

5 - Flight controls . . . . **Deflections checked**

6 - Parking brake . . . . **SET**

7 - Landing gear control . . . . **DN**

8 - 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

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 (Flight idle stop)**
- Propeller governor lever . . . . **MAX. RPM**
- Condition lever . . . . **CUT OFF**

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

9 - Flaps control . . . . **UP**

10 - Fuel tank selector . . . . **L or R**

11 - Landing gear emergency control
Open door of emergency landing 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.

12 - ECS panel
- "BLEED" switch . . . . **OFF**
- "AIR COND" switch . . . . **OFF**
- "DUMP" switch . . . . **GUARDED**

13 - Static Air control knob . . . . **PUSHED**

14 - "RAM AIR" control knob . . . . **PUSHED**

15 - Breakers panel
- All breakers . . . . **ENGAGED**

16 - "AVIONICS" MASTER switch . . . . **OFF**

17 - "AP TRIMS" MASTER switch . . . . **OFF**

18 - Fuel
- "FUEL SEL" selector . . . . **MAN**
- "AUX BP" switch . . . . **OFF**

19 - 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).

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

20 – ELECTRIC POWER panel
- CRASH lever . . . . **UP**
- "GENERATOR" selector . . . . **MAIN**
- "SOURCE" selector . . . . **OFF**

21 – Access lighting . . . . **CHECKED**
This check allows to ensure that the fuse of the "BAT BUS" operates correctly.

22 – INT LIGHTS panel . . . . **OFF**

23 – EXT LIGHTS panel
- All switches . . . . **OFF**

24 – Pilots "OXYGEN" switch . . . . **OFF**

25 – "PASSENGERS OXYGEN" switch . . . . **OFF**

26 – Emergency lighting . . . . **CHECKED**

CAUTION

BEFORE SELECTING SOURCE, CHECK :

27 – "IGNITION" switch . . . . AUTO or OFF

28 – "STARTER" switch . . . . OFF

29 – Landing gear control . . . . DN

30 – "SOURCE" selector . . . . **BAT or GPU**

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

31 - Voltage . . . . **CHECK**
- BAT . . . . $\geq$ **24.5 Volts**
  If not, use a GPU or charge battery. This minimum voltage is not an absolute guarantee for a correctly charged battery. It is recommended to use a GPU in cold weather, when airplane has been stopped more than 3 hours at a temperature below - 10°C (+14°F).
- GPU . . . . $\simeq$ **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.

32 - EXT LIGHTS panel
- "LTS TEST" push button . . . . **PRESS**
  (All instrument panel lamps ON except on landing gear control panel)
- "L.LDG / TAXI / R.LDG" switches . . . . **ON**
  (3 green lamps ON)
  The illuminated three green lamps located on switches prove the correct operation of the three landing lights.
- "L.LDG / TAXI / R.LDG" switches . . . . **OFF**
- "STROBE" . . . . **ON**
- "NAV" . . . . **ON**

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

Reentering the airplane

33 - EXT LIGHTS panel . . . . **ALL SWITCHES OFF**

34 - DE ICE SYSTEM panel
- All switches . . . . **OFF**
- "ICE LIGHT" . . . . **ON**

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

35 – "AVIONICS" MASTER switch . . . . **START**

36 – CAS display . . . . **CHECK**

37 – Left and right fuel quantities . . . . **CHECK**

38 – EXT LIGHTS panel
– "LTS TEST" push button . . . . **PRESS**
(red and amber MASTER warnings ON)

39 – Flaps . . . . **LDG**

40 – Landing gear panel . . . . **Warning lights : 3 GREEN ON**
Test 1, then 2 : RED FLASHING
"Test 1" and "2" correspond to BUS bars 1 or 2, which feed them respectively.

41 – DE ICE SYSTEM panel
– "PITOT L HTR" switch . . . . **ON**

WARNING CAS MESSAGE "PITOT HT L" OFF

– "PITOT R & STALL HTR" switch . . . . **ON**
Correct operation of pitot (PITOT L and R) tube heating elements and of stall aural warning system (STALL HTR) is indicated by disappearance of corresponding CAS message, when control switches are ON.

WARNING CAS MESSAGE "PITOT HT ON L-R" OFF

WARNING CAS MESSAGE "STALL HEAT ON" OFF

"PITOT L HTR" switch . . . . **OFF**

"PITOT R & STALL HTR" switch . . . . **OFF**

WARNING

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

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

42 – "AVIONICS" MASTER switch . . . . **OFF**

43 – "SOURCE" selector . . . . **OFF**

Cabin **II**

1 – Cabin fire extinguisher . . . . **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 . . . . **IN PLACE**

7 – Doors operation . . . . **CHECK**

8 – Stairs condition . . . . **CHECK**
(Condition / Play)

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 – Left pitot .... **Condition – CHECK**

9 – Wing lower surface .... **CHECK (No leak)**

- Check fuel tank access doors for leaks
- Check for surface damage.

10 – 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.

⬇

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

11 - 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.
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.

12 - 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 - Forward compartment
- Inside .... **CONTROLLED**
- Door .... **CLOSED / LOCKED**

2 - GPU door .... **CLOSED**
(If not used)

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

3 – Fuel circuit drain .... **DRAIN**
(Fuel free of water and contamination)
– Filter contamination indicator **CHECK**

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 inlets of RAM AIR system (circular grille located in front of R.H. windshield) and of vapor cycle cooling system (two rectangular grilles located forward of the circular grille).

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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.

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**

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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 - Right pitot . . . . **Condition - CHECK**

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

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

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

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

13 - Rear R.H. karman
- Oxygen cylinder . . . . **OPEN**
- Oxygen quantity . . . . **CHECKED**

14 - Oxygen pressure . . . . **CHECK**

⬇

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

Fuselage rear section / Empennages VI

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

1 - ELT .... **OFF**
- ELT door .... **CLOSED/LOCKED**

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

2 - Static pressure ports .... **CLEAN - CHECK**

3 - 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.

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)

To check the deflection, hold the two half-elevators near fuselage, inside both elevator trims to avoid stresses.

7 - Static dischargers .... **CHECK**
(Condition)

8 - Vertical stabilizer deicer boots .... **CHECK**
(Condition / Attachments)

⬇

AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

9 – Rudder and trim .... **CHECK (Condition / Trim position)**

10 – Static dischargers .... **CHECK (Condition)**

11 – Tail cone .... **Condition – CHECK**

12 – Static pressure ports .... **Clean – CHECK**

AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (1/4)

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" SWITCH SET TO "AUTO" 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 - "Pilot" door (if installed) .... **CLOSED / LOCKED**

4 - Baggage .... **STOWED**

5 - 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.

6 - Weight and balance .... **COMPUTED / CHECKED**
In addition these data will be set in the MFD after starting.

AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (2/4)

7 - Pilot seat and R.H. front seat (if occupied)
- Height adjustment . . . . **Maximum UP**
- Fore and aft adjustment . . . **ADJUST and CHECK LOCKING**
- Height adjustment . . . . **ADJUST**

CAUTION

IT IS MANDATORY TO ADJUST SEAT IN FORE-AFT MOVEMENT WHEN SEAT IS IN MAXIMUM HIGH PERMISSIBLE POSITION, TO AVOID INTERFERENCE BETWEEN SIDE UPHOLSTERY PANEL AND SEAT HOUSING IN LOW AND INTERMEDIATE POSITIONS

Adjust pilot's and R.H. front 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.

8 - R.H and L.H. pedals . . . . **ADJUSTED**

9 - Belts and harnesses (Pilot and passengers) . . . . **FASTENED**
Check belt buckles for correct locking, as well as automatic locking of shoulder harness by exerting a rapid pull on the latter.

10 - "NORMAL/MASK" micro inverter . . . . **NORMAL**

11 - Landing gear control . . . . **DN**

12 - "AVIONICS" MASTER switch . . . . **START**
Provides illumination of PFD 1.

13 - RADIO VHF . . . . **ON - ADJUSTED**
The function "GND CLR" (ground clearance) enables, when "AVIONICS" MASTER switch is ON, to obtain VHF1 supply without having selected battery contact.

14 - "IGNITION" switch . . . . **AUTO or OFF**
The "IGNITION" switch is normally selected to AUTO. This ensures ignition, whenever the starter is activated.

AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (3/4)

15 - "STARTER" switch . . . . **OFF**
If not, starter is going to operate as soon as "SOURCE" selector is positioned on BAT or GPU in case of supplying by GPU.

16 - "SOURCE" selector . . . . **BAT (or GPU)**

17 - Authorization for engine starting . . . . **ASKED**

18 - Pilots "OXYGEN" switch . . . . **ON**

19 - "PASSENGERS OXYGEN" switch . . . . **OFF**

20 - Copilot and pilot masks . . . . **Press push-button "PRESS TO TEST" : the blinker shall turn red momentarily, then turns transparent**

21 - Passengers briefing . . . . **AS REQUIRED**

22 - CAS display

- Access door and (if installed) "pilot" door

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

  If "DOOR" CAS message is not OFF, open the access door and (if installed) the "pilot" door and reclose it (them). Check locking pins are in place (green band is visible). Do not take off with "DOOR" CAS message ON.

- Oxygen emergency system

  WARNING CAS MESSAGE **"OXYGEN"** **OFF**

  If not, open isolation valve of the oxygen cylinder in R.H. karman. 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.

⬇

AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (4/4)

23 - 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

24 - EXT LIGHTS panel
- "STROBE" . . . . **AS REQUIRED**

The use of strobe lights may generate discomfort to personnel on ground, particularly by night.

25 - In case of night flight
- INT LIGHTS panel : "INSTR" + "PANEL" . . . . **ADJUSTED**
- Navigation lights . . . . **ON**
- Flashlight (if necessary) . . . . **IN PLACE**

To maintain battery power for starting, and only when "GND CLR" (ground clearance) is available on airplane, VHF1 can be operated by setting "SOURCE" selector to OFF and "AVIONICS" MASTER switch to ON. If battery voltage is low (near 24.5 volts), turn off all unessential electrical equipment before selecting the starter ON.

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**
- Voltage . . . . **CHECKED** **$\geq$ 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**

CHECK-LIST PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (2/6)

7 - Flaps . . . . **UP**

> **WARNING**
>
> **IT IS PROHIBITED TO SET FLAPS CONTROL LEVER TO "850" POSITION ON GROUND AND FOR TAKEOFF**

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

WARNING CAS MESSAGE "AUX BOOST PMP ON" ON

WARNING CAS MESSAGE "FUEL PRESS" OFF

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.

AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (3/6)

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 starting with hot engine, an ITT decrease comprised between 150°C and 170°C (within starter operation limits), before opening of the condition lever, may allow to stay within above mentioned ITT limits.

In case of higher temperature and longer time, stop immediately the starting procedure as indicated in the following caution and inform the maintenance department.

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 850°C to 870°C limited to 20 seconds,

from 870°C to 1000°C limited to 5 seconds.

⬇

AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (4/6)

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 $\leq$ 870°C FOR MORE THAN 20 SECONDS - $\leq$ 1000°C FOR MORE THAN 5 SECONDS),

INTERRUPT STARTING PROCEDURE :

Condition lever .... CUT OFF

"IGNITION" switch .... OFF (or AUTO)

Wait ITT < 850°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 AIRPLANE POWER (5/6)

CAUTION

IF ENGINE IS SLOW TO START OR STAGNATES,

INTERRUPT STARTING PROCEDURE :

Condition lever .... CUT OFF

”IGNITION” switch .... OFF (or AUTO)

”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 .... **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**

AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (6/6)

Ng $\simeq$ 50 %
- "STARTER" switch . . . . **OFF**

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

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

Engine instruments . . . . **CHECK Ng > 52 %**
(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

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

12 - Engine instruments . . . . **CHECK : Ng $\simeq$ 69 % (± 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**

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.
- Ammeter . . . . **CHARGE CHECKED**
- Voltmeter . . . . **VOLTAGE CHECKED**

(V $\simeq$ 28 Volts)

AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (1/7)

1 – GPU . . . . **CONNECTED**

CAUTION

BEFORE SELECTING SOURCE, CHECK :

2 – "IGNITION" switch . . . . AUTO or OFF

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

– Voltmeter . . . . **VOLTAGE CHECKED (V $\simeq$ 28 Volts)**

If voltage is ≥ 30 volts, immediately turn "SOURCE" selector to OFF. Radio navigation equipment 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 (Flight idle stop)**

– Propeller governor lever . . . . **MAX RPM**

– Condition lever . . . . **CUT OFF**

STARTING ENGINE USING EXTERNAL POWER (GPU) (2/7)

8 - Flaps . . . . **UP**

> **WARNING**
>
> **IT IS PROHIBITED TO SET FLAPS CONTROL LEVER TO "850" POSITION ON GROUND AND FOR TAKEOFF**

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

WARNING CAS MESSAGE "AUX BOOST PMP ON" ON

WARNING CAS MESSAGE "FUEL PRESS" OFF

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

10 - Propeller . . . . **AREA CLEAR**

11 - 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 starting with hot engine, an ITT decrease comprised between 150°C and 170°C (within starter operation limits), before opening of the condition lever, may allow to stay within above mentioned ITT limits.

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 850°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 $\leq$ 870°C FOR MORE THAN 20 SECONDS – $\leq$ 1000°C FOR MORE THAN 5 SECONDS),

INTERRUPT STARTING PROCEDURE :

Condition lever .... CUT OFF

"IGNITION" switch .... OFF (or AUTO)

Wait ITT < 850°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**

CHECK-LIST PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (5/7)

CAUTION

IF ENGINE IS SLOW TO START OR STAGNATES,

INTERRUPT STARTING PROCEDURE :

Condition lever . . . . CUT OFF

"IGNITION" switch . . . . OFF (or AUTO)

"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 . . . . **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) (6/7)

Ng ≃ 50 %
– "STARTER" switch .... **OFF**

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

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

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

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

CONTINUE WITH NORMAL PROCEDURE HEREAFTER

12 – "SOURCE" selector .... **BAT**

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

13 – Propeller governor lever .... **FEATHER**

14 – GPU .... **HAVE IT DISCONNECTED**

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

This means that ground power receptacle door has been correctly locked.

15 – Condition lever .... **HI / IDLE**

16 – Propeller governor lever .... **MAX. RPM**

17 – Engine instruments .... **CHECK : Ng ≃ 69 % (± 2 %)**
(Oil pressure / Oil temperature / ITT = green sector)

AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (7/7)

18 - 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

19 - 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.

- Ammeter .... **CHARGE CHECKED**
- Voltmeter .... **VOLTAGE CHECKED (V $\simeq$ 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.

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.

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 (Flight idle stop)**
- Propeller governor lever . . . . **MAX. RPM**
- Condition lever . . . . **CUT OFF**

⬇

AMPLIFIED PROCEDURES

MOTORING (2/2)

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

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**
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

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 (Flight idle stop)**
   – 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

MOTORING FOLLOWED BY AN ENGINE START (2/3)

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

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 MESSAGE **"OIL PRESS"** **OFF**

NOTE :
No action is required for the following conditions :

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

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 % (± 2 %)**
(Oil pressure / Oil temperature / ITT = green sector)

AMPLIFIED PROCEDURES

MOTORING 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 goes out, as soon as "STARTER" CAS message goes out.
If not, increase Ng over 70 % to start main generator.
– Ammeter . . . . **CHARGE CHECKED**
– Voltmeter . . . . **VOLTAGE CHECKED (V $\simeq$ 28 Volts)**

AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (1/4)

1 – "GENERATOR" selector
For these tests, "BLEED" switch must be left OFF, to unload the generator circuit.
- On "MAIN" .... **Voltage and current checked**

when current ≤ 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"

2 – "AVIONICS" MASTER switch .... **ON**

3 – "AP TRIMS" MASTER switch .... **ON**

4 – Oxygen supply .... **Available for the planned flight (see tables of paragraph "IN-FLIGHT AVAILABLE OXYGEN QUANTITY" in this Chapter and Chapter 7.10 for a FAR 135 type operation)**

5 – 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 850.
- Brightness .... **ADJUST If necessary**
- DISPLAY BACKUP button .... **CHECK then return to NORMAL mode**

AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (2/4)

If ammeter < 100 A :

6 - ECS panel
- "BLEED" switch .... **AUTO**
- "AIR COND" switch .... **AUTO**
  A cabin temperature good regulation will only be obtained, if "AIR COND" switch is set to AUTO.
- "CABIN CTRL" selector .... **AS REQUIRED**
- "CABIN TEMP/°C" selectors .... **ADJUST**
- "AIR FLOW" distributor .... **AS REQUIRED**
  Usually selected to CABIN. However, if canopy misting is evident, select DEFOG or HOT to increase demisting efficiency.
- Cabin pressure control panel .... **Airfield altitude**

7 - Stand-by instruments .... **CHECKED**
- Suction gage .... **CHECKED**

8 - ADI/HSI on PFD1 / PFD2 .... **CHECKED**

9 - Altimeter setting .... **CHECKED**

10 - VHF/VOR/GPS .... **ADJUSTED - TESTED**
- Radar/Stormscope/TAS/TAWS/
  Radio altimeter (if installed) .... **ADJUSTED - TESTED**

11 - MFD flight management
- Weight computing .... **SET/CHECKED**
- FOB synchro .... **SET**
- FPL (if requested) .... **SET**

12 - 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 850.

  (See next page for the other trims)

AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (3/4)

- Pitch trim . . . . **UP / DN, then ADJUSTED**
  Adjust the indicator in green range (graduated from 12 to 37 %).
- 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).

13 - 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.

- "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**
- "WINDSHIELD" switch . . . . **ON**
  Check illumination of the green lights 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**

AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (4/4)

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 LOW” untimely alarms.

- ”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

  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

  full deflection takes about 30 seconds

  ”INERT SEP” switch is kept on while taxiing in order to avoid ingestion of particles by the engine.

AMPLIFIED PROCEDURES

IN-FLIGHT AVAILABLE OXYGEN QUANTITY

Oxygen pressure . . . . **Read**

Outside air temperature (OAT) . . . . **Read**

1 – Determine the usable oxygen percent using the chart Figure 4.4.1.

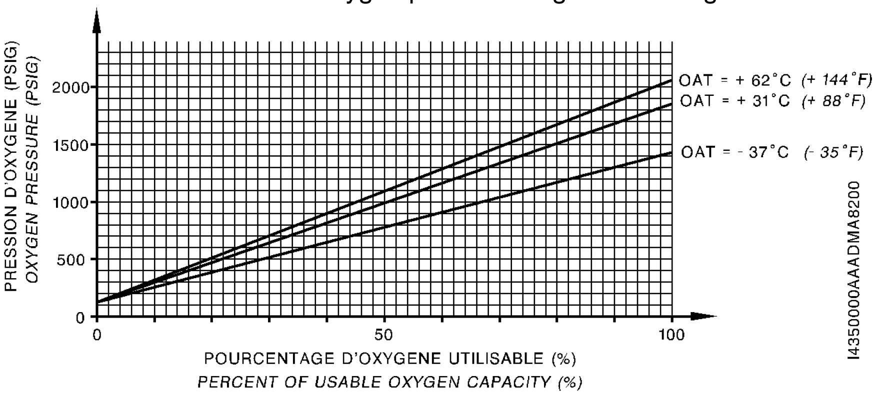


Figure 4.4.1

2 – Determine the oxygen duration in minutes by multiplying the values read on table Figure 4.4.2 by the percent obtained with the chart Figure 4.4.1.

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 4.4.2

AMPLIFIED PROCEDURES

TAXIING (1/2)

1 – "TAXI" light . . . . **ON**

2 – "INERT SEP" switch . . . . **CHECKED ON**

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

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 (β) range / reverse is selected with the power lever.

3 – Passenger briefing . . . . **AS REQUIRED**

4 – Parking brake . . . . **RELEASED**
Make sure that chocks are removed (if used).

WARNING CAS MESSAGE **"PARK BRAKE"** **OFF**

5 – L.H. and R.H. seats brakes . . . . **CHECKED**

6 – Nose wheel steering . . . . **CHECKED**
Check the control wheel move (roll) in the same direction as the rudder pedals due to the rudder / aileron interconnect.

7 – Power lever . . . . **AS REQUIRED**
After initial acceleration, power lever may be in the "TAXI RANGE" sector, avoiding excessive movements in order to keep a constant ground speed.
The condition lever must be in the HI / IDLE position to keep the propeller RPM (Np) out of the caution (yellow) range while taxiing.

AMPLIFIED PROCEDURES

TAXIING (2/2)

CAUTION

AVOID USING REVERSE DURING TAXIING

Operation in the Beta (β) 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 gyroscopic instruments on PFDs 1 / 2 and stand-by ADI during ground turns.

9 - CAS display . . . . **CHECK**

10 - Cabin pressurization control panel . **Cruise altitude + 1000 feet**

AMPLIFIED PROCEDURES

BEFORE TAKEOFF (1/3)

1 – Parking brake . . . . **SET**

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

2 – Condition lever . . . . **HI / IDLE**
[Ng : 69 % (± 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 goes out 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 L HTR" switch . . . . **ON**
- "PITOT R & STALL HTR" switch . . . . **ON**

AMPLIFIED PROCEDURES

BEFORE TAKEOFF (2/3)

If icing conditions are foreseen, refer to Chapter 4.5 ”PARTICULAR PROCEDURES” of this Section, Paragraph “Flight into known icing conditions”.

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

7 - Trims
- Pitch .... **ADJUSTED**
  Adjust inside green index sector, depending of the current balance condition.
- Yaw .... **ADJUSTED**
  Adjust abeam “TO” index.
- Roll .... **ADJUSTED**
  Adjust at neutral position.

8 - Pilot's / Passengers' belts .... **CHECK**
- Passengers's 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**
  Maximum dissymmetry is 15 us gal (57 litres). It is recommended to select the fullest tank (by pushing the ”SHIFT” push-button) if the lift off is expected within 1 minute and 15 seconds
- ”FUEL SEL” switch .... **CHECK AUTO**
- ”AUX BP” fuel switch .... **CHECK AUTO**

CHECK-LIST PROCEDURES

BEFORE TAKEOFF (3/3)

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.
- 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 (1/4)

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 ≃ + 2°**
Horizon has been set so as to indicate a 2° 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 deice systems are activated.
- Altimeter setting on PFDs 1 / 2 . . . . **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

AMPLIFIED PROCEDURES

TAKEOFF (2/4)

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.

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 5.9**
- Normal takeoff .... **ATTITUDE : 7°5**
- Short takeoff
  . Weight < 6579 lbs (2984 kg) .... **ATTITUDE : 15°**
  . Weight ≥ 6579 lbs (2984 kg) .... **ATTITUDE : 12°5**

Rotation speed at takeoff, according to airplane weight, is also given in Chapter 5.9.

10 - Vertical speed indicator .... **POSITIVE**

11 - Brakes .... **APPLY (Briefly)**

AMPLIFIED PROCEDURES

TAKEOFF (3/4)

12 - Landing gear control ..... (IAS < 128 KIAS) .... **UP**

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 go off at the end of the sequence.

At sequence end, check : All warning lights OFF

13 - Initial climb speed ..... Weight < 6579 lbs (2984 kg) : **110 KIAS**
Weight ≥ 6579 lbs (2984 kg) :**115 KIAS**

In case of initial climb at Vx, it is recommended not to retract flaps to UP before 500 ft AGL

Weight < 6579 lbs (2984 kg) : **95 KIAS**
Weight ≥ 6579 lbs (2984 kg) :**100 KIAS**

14 - Flaps .... **UP**

Only when flaps are confirmed UP :

15 - Flap control **850**
In case of air leak between the solenoïd valve and the torque limiter, the available torque might be below 100 %. Consequently, it is strongly recommended not to select "850" position :

- for a new approach or visual circuit
- for staying below 1500 ft AGL

AMPLIFIED PROCEDURES

TAKEOFF (4/4)

16 - Power lever . . . . **TRQ =121.4 %**

17 - Climb speed (recommended) . . . . **130 KIAS**
- Trims (Pitch, Roll and Yaw) **ADJUSTED**

18 - "YAW DAMPER" push-button . . . . **ON**

19 - Lights
- "TAXI" . . . . **OFF**
- "L.LDG / R.LDG" . . . . **AS REQUIRED**

AMPLIFIED PROCEDURES

CLIMB (1/2)

1 – Power lever .... **ADJUST according to engine operation tables – Chapter 5.8 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 5.8)

Torque setting during climb must be adjusted according to engine operation tables in Chapter 5.8. These tables give the max. climb power torque setting (MXCL). For each engine, when torque is reduced below 121.4 % at high altitude according to the tables, during the final climb, reaching the maximum permitted Ng (104 %) is possible and the ITT will be approximately constant, giving a particular value of ITT.

For a simplified engine operation during climb, power may be set first of all by torque, using 121.4 %, then, when the ITT typical value for climb is reached, by indicated ITT, using this particular value. The margin between this indicated ITT and 790°C (recommended ITT limit during continuous operation) will gradually reduce as flight time is performed.

2 – Climb speed .... **AS REQUIRED**

- If weight is below 6579 lbs (2984 kg), best climb speed is 123 KIAS.
- If weight is above 6579 lbs (2984 kg), best climb speed is 124 KIAS.

Performance tables concerning climb at 130 and 160 KIAS are given in Chapter 5.10.

AMPLIFIED PROCEDURES

CLIMB (2/2)

3 - ECS panel
- Cabin pressure control panel . . . . **Cruise altitude + 1000 feet**
- Pressurization . . . . **CHECK**
- "CABIN TEMP/°C" selectors . . . . **ADJUST**

4 - Fuel tank gages . . . . **CHECK / CORRECT (Quantity / Symmetry)**

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 15 us gal (57 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 tables - Chapter 5.8 or to Cruise index on the PFD's**

As indicated in lower part of these tables, reduce propeller RPM is possible (without touching power lever), in order to improve sound comfort without significant performance change (speed, consumption).

<u>FLAPS set to UP position (Active torque limiter)</u>

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 31000 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.

<u>FLAPS set to 850 position (Not active torque limiter)</u>

Propeller RPM reducing is possible, until 121.4 % maximum torque is reached (red line on indicator).

CAUTION

OBSERVE TRQ / Ng / Np / ITT / T° AND OIL PRESSURE LIMITATIONS. USE OPTIMUM TORQUE AND / OR REFER TO TABLES IN CHAPTER 5.8)

Engine operation tables (Chapter 5.8) give torque to be applied according to OAT, in order not to exceed authorized maximum power.

When "INERT SEP" switch is OFF, a more accurate setting of power must then be performed according to cruise performance tables presented in Chapter 5.11.

AMPLIFIED PROCEDURES

CRUISE (2/2)

2 – Pressurization . . . . **CHECK**

3 – Fuel

– Gages . . . . **CHECK**

REGULARLY CHECK :

- **consumption**
- **expected fuel at destination**
- **tank automatic change (every 10 minutes)**
- **symmetry [max. dissymmetry 15 us gal (57 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

FLAP CONTROL TRANSITION FROM "UP" TO "850"

1 - Flaps .... **CHECKED UP**

2 - Propeller RPM **2000**

3 - Power lever .... **TRQ $\leq$ 100 %**

4 - Flap control lever .... **From UP to 850**

The torque limiter is deactivated.

CAUTION

OBSERVE TRQ / Ng / Np / ITT / T°
AND OIL PRESSURE LIMITATIONS
(Refer to tables in Chapter 5.8)

Engine operation tables (Chapter 5.8) give torque to be applied according to OAT, in order not to exceed authorized maximum power.

When "INERT SEP" switch is OFF, a more accurate setting of power must then be performed according to cruise performance tables presented in Chapter 5.11.

5 - Power lever .... **As required**
TRQ less than 121.4 %

AMPLIFIED PROCEDURES

FLAP CONTROL TRANSITION FROM "850" TO "UP"

1 – Altitude . . . . **At or above 1500 ft AGL**

In case of air leak between the solenoïd valve and the torque limiter, the available torque might be below 100 %. Consequently, it is strongly recommended not to operate the flap control from "850" to "UP" below 1500 ft AGL.

2 – Propeller RPM **2000**

3 – Power lever . . . . **TRQ $\leq$ 100 %**

4 – Flap control lever . . . . **From 850 to UP**
The torque limiter is activated and limits torque to 110 %.

5 – Power lever . . . . **As required**
TRQ less than 100 %
(2000 RPM)

AMPLIFIED PROCEDURES

DESCENT (1/2)

1 – Flaps . . . . **UP**

2 – Altimeter settings . . . . **COMPLETE**

3 – "ALT SEL" . . . . **SELECTED**

4 – ECS panel
 – Cabin pressure control panel . . . . **Airfield altitude**

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 (β) RANGE (BEHIND THE FLIGHT IDLE POSITION) IS PROHIBITED DURING FLIGHT

AMPLIFIED PROCEDURES

DESCENT (2/2)

6 – Windshield misting protection system . . . . **As required**
Prior to descent in moist conditions, turn "AIR FLOW" distributor to 12 o'clock position and set "WINDSHIELD" switch to ON to avoid canopy misting.
If misting continues, set "AIR FLOW" distributor to HOT or refer to Chapter 3.12 Paragraph "WINDSHIELD MISTING OR INTERNAL ICING".

7 – Fuel
– Gages . . . . **CHECK (Quantity / Symmetry)**
– Fullest tank . . . . **SELECT**

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 15 us gal (57 Litres).

3 – "INERT SEP" switch ..... (IAS ≤ 200 KIAS) .... **ON**

4 – Propeller lever .... **MAX RPM**

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 go off at the end of the sequence.

6 – Flaps .... (IAS ≤ 178 KIAS) .... **TO**

7 – Lights
- "L.LDG / TAXI / R.LDG" .... **ON**

AMPLIFIED PROCEDURES

BEFORE LANDING (2/2)

Short final

8 - Autopilot . . . . **DISCONNECT**

9 - Flaps . . . . (IAS ≤ 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) . . . . Weight < 6250 lbs (2835 kg) : **80 KIAS**
Weight ≥ 6250 lbs (2835 kg) : **85 KIAS**
(Flaps LDG) . . . . With AP engaged : . . . . ≥ **85 KIAS**
This is to avoid any vertical deviation in case of late flaps extension to LDG position in short final.
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

ON SNOWY OR DIRTY RUNWAY, IT IS BETTER NOT TO USE REVERSE BELOW 40 KIAS

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 (1/2)

1 - GO AROUND push-button . . . . **PUSHED**
It provides the moving up of the flight director to + 7.5°.

2 - 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.

3 - Flaps . . . . **TO**

<u>Weight below 6579 lbs (2984 kg)</u>

If speed has been maintained at 80 KIAS or more and TRQ 100 %, select TO flaps as soon as the 8° attitude has been attained.

If the vertical speed is positive and if IAS is at or above 85 KIAS :

4 - Landing gear control . . . . **UP**
All warning lights OFF

If IAS is at or above 110 KIAS :

5 - Flaps . . . . **UP**

6 - Climb speed . . . . **AS REQUIRED**

<u>Weight above 6579 lbs (2984 kg)</u>

If speed has been maintained at 85 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 90 KIAS :

7 - Landing gear control . . . . **UP**
All warning lights OFF

AMPLIFIED PROCEDURES

GO-AROUND (2/2)

If IAS is at or above 115 KIAS :

8 - Flaps .... **UP**

In case of air leak between the solenoïd valve and the torque limiter, the available torque might be below 100 %. Consequently, it is strongly recommended not to select "850" :

- for a new approach or visual circuit
- for staying below 1500 ft AGL

9 - Climb speed .... **AS REQUIRED**

10 - Power .... **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 5.9**
- Normal takeoff .... **ATTITUDE : 7°5**
- Short takeoff
  . Weight < 6579 lbs (2984 kg) .... **ATTITUDE : 15°**
  . Weight ≥ 6579 lbs (2984 kg) .... **ATTITUDE : 12°5**

Rotation speed at takeoff, according to airplane weight, is also given in Chapter 5.9.
However, the pilot's operating handbook does not supply distances concerning touch and go. These distances are let to pilot's initiative.

In case of air leak between the solenoïd valve and the torque limiter, the available torque might be below 100 %. Consequently, it is strongly recommended not to select "850" position of the flap control lever :
- for a new approach or visual circuit
- for staying below 1500 ft AGL

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**
- "WINDSHIELD" switch .... **As required**
- "PITOT L HTR" switch .... **OFF**
- "PITOT R & STALL HTR" switch .... **OFF**
- "BLEED" switch .... **As required**

  Taxiing with BLEED 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 - Radar (if installed) .... **CHECKED STANDBY**
Maintain radar (if installed) on STANDBY in order not to generate radiations prejudicial to outside persons. The radar is automatically set to STANDBY after the touch-down.

3 - Transponder .... **CHECKED SBY**
The transponder is automatically set to SBY after the touch-down.

4 - Flaps .... **UP**

5 - "STROBE" switch .... **OFF**

6 - Lights
- "L.LDG / R.LDG" .... **OFF**
- "TAXI" .... **ON**

7 - "OXYGEN" switch .... **OFF**

AMPLIFIED PROCEDURES

SHUT-DOWN (1/2)

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

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

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

3 - Power lever .... **IDLE for 1 minute minimum**
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 $\pm$ 5°C. If BLEED 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.

4 - "TAXI" light .... **OFF**

5 - "AP TRIMS" MASTER switch .... **OFF**

6 - "AVIONICS" MASTER switch .... **START**

7 - ECS panel
- "BLEED" switch .... **OFF**
- Check for cabin depressurization
- "AIR COND" switch .... **OFF**

> **CAUTION**
>
> **IN CASE OF SHUT-DOWN ON A CONTAMINATED AREA :**
>
> - **Condition lever .... CUT OFF**
> - **Propeller governor lever .... FEATHER**

8 - Propeller governor lever .... **FEATHER for 15 seconds**
Keep propeller governor lever on FEATHER position for 15 seconds minimum before shutting down engine.

AMPLIFIED PROCEDURES

SHUT-DOWN (2/2)

9 - Condition lever .... **CUT OFF**

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

11 - "AVIONICS" MASTER switch .... **OFF**

12 - EXT LIGHTS panel
- All switches .... **OFF**

13 - INT LIGHTS panel
- All switches .... **OFF**

14 - Fuel
When fuel pressure is below 10 psi, check "AUX BP" pump is operating.
- "AUX BP" switch .... **OFF**
- "FUEL SEL" switch .... **MAN**
- Tank selector .... **OFF**

15 - "GENERATOR" selector .... **OFF**

16 - "SOURCE" selector .... **OFF**

17 - CRASH lever .... **PUSHED DOWN**

18 - 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")

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 + 13°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, sleed or ice crystals).

2 - Icing conditions also exist when the OAT on the ground is + 13°C or below and when operating on ramps, taxiways or runways where surface snow, ice, standing water or slush may be ingested by the engine or freeze on engine or cowlings.

NOTE :
Refer to Figure 5.5.1 to convert OAT to SAT in flight.
SAT = OAT - 2°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 0 °C < OAT <+ 13 °C :

- "PROP DE ICE" switch . . . . **ON**
- "INERT SEP" switch . . . . **ON**

If – 15 °C < OAT < 0 °C :

- All "DE ICE SYSTEM" switches . . . . **ON**
- "IGNITION" switch . . . . **ON**
- "INERT SEP" switch . . . . **ON**

If – 25 °C < OAT < – 15 °C :

- All "DE ICE SYSTEM" switches . . . . **ON**
- "INERT SEP" switch . . . . **ON**

If OAT < – 25 °C :

- "PROP DE ICE" switch . . . . **ON**
- "INERT SEP" switch . . . . **ON**

When OAT is below – 25 °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.

2 – When operating under IMC :

- All "DE ICE SYSTEM" switches . . . . **ON**
- "IGNITION" switch . . . . **ON**
- "INERT SEP" switch . . . . **ON**

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 :

	Weight	
	< 6579 lbs (2984 kg)	> 6579 lbs (2984 kg)
Flaps UP	130 KIAS	135 KIAS
Flaps TO	110 KIAS	110 KIAS
Flaps LDG	90 KIAS	95 KIAS

- If there is ice on the unprotected surfaces of the airplane, during flight end phase, conduct holding with the flaps up. Use flaps as required for final approach and landing at minimum speeds noted above.

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).

PARTICULAR PROCEDURES

FLIGHT INTO KNOWN ICING CONDITIONS (5/5)

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 5.14 "LANDING DISTANCES".

PARTICULAR PROCEDURES

FLIGHT INTO SEVERE ICING CONDITIONS (1/2)

THE FOLLOWING WEATHER CONDITIONS MAY BE CONDUCIVE TO SEVERE IN-FLIGHT ICING :

- Visible rain at temperatures below 0°C ambient air temperature,
- Droplets that splash or splatter on impact at temperatures below 0°C ambient air temperature.

Procedures for exiting the severe icing environment

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**

PARTICULAR PROCEDURES

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).

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**

PARTICULAR PROCEDURES

UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW (2/2)

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 ≤ 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 β 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 β 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.

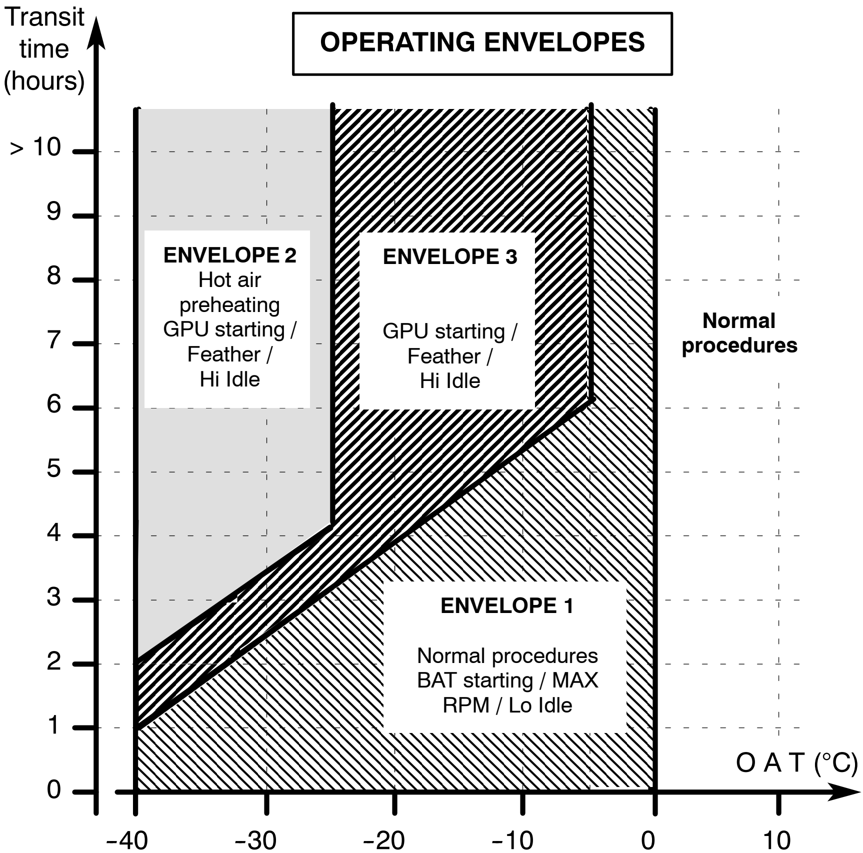


Figure 4.5.1 - OPERATING ENVELOPES BY COLD WEATHER (- 0°C to - 25°C) AND VERY COLD WEATHER (- 25°C to - 40°C)

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 L HTR" switch . . . . **ON**
- "PITOT R & 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 2" 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 door,
- in the R.H. front compartment for the EFIS versions during 10 minutes at the end of the engine preheating.

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".

Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly before takeoff.

3 - Carry out a complete rotation of the propeller to check its free rotation.

4 - 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.

PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (- 0°C TO - 25°C) AND VERY COLD WEATHER (- 25°C TO - 40°C) (5/10)

5 - Remove chocks and / or release ties from the airplane.

6 - Check the free deflection of the flight controls and of the elevator trim.

7 - Check the free deflection of the power lever and of the propeller governor lever.

8 - "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 (V = 28 Volts)**

PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (– 0°C TO – 25°C) AND VERY COLD WEATHER (– 25°C TO – 40°C) (6/10)

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

- Power lever .... **IDLE (Flight idle stop)**
- 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

PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (– 0°C TO – 25°C) AND VERY COLD WEATHER (– 25°C TO – 40°C) (7/10)

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)

8 – "SOURCE" selector . . . . **BAT**

WARNING CAS MESSAGE "BAT OFF" OFF

9 – "IGNITION" switch . . . . **AUTO**

WARNING CAS MESSAGE "IGNITION" OFF

10 – Ground power unit . . . . **HAVE IT DISCONNECTED**

WARNING CAS MESSAGE "GPU DOOR" OFF

11 – "FUEL" panel
– "AUX BP" switch . . . . **AUTO**

WARNING CAS MESSAGE "AUX BOOST PMP ON" OFF

12 – Generator

WARNING CAS MESSAGE "MAIN GEN" OFF
RESET if necessary

PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (– 0°C TO – 25°C) AND VERY COLD WEATHER (– 25°C TO – 40°C) (8/10)

After starting the engine

1 – On "ECS" panel

As soon as the current flow is lower than 100 A :

- "BLEED" switch . . . . **AUTO**
- "CABIN CTRL" selector . . . . **OVERRIDE**
- "CABIN TEMP/°C" selector . . . . **FULL HOT**

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.

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 2" are also applicable for the "envelope 3". However it is possible to start the engine using GPU **without preheating of the engine and the cabin** with a heater. In that case 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 2.

After starting the engine

1 – On "ECS" panel

As soon as the current flow is lower than 100 A :

- "BLEED" switch . . . . **AUTO**
- "CABIN CTRL" selector . . . . **OVERRIDE**
- "CABIN TEMP/°C" 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.

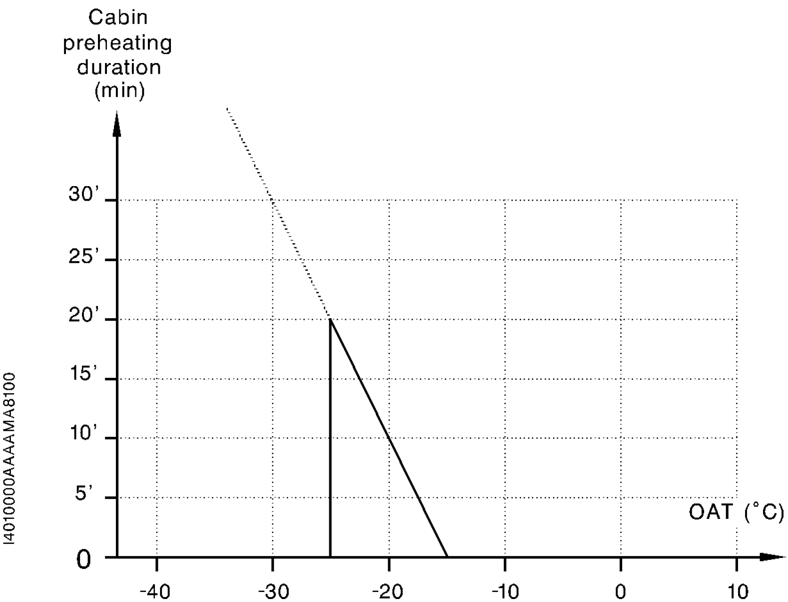


Figure 4.5.2 - PREHEATING DURATION

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 :

- $\Delta V = \dfrac{(\text{WIND DOWN} - 10)}{2}$ (Ex. WIND DOWN = 30 kt i.e. ΔV = 10 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 5.14, 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 planing 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 data on the self test page.
- 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).

  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.

  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

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

5.1 - GENERAL

This Section provides all of the required and additional performance data for airplane operations.

The Section 9, "Supplements" of the Pilot's Operating Handbook, provides specific airplane performance associated with optional equipment and systems.

5.2 - NOISE LEVEL

	Maximum noise level permissible	Demonstrated noise level
FAR PART 36, Appendix G - Amdt 25	**88 dB(A)**	**79.6 dB(A)**
ICAO, Annex 16, Vol. 1, 3rd edition, Amdt 8 Chapter 10, Appendix 6	**85 dB(A)**	**79.2 dB(A)**

Approved noise levels for TBM 850 are stated in EASA.A.010 Type Certificate Data Sheet.

NOTE :
No determination has been made by the Federal Aviation Administration that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into or out of any airport.

5.3 - AIRSPEED CALIBRATION

NOTE :
Indicated airspeeds (IAS) : instrument error supposed to be null (power configuration for cruise condition flight).

FLAPS UP LDG GR UP		FLAPS TO LDG GR DN		FLAPS LDG LDG GR DN	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
125	128	70	69	60	58
150	154	80	80	70	68
175	179	90	90	80	78
200	205	100	101	90	88
225	230	120	121	100	98
250	255	140	141	110	108
266	271	160	162	120	118
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	147	81	79	69	67
173	177	92	92	81	78
201	206	104	104	92	90
230	236	115	116	104	101
259	264	138	139	115	113
288	293	161	162	127	124
307	312	184	187	138	136

Figure 5.3.1 - NORMAL STATIC SOURCE

FLAPS UP LDG GR UP		FLAPS TO LDG GR DN		FLAPS LDG LDG GR DN	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
125	124	70	70	60	59
150	149	80	80	70	69
175	174	90	90	80	79
200	199	100	100	90	90
225	224	120	120	100	100
250	249	140	139	110	110
271	270	160	159	120	120
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	142	81	81	69	68
173	171	92	92	81	79
201	200	104	104	92	91
230	229	115	115	104	104
259	258	138	138	115	115
288	287	161	160	127	127
312	311	184	183	138	138

Figure 5.3.2 - ALTERNATE STATIC SOURCE (BLEED AUTO)

5.4 - CABIN PRESSURIZATION ENVELOPE

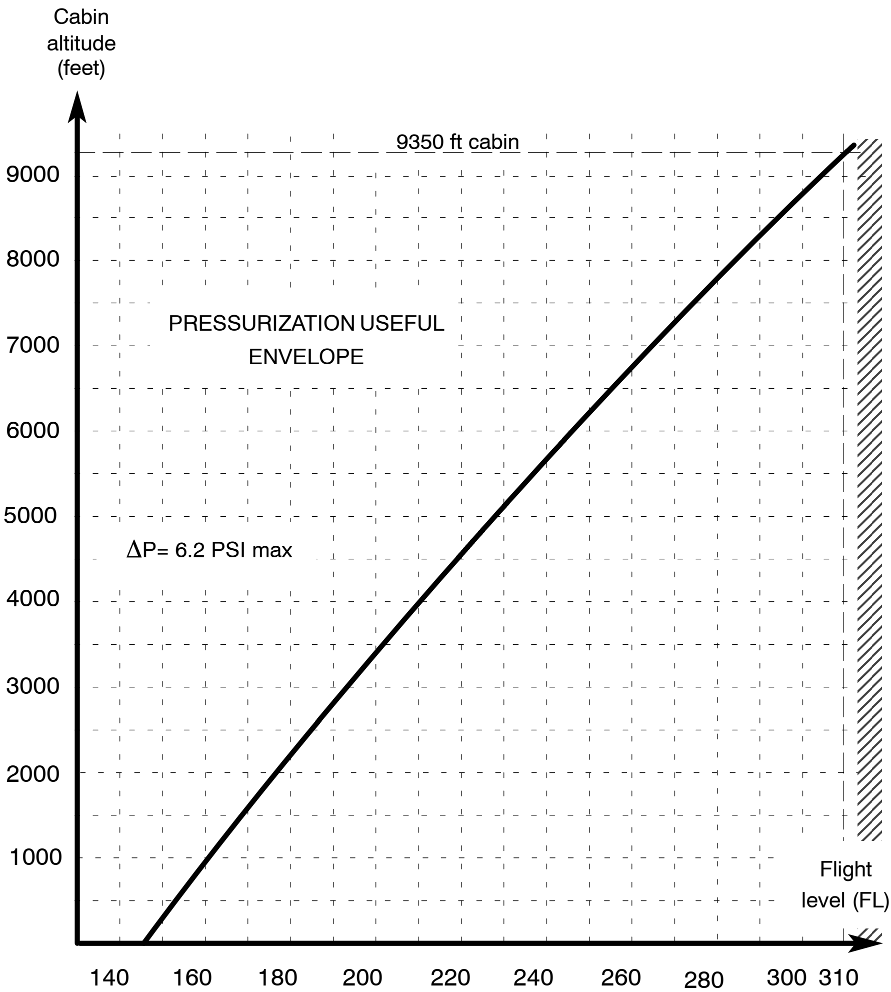


Figure 5.4.1 - CABIN PRESSURIZATION ENVELOPE

5.5 - SAT - OAT CONVERSIONS

NOTE :
These indicated temperatures are available for stabilized cruise at normal operating power.

Pressure altitude (feet)	ISA – 20°C		ISA – 10°C		ISA		ISA + 10°C		ISA + 20°C	
	SAT	OAT	SAT	OAT	SAT	OAT	SAT	OAT	SAT	OAT
SL	– 05	– 04	05	06	15	16	25	26	35	36
2000	– 09	– 08	01	02	11	12	21	22	31	32
4000	– 13	– 12	– 03	– 02	07	08	17	18	27	28
6000	– 17	– 16	– 07	– 06	03	04	13	14	23	24
8000	– 21	– 20	– 11	– 10	– 01	00	09	10	19	20
10000	– 25	– 24	– 15	– 14	– 05	– 04	05	06	15	16
12000	– 29	– 28	– 19	– 18	– 09	– 08	01	02	11	12
14000	– 33	– 32	– 23	– 22	– 13	– 12	– 03	– 02	07	08
16000	– 37	– 36	– 27	– 26	– 17	– 16	– 07	– 06	03	04
18000	– 41	– 40	– 31	– 30	– 21	– 20	– 11	– 10	– 01	00
20000	– 45	– 44	– 35	– 34	– 25	– 24	– 15	– 14	– 05	– 04
22000	– 49	– 48	– 39	– 38	– 29	– 28	– 19	– 18	– 09	– 08
24000	– 53	– 52	– 43	– 42	– 33	– 32	– 23	– 22	– 13	– 12
26000	– 57	– 56	– 47	– 46	– 37	– 36	– 27	– 26	– 17	– 16
28000	– 61	– 60	– 51	– 50	– 41	– 40	– 31	– 30	– 21	– 20
30000	– 65	– 64	– 55	– 54	– 45	– 44	– 35	– 34	– 25	– 24
31000	– 67	– 66	– 57	– 56	– 47	– 46	– 37	– 36	– 27	– 26

Figure 5.5.1 - SAT - OAT CONVERSIONS

5.6 - STALL SPEEDS

AIRPLANE WEIGHT	CONFIG. FLIGHT IDLE		BANK 0°			BANK 30°			BANK 45°			BANK 60°		
	LDG GR	Flaps	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS
4850 lbs (2200 kg)	UP	UP	65	66	75	70	71	81	78	79	90	91	93	105
	DN	TO	62	63	71	67	68	77	73	75	84	87	89	100
	DN	LDG	53	53	61	57	57	66	63	63	73	75	75	86
5512 lbs (2500 kg)	UP	UP	70	71	81	75	76	86	82	84	94	98	100	113
	DN	TO	66	67	76	71	72	82	78	80	90	93	95	107
	DN	LDG	57	57	66	61	61	70	68	68	78	81	81	93
6579 lbs (2984 kg)	UP	UP	75	76	86	80	82	92	88	90	101	105	107	121
	DN	TO	71	72	82	75	77	86	84	86	97	100	102	115
	DN	LDG	61	61	70	66	66	76	73	73	84	86	86	99
7394 lbs (3354 kg)	UP	UP	81	83	93	88	89	101	97	99	112	119	117	137
	DN	TO	77	77	89	81	83	93	91	92	105	108	109	124
	DN	LDG	65	65	75	69	70	79	76	77	88	92	92	106

Figure 5.6.1 - STALL SPEEDS

5.7 - WIND COMPONENTS

EXAMPLE :	Angle between wind direction and flight path	:	50 °
	Headwind	:	8 kts
	Crosswind	:	10 kts
	Wind speed	:	13 kts

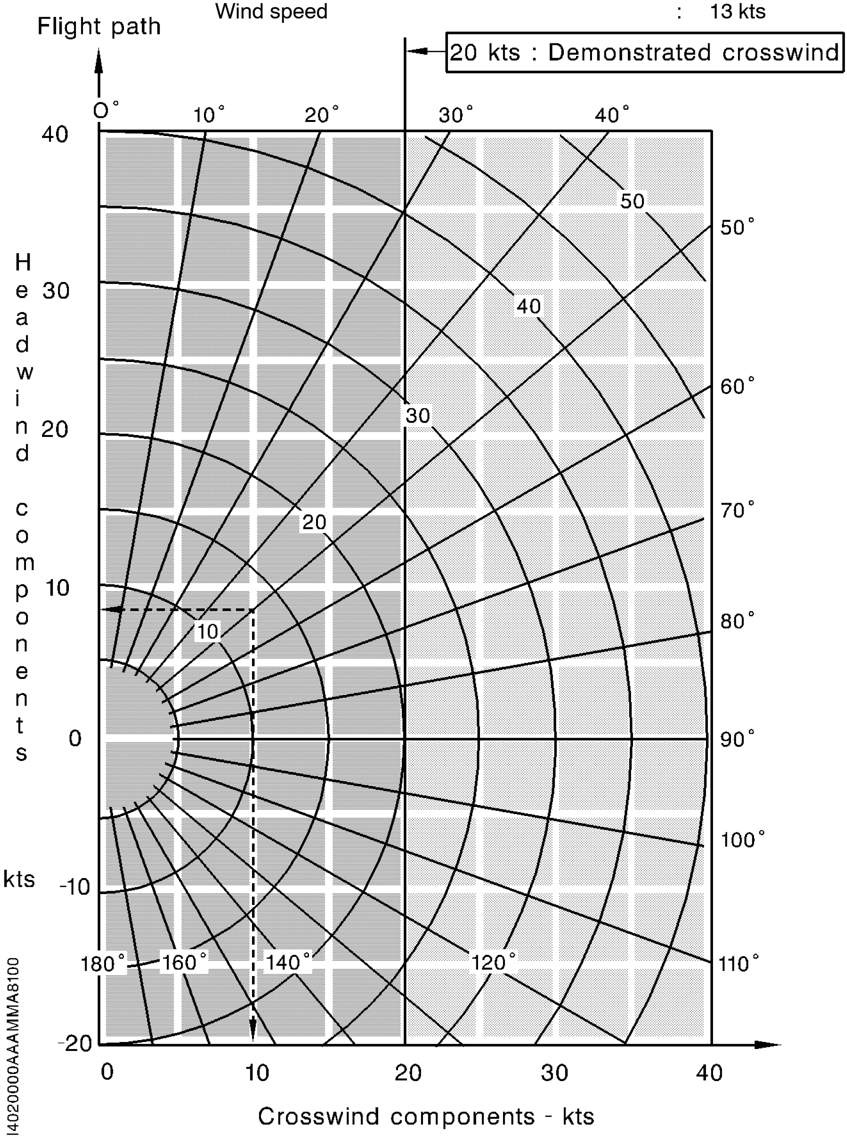


Figure 5.7.1 - WIND COMPONENTS

5.8 - ENGINE OPERATION

The following tables or/and the optimum torque indicator must be used during normal operation of the airplane.

IMPORTANT

It is the responsibility of the Operator to make sure that the required version of Garmin System Software is installed prior to using the hereafter Engine Operation tables.
The Garmin System Software required for this revision of the Engine Operation tables is the version 0719.06 or later.
This information is displayed on the MFD Power-up page upon system start.

The following conditions are given :

- Np = 2000 RPM,
- BLEED AUTO.

The torque must be set at or below the value corresponding to the local conditions of flight level and temperature.

NOTE :
Inertial separator must be OFF and bleed not high.

Example : for FL = 260 and OAT = - 22°C, the following tables give the maximum torque to be set.

Maximum climb power : TRQ = 92 % for IAS = 130 KIAS
(Add 1 % of TRQ for each additional 10 KIAS on climb airspeed)
(cf. tables Figures 5.8.1 and 5.8.1A)

Climb at 700 SHP power : TRQ = 92 % for IAS = 130 KIAS
(Add 1 % of TRQ for each additional 10 KIAS on climb airspeed)
(cf. tables Figures 5.8.2 and 5.8.2A)

Maximum cruise power : TRQ = 108 %
(cf. tables Figures 5.8.3 and 5.8.3A)

Recommended cruise power : TRQ = 103 %
(cf. tables Figures 5.8.4 and 5.8.4A)

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR NP = 2000 RPM.
WHEN SETTING TRQ, NG MUST NEVER EXCEED 104 %

REMARK :
The engine ITT limit at 840°C during continuous operation may be used in case of operational need.

ENGINE OPERATION

Conditions : ***Maximum climb power (FL ≤ 200)*** ▭ ISA
Landing gear and flaps UP
IAS = 130 KIAS - Np = 2000 RPM - BLEED AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 24											
- 22											121
- 20											120
- 18			**TRQ = 121 %**								118
- 16										121	117
- 14										120	115
- 12										118	114
- 10									121	117	112
- 08									120	115	109
- 06									118	113	108
- 04								121	116	111	106
- 02								119	114	109	104
+ 0							121	117	112	106	101
+ 02							120	115	109	103	97
+ 04							118	112	106	100	95
+ 06						121	115	109	103	97	92
+ 08					121	117	112	106	100	95	89
+ 10					120	114	108	103	97	92	87
+ 12				121	117	111	106	100	94	89	84
+ 14				119	114	108	102	97	91	86	
+ 16			121	116	111	105	99	94	88		
+ 18			119	113	107	102	96	91			
+ 20		121	115	109	104	98	93				
+ 22	121	117	111	106	100	95					
+ 24	119	114	108	103	97						
+ 26	116	110	105	99							
+ 28	112	107	101								
+ 30	109	103									
+ 32	105										

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.1 - 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 AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 66								116	110	105	100	95
- 64							121	114	109	104	99	94
- 62							119	113	108	103	98	93
- 60							118	112	107	102	97	92
- 58							116	111	106	100	96	91
- 56						121	115	109	104	99	94	90
- 54		**TRQ = 121 %**				120	114	108	103	98	93	89
- 52						118	113	107	102	97	92	88
- 50						117	111	106	101	96	91	87
- 48					121	115	110	104	100	95	90	86
- 46					119	114	108	103	99	94	89	85
- 44					118	112	107	102	97	93	88	84
- 42				121	116	111	106	101	96	92	87	83
- 40				120	115	110	105	100	95	90	86	82
- 38				118	113	108	103	98	94	89	85	80
- 36			121	117	112	107	102	97	92	88	83	79
- 34			120	115	110	106	101	96	91	87	82	78
- 32			119	114	109	104	99	95	90	86	81	77
- 30		121	117	112	107	103	98	93	89	84	80	76
- 28		120	115	111	106	102	97	92	87	83	79	75
- 26		119	114	109	105	100	95	91	86	82	77	73
- 24		118	113	108	103	99	94	89	85	80	76	72
- 22	121	116	111	107	102	98	92	88	83	79	74	70
- 20	120	115	110	105	101	96	91	87	82	77	72	68
- 18	118	113	109	104	99	95	89	85	80	75	71	66
- 16	117	112	107	102	98	93	88	83	78	73	69	64
- 14	115	110	105	100	96	91	86	81	76	71	67	62
- 12	114	108	103	98	94	89	84	79	74	69	64	
- 10	112	106	101	97	92	87	82	77	72	67	62	
- 08	109	104	100	95	90	85	79	74	69	65		
- 06	108	103	98	92	87	82	77	72	67			
- 04	106	101	95	90	85	79	74	70	65			
- 02	104	98	92	87	82	77	72	68				
+ 0	101	95	89	84	79	75	70					
+ 02	97	92	87	82	77	72						
+ 04	95	89	85	80	75							
+ 06	92	87	82	77								
+ 08	89	84	79									
+ 10	87	81										
+ 12	84											

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.1A - ENGINE OPERATION
[Maximum climb power (FL ≥ 200)]

ENGINE OPERATION

Conditions : ***Climb at 700 SHP power (FL ≤ 200)*** ☐ ISA
Landing gear and flaps UP
IAS = 130 KIAS - Np = 2000 RPM - BLEED AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 24											
- 22											
- 20											
- 18			**TRQ = 100 %**								
- 16											
- 14											
- 12											
- 10											
- 08											
- 06											
- 04											
- 02											
+ 0											100
+ 02											97
+ 04										100	95
+ 06										97	92
+ 08									100	95	89
+ 10									97	92	87
+ 12								100	94	89	84
+ 14							100	97	91	86	
+ 16							99	94	88		
+ 18						100	96	91			
+ 20						98	93				
+ 22					100	95					
+ 24				100	97						
+ 26				99							
+ 28			100								
+ 30		100									
+ 32	100										

Figure 5.8.2 - ENGINE OPERATION
[Climb at 700 SHP power (FL ≤ 200)]

ENGINE OPERATION

Conditions : ***Climb at 700 SHP power (FL ≥ 200)*** ☐ ISA
Landing gear and flaps UP
IAS = 130 KIAS - Np = 2000 RPM - BLEED AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 66											100	95
- 64											99	94
- 62											98	93
- 60											97	92
- 58										100	96	91
- 56										99	94	90
- 54		**TRQ = 100 %**								98	93	89
- 52										97	92	88
- 50										96	91	87
- 48									100	95	90	86
- 46									99	94	89	85
- 44									97	93	88	84
- 42									96	92	87	83
- 40								100	95	90	86	82
- 38								98	94	89	85	80
- 36								97	92	88	83	79
- 34							100	96	91	87	82	78
- 32							99	95	90	86	81	77
- 30							98	93	89	84	80	76
- 28							97	92	87	83	79	75
- 26						100	95	91	86	82	77	73
- 24						99	94	89	85	80	76	72
- 22						98	92	88	83	79	74	70
- 20					100	96	91	87	82	77	72	68
- 18					99	95	89	85	80	75	71	66
- 16					98	93	88	83	78	73	69	64
- 14				100	96	91	86	81	76	71	67	62
- 12				98	94	89	84	79	74	69	64	
- 10				97	92	87	82	77	72	67	62	
- 08			100	95	90	85	79	74	69	65		
- 06			98	92	87	82	77	72	67			
- 04		100	95	90	85	79	74	70	65			
- 02		98	92	87	82	77	72	68				
+ 0	100	95	89	84	79	75	70					
+ 02	97	92	87	82	77	72						
+ 04	95	89	85	80	75							
+ 06	92	87	82	77								
+ 08	89	84	79									
+ 10	87	81										
+ 12	84											

Figure 5.8.2A - ENGINE OPERATION
[Climb at 700 SHP power (FL ≥ 200)]

ENGINE OPERATION

Conditions : ***Maximum cruise power (FL ≤ 200)*** ☐ ISA
Landing gear and flaps UP
Np = 2000 RPM - BLEED AUTO

NOTE : Use preferably recommended cruise power.
This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 24											
- 22											
- 20											
- 18		TRQ = 121 %									
- 16											
- 14											
- 12											
- 10											
- 08											
- 06											
- 04											
- 02											121
+ 0											120
+ 02										121	116
+ 04										119	113
+ 06									121	116	110
+ 08									119	113	107
+ 10								121	116	110	104
+ 12								119	113	106	100
+ 14							121	115	109	103	97
+ 16							118	112	106	100	
+ 18						121	115	108	103		
+ 20					121	118	111	105			
+ 22					120	114	108				
+ 24				121	117	111					
+ 26				119	113						
+ 28			121	115							
+ 30		121	117								
+ 32	121	120									

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM.
WHEN SETTING TRQ, NG MUST NEVER EXCEED 104 %

Figure 5.8.3 - 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 AUTO

NOTE : Use preferably recommended cruise power.
This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

TRQ = 121 %

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 66										117	112	107
- 64										116	111	106
- 62										115	110	106
- 60									121	114	109	105
- 58									120	113	108	104
- 56									119	112	107	103
- 54									118	111	106	102
- 52								121	117	110	105	101
- 50								120	116	109	104	100
- 48								119	114	108	103	99
- 46								118	113	107	102	98
- 44								117	112	106	101	96
- 42							121	116	111	105	100	95
- 40							120	115	110	104	99	93
- 38							119	114	109	102	97	92
- 36							118	112	107	101	96	91
- 34						121	116	111	106	100	95	89
- 32						120	115	110	105	99	93	88
- 30						119	114	109	103	97	92	86
- 28						118	113	108	101	96	90	85
- 26						117	112	106	100	94	89	84
- 24					121	116	110	104	98	93	87	82
- 22					120	114	108	102	96	91	85	80
- 20					118	112	106	100	95	89	83	78
- 18				121	116	110	104	99	93	87	81	76
- 16				120	114	108	102	96	90	84	79	74
- 14				118	112	106	100	94	88	82	77	71
- 12			121	116	110	104	98	92	86	80	74	69
- 10			120	114	108	102	95	90	83	77	72	66
- 08		121	117	111	105	99	93	86	80	75	69	64
- 06		120	115	109	103	96	90	84	78	72	67	
- 04		119	113	106	100	93	87	81	75	70		
- 02	121	116	109	103	97	91	84	79	73			
+ 0	120	113	106	100	94	88	82	76				
+ 02	116	109	103	97	91	85	79					
+ 04	113	107	100	94	88	82						
+ 06	110	104	97	91	85							
+ 08	107	101	94	88								
+ 10	104	97	91									
+ 12	100	94										
+ 14	97											

CAUTION
THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM
WHEN SETTING TRQ, NG MUST NEVER EXCEED 104 %

Figure 5.8.3A - 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 AUTO

NOTE : This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 24											
- 22											
- 20											
- 18		**TRQ = 121 %**									
- 16											
- 14											
- 12											
- 10											
- 08											121
- 06											120
- 04										121	117
- 02										120	114
+ 0										117	111
+ 02									121	114	108
+ 04								121	117	111	105
+ 06								120	114	108	101
+ 08							121	117	110	104	98
+ 10							120	113	107	101	95
+ 12						121	116	110	104	98	92
+ 14						119	113	106	100	95	89
+ 16					121	115	109	103	97	91	
+ 18				121	118	112	106	99	94		
+ 20				120	114	108	102	96			
+ 22			121	117	111	105	99				
+ 24			119	113	107	101					
+ 26		121	115	109	103						
+ 28	121	118	111	106							
+ 30	120	114	108								
+ 32	116	110									

CAUTION

THE TRQ MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.4 - 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 AUTO

NOTE : This table is not valid if INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 66									118	113	108	103
- 64									117	112	107	102
- 62									116	111	106	101
- 60								121	115	110	105	100
- 58								120	114	109	104	99
- 56		**TRQ = 121 %**						118	113	108	103	98
- 54							121	116	112	107	102	97
- 52							120	115	111	106	100	96
- 50							119	114	110	104	99	95
- 48							118	113	109	103	98	94
- 46							117	112	108	102	97	93
- 44						121	116	111	107	101	96	92
- 42						120	115	110	105	100	95	91
- 40						118	114	109	104	99	94	89
- 38						117	113	108	103	97	93	88
- 36						116	112	106	101	96	92	86
- 34						115	110	105	100	95	90	85
- 32					121	114	109	104	99	94	89	84
- 30					120	113	108	103	98	93	87	82
- 28					118	112	107	102	97	91	86	81
- 26					116	111	106	101	95	89	84	79
- 24				121	115	110	105	99	93	88	82	77
- 22				119	114	108	103	97	91	86	80	75
- 20				117	112	107	101	95	89	84	78	73
- 18			121	115	110	105	99	93	87	81	76	70
- 16			117	114	108	102	97	91	85	79	73	68
- 14			116	112	106	101	94	88	82	76	71	65
- 12		121	114	110	104	98	92	85	79	74	68	63
- 10		119	113	108	101	95	89	83	77	71	66	61
- 08	121	117	111	104	98	92	86	80	75	69	64	58
- 06	120	114	108	101	95	89	83	78	72	66	61	
- 04	117	111	105	98	92	87	81	75	69	64		
- 02	114	108	102	96	90	84	78	72	66			
+ 0	111	105	99	93	87	81	75	70				
+ 02	108	102	96	90	84	78	72					
+ 04	105	99	93	87	81	75						
+ 06	101	95	90	84	78							
+ 08	98	92	87	81								
+ 10	95	89	84									
+ 12	92	86										
+ 14	89											

CAUTION
THE TRQ MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.4A - ENGINE OPERATION
[Normal (recommended) cruise power (FL ≥ 200)]

5.8 - ENGINE OPERATION

The following tables or/and the optimum torque indicator must be used during normal operation of the airplane.

The following conditions are given :

- Np = 2000 RPM,
- BLEED AUTO.

The torque must be set at or below the value corresponding to the local conditions of flight level and temperature.

NOTE :
Inertial separator must be OFF and bleed not high.

Example : for FL = 260 and OAT = – 21°C, the following tables give the maximum torque to be set.

Maximum climb power : TRQ = 92 % for IAS = 130 KIAS
(Add 1 % of TRQ for each additional 10 KIAS on climb airspeed)
(cf. tables Figures 5.8.1 and 5.8.1A)

Climb at 700 SHP power : TRQ = 92 % for IAS = 130 KIAS
(Add 1 % of TRQ for each additional 10 KIAS on climb airspeed)
(cf. tables Figures 5.8.2 and 5.8.2A)

Maximum cruise power : TRQ = 106 %
(cf. tables Figures 5.8.3 and 5.8.3A)

Recommended cruise power : TRQ = 101 %
(cf. tables Figures 5.8.4 and 5.8.4A)

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR NP = 2000 RPM.
WHEN SETTING TRQ, NG MUST NEVER EXCEED 104 %

REMARK :
The engine ITT limit at 840°C during continuous operation may be used in case of operational need.

ENGINE OPERATION

Conditions : ***Maximum climb power (FL ≤ 200)*** ☐ ISA
Landing gear and flaps UP
IAS = 130 KIAS - Np = 2000 RPM - BLEED AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 23											
- 21											121
- 19											120
- 17		**TRQ = 121 %**									118
- 15										121	117
- 13										120	115
- 11										118	114
- 09									121	117	112
- 07									120	115	109
- 05									118	113	108
- 03								121	116	111	106
- 01								119	114	109	104
+ 01							121	117	112	106	101
+ 03							120	115	109	103	97
+ 05							118	112	106	100	95
+ 07						121	115	109	103	97	92
+ 09					121	117	112	106	100	95	89
+ 11					120	114	108	103	97	92	87
+ 13				121	117	111	106	100	94	89	84
+ 15				119	114	108	102	97	91	86	
+ 17			121	116	111	105	99	94	88		
+ 19			119	113	107	102	96	91			
+ 21		121	115	109	104	98	93				
+ 23	121	117	111	106	100	95					
+ 25	119	114	108	103	97						
+ 27	116	110	105	99							
+ 29	112	107	101								
+ 31	109	103									
+ 33	105										

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.1 - 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 AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 65								116	110	105	100	95
- 63							121	114	109	104	99	94
- 61							119	113	108	103	98	93
- 59							118	112	107	102	97	92
- 57							116	111	106	100	96	91
- 55						121	115	109	104	99	94	90
- 53		**TRQ = 121 %**				120	114	108	103	98	93	89
- 51						118	113	107	102	97	92	88
- 49						117	111	106	101	96	91	87
- 47					121	115	110	104	100	95	90	86
- 45					119	114	108	103	99	94	89	85
- 43					118	112	107	102	97	93	88	84
- 41				121	116	111	106	101	96	92	87	83
- 39				120	115	110	105	100	95	90	86	82
- 37				118	113	108	103	98	94	89	85	80
- 35			121	117	112	107	102	97	92	88	83	79
- 33			120	115	110	106	101	96	91	87	82	78
- 31			119	114	109	104	99	95	90	86	81	77
- 29		121	117	112	107	103	98	93	89	84	80	76
- 27		120	115	111	106	102	97	92	87	83	79	75
- 25		119	114	109	105	100	95	91	86	82	77	73
- 23		118	113	108	103	99	94	89	85	80	76	72
- 21	121	116	111	107	102	98	92	88	83	79	74	70
- 19	120	115	110	105	101	96	91	87	82	77	72	68
- 17	118	113	109	104	99	95	89	85	80	75	71	66
- 15	117	112	107	102	98	93	88	83	78	73	69	64
- 13	115	110	105	100	96	91	86	81	76	71	67	62
- 11	114	108	103	98	94	89	84	79	74	69	64	
- 09	112	106	101	97	92	87	82	77	72	67	62	
- 07	109	104	100	95	90	85	79	74	69	65		
- 05	108	103	98	92	87	82	77	72	67			
- 03	106	101	95	90	85	79	74	70	65			
- 01	104	98	92	87	82	77	72	68				
+ 01	101	95	89	84	79	75	70					
+ 03	97	92	87	82	77	72						
+ 05	95	89	85	80	75							
+ 07	92	87	82	77								
+ 09	89	84	79									
+ 11	87	81										
+ 13	84											

CAUTION
THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.1A - ENGINE OPERATION
[Maximum climb power (FL ≥ 200)]

ENGINE OPERATION

Conditions : ***Climb at 700 SHP power (FL ≤ 200)*** ISA
Landing gear and flaps UP
IAS = 130 KIAS - Np = 2000 RPM - BLEED AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 23											
- 21											
- 19											
- 17		**TRQ = 100 %**									
- 15											
- 13											
- 11											
- 09											
- 07											
- 05											
- 03											
- 01											
+ 01											100
+ 03											97
+ 05										100	95
+ 07										97	92
+ 09									100	95	89
+ 11									97	92	87
+ 13								100	94	89	84
+ 15							100	97	91	86	
+ 17							99	94	88		
+ 19						100	96	91			
+ 21						98	93				
+ 23					100	95					
+ 25				100	97						
+ 27				99							
+ 29			100								
+ 31		100									
+ 33	100										

Figure 5.8.2 - ENGINE OPERATION
[Climb at 700 SHP power (FL ≤ 200)]

ENGINE OPERATION

Conditions : ***Climb at 700 SHP power (FL ≥ 200)*** ☐ ISA
Landing gear and flaps UP
IAS = 130 KIAS - Np = 2000 RPM - BLEED AUTO

NOTE : Add 1 % of TRQ for each additional 10 KCAS on climb airspeed.
This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 65											100	95
- 63											99	94
- 61											98	93
- 59											97	92
- 57										100	96	91
- 55										99	94	90
- 53		TRQ = 100 %								98	93	89
- 51										97	92	88
- 49										96	91	87
- 47									100	95	90	86
- 45									99	94	89	85
- 43									97	93	88	84
- 41									96	92	87	83
- 39								100	95	90	86	82
- 37								98	94	89	85	80
- 35								97	92	88	83	79
- 33							100	96	91	87	82	78
- 31							99	95	90	86	81	77
- 29							98	93	89	84	80	76
- 27							97	92	87	83	79	75
- 25						100	95	91	86	82	77	73
- 23						99	94	89	85	80	76	72
- 21						98	92	88	83	79	74	70
- 19					100	96	91	87	82	77	72	68
- 17					99	95	89	85	80	75	71	66
- 15					98	93	88	83	78	73	69	64
- 13				100	96	91	86	81	76	71	67	62
- 11				98	94	89	84	79	74	69	64	
- 09				97	92	87	82	77	72	67	62	
- 07			100	95	90	85	79	74	69	65		
- 05			98	92	87	82	77	72	67			
- 03		100	95	90	85	79	74	70	65			
- 01		98	92	87	82	77	72	68				
+ 01	100	95	89	84	79	75	70					
+ 03	97	92	87	82	77	72						
+ 05	95	89	85	80	75							
+ 07	92	87	82	77								
+ 09	89	84	79									
+ 11	87	81										
+ 13	84											

Figure 5.8.2A - ENGINE OPERATION
[Climb at 700 SHP power (FL ≥ 200)]

ENGINE OPERATION

Conditions : ***Maximum cruise power (FL ≤ 200)*** ☐ ISA
Landing gear and flaps UP
Np = 2000 RPM - BLEED AUTO

NOTE : Use preferably recommended cruise power.
This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 23											
- 21											
- 19											
- 17		TRQ = 121 %									
- 15											
- 13											
- 11											
- 09											
- 07											
- 05											
- 03											
- 01											121
+ 02											120
+ 03										121	117
+ 05										120	114
+ 07									121	117	111
+ 09									120	114	107
+ 11								121	117	110	104
+ 13								119	113	107	101
+ 15							121	115	110	104	97
+ 17							118	112	106	100	
+ 19						121	115	108	103		
+ 21					121	118	111	105			
+ 23					120	114	108				
+ 25				121	117	111					
+ 27				119	113						
+ 29			121	115							
+ 31		121	117								
+ 33	121	120									

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM.
WHEN SETTING TRQ, NG MUST NEVER EXCEED 104 %

Figure 5.8.3 - 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 AUTO

NOTE : Use preferably recommended cruise power.
This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 65										117	112	107
- 63										116	111	106
- 61										115	110	106
- 59									121	114	109	105
- 57									120	113	108	104
- 55									119	112	107	103
- 53									118	111	106	102
- 51			**TRQ = 121 %**					121	117	110	105	101
- 49								120	116	109	104	100
- 47								119	114	108	103	99
- 45								118	113	107	102	98
- 43								117	112	106	101	97
- 41							121	116	111	105	100	96
- 39							120	115	110	104	99	95
- 37							119	114	109	102	98	94
- 35							118	112	107	101	97	93
- 33						121	116	111	106	100	96	91
- 31						120	115	110	105	99	95	90
- 29						119	114	109	103	98	94	89
- 27						118	113	108	101	97	93	87
- 25						117	112	106	100	95	92	86
- 23					121	116	110	104	99	94	90	84
- 21					120	114	108	102	97	92	88	83
- 19					118	112	106	100	96	91	86	81
- 17				121	116	110	104	99	95	89	84	79
- 15				120	114	108	102	98	93	88	82	77
- 13				118	112	106	101	96	91	85	79	61
- 11			121	116	110	104	100	94	88	82	77	58
- 09			120	114	108	103	98	91	85	80	61	56
- 07		121	117	112	107	101	95	89	83	77	58	53
- 05		120	115	110	104	98	92	86	80	75	56	
- 03		119	113	107	101	95	89	84	78	59		
- 01	121	117	110	104	98	92	87	81	75			
+ 01	120	113	107	101	95	90	84	78				
+ 03	117	110	104	99	93	87	81					
+ 05	114	108	101	95	90	84						
+ 07	111	104	98	92	87							
+ 09	107	101	95	89								
+ 11	104	98	92									
+ 13	101	95										

CAUTION

THE TRQ SETTING MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM
WHEN SETTING TRQ, NG MUST NEVER EXCEED 104 %

Figure 5.8.3A - 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 AUTO

NOTE : This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)										
OAT	100	110	120	130	140	150	160	170	180	190	200
- 23											
- 21											
- 19											
- 17		**TRQ = 121 %**									
- 15											
- 13											
- 11											
- 09											
- 07											121
- 05											120
- 03										121	117
- 01										120	114
+ 01										117	111
+ 03									121	114	108
+ 05								121	118	111	105
+ 07								120	114	108	101
+ 09							121	117	110	104	98
+ 11							120	113	107	101	95
+ 13						121	116	110	104	98	92
+ 15						119	113	106	100	95	89
+ 17					121	115	109	103	97	91	
+ 19				121	118	112	106	99	94		
+ 21				120	114	108	102	96			
+ 23			121	117	111	105	99				
+ 25			119	113	107	101					
+ 27		121	115	109	104						
+ 29	121	118	112	106							
+ 31	120	114	108								
+ 33	116	110									

CAUTION

THE TRQ MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.4 - 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 AUTO

NOTE : This table is not valid IF INERTIAL SEPARATOR ON and/or BLEED HIGH.

T° (°C)	FLIGHT LEVEL (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
- 65									118	113	108	103
- 63									117	112	107	102
- 61									116	111	106	101
- 59								121	115	110	105	100
- 57								120	114	109	104	99
- 55			TRQ = 121 %					118	113	108	103	98
- 53							121	116	112	107	102	97
- 51							120	115	111	106	100	96
- 49							119	114	110	104	99	95
- 47							118	113	109	103	98	94
- 45							117	112	108	102	97	93
- 43						121	116	111	107	101	96	92
- 41						120	115	110	105	100	95	91
- 39						118	114	109	104	99	94	90
- 37						117	113	108	103	97	93	89
- 35						116	112	106	101	96	92	88
- 33						115	110	105	100	95	91	87
- 31					121	114	109	104	99	94	90	86
- 29					120	113	108	103	98	93	89	85
- 27					118	112	107	102	97	92	88	83
- 25					116	111	106	101	96	91	87	81
- 23				121	115	110	105	100	95	89	85	80
- 21				119	114	108	103	98	94	87	83	78
- 19				117	112	107	101	95	91	86	81	76
- 17			121	115	110	105	99	94	89	84	78	60
- 15			117	114	109	104	98	93	87	81	76	57
- 13			116	113	108	101	96	90	84	78	61	55
- 11		121	114	112	107	99	93	87	81	76	58	52
- 09		120	113	108	104	96	90	84	79	73	55	50
- 07	121	117	111	105	100	93	87	82	77	58	52	47
- 05	120	114	108	102	96	91	85	79	74	55		
- 03	117	111	105	99	93	88	82	77	71			
- 01	114	108	102	96	91	85	79	74	55			
+ 01	111	105	99	93	88	82	76	71				
+ 03	107	102	96	90	85	79	74					
+ 05	105	99	93	87	82	76						
+ 07	101	95	90	84	79							
+ 09	98	92	87	82								
+ 11	95	90	84									
+ 13	92	87										

CAUTION

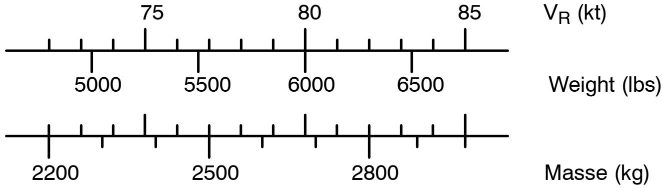
THE TRQ MUST NEVER EXCEED 121.4 % FOR Np = 2000 RPM

Figure 5.8.4A - ENGINE OPERATION
[Normal (recommended) cruise power (FL ≥ 200)]

5.9 - TAKEOFF DISTANCES

WEIGHT : 5512 lbs (2500 kg)

Associated conditions :
- Landing gear DN and flaps TO
- 15° of attitude - TRQ = 100 %
- Np = 2000 RPM - BLEED AUTO
- Hard, dry and level runway
- GR = Ground roll (in ft)
- D_{50} = Takeoff distance (clear to 50 ft) (in ft)
- Rotation speed choice (V_R)



WEIGHT : 5512 lbs (2500 kg)   At 50 ft = 91 KIAS - 105 MPH IAS

PRESSURE ALTITUDE ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	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 5.9.1 - TAKEOFF DISTANCES - 5512 lbs (2500 kg)

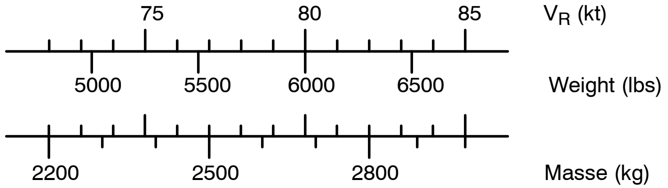
Corrections :
. Reduce total distances of 10 % every 10 kts of headwind
. Increase total distances of 30 % every 10 kts of rear wind
. Increase by : 7 % on hard sod; 10 % on short grass; 15 % on wet runway; 25 % on high grass; 30 % on slippery runway

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 to AUTO.

TAKEOFF DISTANCES

WEIGHT : 6579 lbs (2984 kg)

Associated conditions :
- Landing gear DN and flaps TO
- 15° of attitude – TRQ = 100 %
- Np = 2000 RPM – BLEED AUTO
- Hard, dry and level runway
- GR = Ground roll (in ft)
- D_{50} = Takeoff distance (clear to 50 ft) (in ft)
- Rotation speed choice (V_R)



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 5.9.2 – TAKEOFF DISTANCES – 6579 lbs (2984 kg)

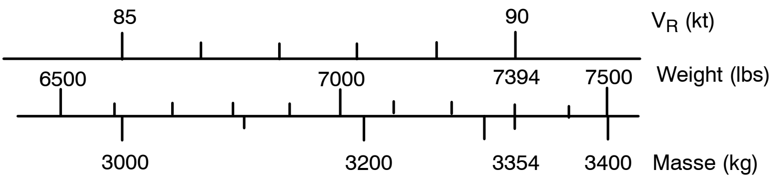
Corrections :
- Reduce total distances of 10 % every 10 kts of headwind
- Increase total distances of 30 % every 10 kts of rear wind
- Increase by : 7 % on hard sod, 25 % on high grass, 10 % on short grass, 30 % on slippery runway, 15 % on wet runway

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 to AUTO.

TAKEOFF DISTANCES

WEIGHT : 7394 lbs (3354 kg)

Associated conditions :
- Landing gear DN and flaps TO
- 12°5 of attitude – TRQ = 100 %
- Np = 2000 RPM – BLEED AUTO
- Hard, dry and level runway
- GR = Ground roll (in ft)
- D_{50} = Takeoff distance (clear to 50 ft) (in ft)
- Rotation speed choice (V_R)



WEIGHT : 7394 lbs (3354 kg)	**At 50 ft = 99 KIAS - 114 MPH IAS**							
PRESSURE ALTITUDE ft	ISA – 35°C		ISA – 20°C		ISA – 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1575	2250	1755	2495	1905	2675	2035	2840
2000	1755	2495	1970	2755	2120	2955	2280	3150
4000	1970	2755	2200	3055	2380	3285	2545	3510
6000	2185	3035	2480	3415	2675	3675	2890	3955
8000	2460	3380	2790	3825	3055	4135	3315	4445
PRESSURE ALTITUDE ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	2165	3020	2315	3200	2480	3415	2560	3530
2000	2445	3365	2595	3580	2780	3805	2920	3990
4000	2740	3760	2955	4035	3185	4300	3330	4480
6000	3135	4235	3380	4530	3625	4825	3805	5055
8000	3560	4760	3855	5105	4170	5450	4380	5710

Figure 5.9.3 – TAKEOFF DISTANCES – 7394 lbs (3354 kg)

Corrections :
- Reduce total distances of 10 % every 10 kts of headwind
- Increase total distances of 30 % every 10 kts of rear wind
- Increase by : 7 % on hard sod, 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 to AUTO.

5.10 - CLIMB PERFORMANCE

MXCL - SPEEDS (IAS = 130 KIAS)

Conditions : Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 130 KIAS - BLEED AUTO or HI

Airplane weight	Pressure altitude (feet)	RATE OF CLIMB (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	3050	2915	2800	2685	2580	2480
	2000	3025	2890	2765	2655	2545	2445
	4000	2995	2860	2735	2615	2505	2405
	6000	2960	2820	2695	2575	2465	2360
	8000	2930	2790	2655	2535	2425	2320
6594 lbs (2991 kg)	SL	2585	2470	2365	2270	2175	2090
	2000	2560	2445	2335	2240	2145	2055
	4000	2530	2415	2305	2205	2110	2020
	6000	2500	2380	2265	2165	2070	1980
	8000	2465	2345	2230	2125	2035	1945
7394 lbs (3354 kg)	SL	2195	2095	2005	1920	1840	1765
	2000	2170	2070	1975	1890	1810	1730
	4000	2140	2035	1945	1855	1770	1695
	6000	2110	2005	1905	1820	1735	1660
	8000	2075	1970	1870	1780	1700	1620

Figure 5.10.1 - MXCL - SPEEDS (IAS = 130 KIAS)

CLIMB PERFORMANCE

MXCL - SPEEDS (IAS = 160 KIAS)

Conditions : Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 160 KIAS up to 20000 ft, then - 2 KIAS/1000 ft
BLEED AUTO or HI

Airplane weight	Pressure altitude (feet)	RATE OF CLIMB (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2850	2720	2600	2490	2385	2285
	2000	2815	2680	2560	2445	2335	2235
	4000	2770	2635	2510	2395	2285	2180
	6000	2725	2590	2460	2340	2230	2130
	8000	2680	2540	2405	2290	2180	2080
6594 lbs (2991 kg)	SL	2430	2320	2215	2115	2025	1940
	2000	2395	2280	2175	2075	1985	1895
	4000	2355	2240	2130	2030	1935	1845
	6000	2315	2195	2085	1980	1885	1800
	8000	2270	2150	2035	1935	1840	1755
7394 lbs (3354 kg)	SL	2080	1980	1890	1805	1725	1650
	2000	2045	1945	1855	1765	1685	1610
	4000	2010	1910	1810	1725	1640	1560
	6000	1970	1865	1770	1675	1595	1520
	8000	1930	1820	1720	1635	1550	1475

Figure 5.10.2 - MXCL - SPEEDS (IAS = 160 KIAS)

CLIMB PERFORMANCE

700 SHP - CLIMB SPEEDS (IAS = 130 KIAS)

Conditions : 700 SHP climb power
Landing gear and flaps UP
IAS = 130 KIAS - BLEED AUTO or HI

Airplane weight	Pressure altitude (feet)	RATE OF CLIMB (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2445	2335	2235	2145	2060	1980
	2000	2420	2310	2210	2115	2030	1945
	4000	2390	2280	2175	2085	1995	1910
	6000	2360	2245	2145	2050	1960	1875
	8000	2330	2215	2110	2015	1925	1845
6594 lbs (2991 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
7394 lbs (3354 kg)	SL	1725	1645	1570	1500	1435	1380
	2000	1700	1615	1540	1470	1405	1345
	4000	1670	1590	1510	1440	1375	1315
	6000	1640	1555	1480	1410	1340	1280
	8000	1610	1525	1445	1375	1310	1250

Figure 5.10.3 - 700 SHP - CLIMB SPEEDS (IAS = 130 KIAS)

CLIMB PERFORMANCE

700 SHP - CLIMB SPEEDS (IAS = 160 KIAS)

Conditions : 700 SHP climb power
Landing gear and flaps UP
IAS = 160 KIAS up to 20000 ft, then - 2 KIAS/1000 ft
BLEED AUTO or HI

Airplane weight	Pressure altitude (feet)	RATE OF CLIMB (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2160	2055	1955	1865	1785	1705
	2000	2120	2010	1915	1825	1740	1665
	4000	2075	1970	1875	1780	1695	1620
	6000	2035	1925	1830	1735	1650	1570
	8000	1995	1880	1785	1690	1605	1515
6594 lbs (2991 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
7394 lbs (3354 kg)	SL	1540	1460	1390	1320	1255	1200
	2000	1510	1430	1355	1285	1225	1165
	4000	1470	1390	1315	1245	1185	1125
	6000	1430	1350	1275	1205	1140	1080
	8000	1395	1315	1240	1170	1105	1035

Figure 5.10.4 - 700 SHP - CLIMB SPEEDS (IAS = 160 KIAS)

CLIMB PERFORMANCE

MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : ***ISA - 20°C***
Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 130 KIAS - 2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected, fuel consumptions increased by 2 %*

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	0.9	1	00.45	4	3	1.1	2	01.00	5	4	1.3	2
4000	01.15	7	6	1.9	3	01.45	8	7	2.2	3	01.45	10	8	2.6	4
6000	02.00	10	8	2.8	4	02.30	12	10	3.3	5	02.45	15	11	3.9	6
8000	02.45	14	11	3.6	6	03.15	16	13	4.3	7	03.45	19	15	5.1	8
10000	03.15	17	13	4.5	7	04.00	20	16	5.3	9	04.45	24	19	6.3	10
12000	04.00	20	16	5.4	9	04.45	24	19	6.4	11	05.45	29	22	7.5	13
14000	04.45	24	19	6.2	11	05.45	28	22	7.4	13	06.45	33	26	8.8	15
16000	05.30	27	21	7.1	13	06.30	32	25	8.4	15	07.45	38	30	10.0	18
18000	06.15	30	24	8.0	15	07.15	36	28	9.4	17	08.45	42	33	11.2	21
20000	07.00	33	26	8.8	17	08.15	40	31	10.5	20	09.45	47	37	12.5	24
22000	07.45	37	29	9.7	19	09.15	44	34	11.5	22	11.00	52	41	13.7	27
24000	08.30	40	31	10.5	21	10.00	48	37	12.6	25	12.00	57	45	15.0	30
26000	09.15	43	34	11.4	23	11.00	52	40	13.6	28	13.15	62	48	16.3	34
28000	10.00	47	37	12.3	26	12.00	56	44	14.7	31	14.30	67	52	17.6	38
30000	11.00	50	39	13.3	29	13.15	60	47	15.9	35	15.45	72	57	19.1	42
31000	11.30	52	41	13.8	31	13.45	62	49	16.5	37	16.45	75	59	19.9	45

Figure 5.10.5 - MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS) / ISA - 20°C

CLIMB PERFORMANCE

MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : ***ISA***
Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 130 KIAS - 2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 4 %
  time to climb increased up to 5 % above FL 260

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	00.45	5	4	1.2	2	01.00	6	4	1.5	2
4000	01.30	8	6	2.1	3	01.45	9	7	2.5	4	02.00	11	9	2.9	4
6000	02.15	12	9	3.1	5	02.30	14	11	3.7	6	03.00	16	13	4.3	7
8000	03.00	15	12	4.1	7	03.30	18	14	4.8	8	04.00	22	17	5.7	9
10000	03.45	19	15	5.1	8	04.30	23	18	6.0	10	05.15	27	21	7.1	12
12000	04.30	23	18	6.0	10	05.15	27	21	7.2	12	06.15	32	25	8.5	15
14000	05.15	26	21	7.0	12	06.15	31	25	8.3	15	07.30	37	29	9.9	18
16000	06.00	30	24	8.0	15	07.15	36	28	9.5	17	08.30	43	34	11.3	21
18000	06.45	34	27	8.9	17	08.15	40	32	10.7	20	09.45	48	38	12.7	24
20000	07.45	38	29	9.9	19	09.15	45	35	11.8	23	11.00	53	42	14.1	28
22000	08.30	41	32	10.9	22	10.15	49	39	13.0	26	12.00	59	46	15.6	31
24000	09.30	45	35	11.9	24	11.15	54	42	14.2	29	13.30	65	51	17.1	35
26000	10.15	49	38	12.9	27	12.30	59	46	15.5	33	15.00	70	55	18.6	40
28000	11.30	53	42	14.0	31	13.45	64	50	16.8	38	16.45	77	60	20.3	46
30000	12.45	57	45	15.2	35	15.15	69	54	18.3	43	18.45	84	66	22.2	53
31000	13.30	60	47	15.8	38	16.15	72	57	19.1	46	20.00	88	69	23.3	57

Figure 5.10.6 - MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE
(IAS = 130 KIAS) / ISA

CLIMB PERFORMANCE

MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : ***ISA + 20°C***
Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 130 KIAS - 2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by :
  . 2 % below FL 150
  . up to 6 % from FL 150 to FL 250
  . up to 14 % above FL 250
  time to climb increased by 4 % to 21 % from FL 200 to FL 310

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	1.2	2	01.00	5	4	1.4	2	01.00	6	5	1.6	2
4000	01.30	9	7	2.3	4	02.00	10	8	2.7	4	02.15	12	10	3.2	5
6000	02.30	13	10	3.4	5	02.45	15	12	4.1	7	03.15	18	14	4.8	8
8000	03.15	17	13	4.5	7	03.45	20	16	5.4	9	04.30	24	19	6.4	11
10000	04.00	21	17	5.6	10	04.45	25	20	6.7	11	05.45	30	24	8.0	14
12000	04.45	25	20	6.7	12	05.45	30	24	8.0	14	07.00	36	28	9.5	17
14000	05.45	30	23	7.8	14	06.45	35	28	9.3	17	08.15	42	33	11.1	20
16000	06.30	34	26	8.9	17	08.00	40	32	10.6	20	09.30	48	38	12.7	24
18000	07.30	38	30	10.0	19	09.00	45	36	12.0	23	10.45	54	43	14.3	28
20000	08.30	42	33	11.1	22	10.15	50	40	13.3	27	12.15	60	47	16.0	32
22000	09.30	47	37	12.3	25	11.30	56	44	14.7	31	13.45	67	53	17.7	37
24000	10.45	51	40	13.5	29	13.00	61	48	16.2	35	15.45	74	58	19.6	43
26000	12.15	56	44	14.8	34	14.45	68	53	17.9	41	17.45	82	64	21.7	50
28000	13.45	61	48	16.2	39	16.45	74	58	19.6	48	20.30	91	71	24.1	59
30000	15.30	67	53	17.7	46	19.00	82	64	21.6	57	23.45	102	80	26.9	72
31000	16.30	70	55	18.5	50	20.30	86	68	22.8	62	26.00	108	85	28.5	79

Figure 5.10.7 - MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS) / ISA + 20°C

CLIMB PERFORMANCE

MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : ***ISA - 20°C***
Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 160 KIAS up to FL 200 ; - 2 KIAS / 1000 ft then
2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 2 %

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump. l	Consump. kg	Consump. us gal	Dist. (NM)	Time (min. s)	Consump. l	Consump. kg	Consump. us gal	Dist. (NM)	Time (min. s)	Consump. l	Consump. kg	Consump. us gal	Dist. (NM)
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	00.45	4	4	1.2	2	01.00	5	4	1.4	3
4000	01.30	8	6	2.0	4	01.45	9	7	2.3	4	02.00	10	8	2.7	5
6000	02.15	11	9	3.0	6	02.30	13	10	3.5	7	03.00	15	12	4.1	8
8000	03.00	15	12	3.9	8	03.30	17	14	4.6	9	04.00	20	16	5.4	11
10000	03.45	18	15	4.9	10	04.15	22	17	5.7	12	05.00	26	20	6.7	14
12000	04.30	22	17	5.8	12	05.15	26	20	6.9	14	06.00	31	24	8.1	17
14000	05.15	26	20	6.8	15	06.15	30	24	8.0	17	07.15	36	28	9.4	20
16000	06.00	29	23	7.7	17	07.00	35	27	9.1	20	08.15	41	32	10.7	24
18000	06.45	33	26	8.7	20	08.00	39	30	10.3	23	09.30	46	36	12.1	28
20000	07.45	37	29	9.7	23	09.00	43	34	11.4	27	10.45	51	40	13.5	32
22000	08.30	40	32	10.6	25	10.00	47	37	12.5	30	11.45	56	44	14.8	36
24000	09.15	44	34	11.5	28	11.00	52	41	13.7	34	13.00	61	48	16.2	40
26000	10.15	47	37	12.5	31	12.00	56	44	14.8	37	14.15	66	52	17.5	44
28000	11.00	51	40	13.4	34	13.00	60	47	15.9	41	15.30	72	56	18.9	49
30000	12.00	55	43	14.4	38	14.15	65	51	17.1	45	17.00	77	61	20.4	54
31000	12.30	56	44	14.9	40	14.45	67	53	17.8	47	17.45	80	63	21.2	57

Figure 5.10.8 - MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE
(IAS = 160 KIAS) / ISA - 20°C

CLIMB PERFORMANCE

MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : ***ISA***
Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 160 KIAS up to FL 200 ; – 2 KIAS / 1000 ft then
2000 RPM – BLEED AUTO

NOTE :
- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 5 %
  time to climb increased up to 6 % above FL 260

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump. l	Consump. kg	Consump. us gal	Dist. (NM)	Time (min. s)	Consump. l	Consump. kg	Consump. us gal	Dist. (NM)	Time (min. s)	Consump. l	Consump. kg	Consump. us gal	Dist. (NM)
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	5	4	1.3	2	01.00	6	5	1.6	3
4000	01.45	8	7	2.2	4	01.45	10	8	2.6	5	02.15	12	9	3.1	6
6000	02.30	13	10	3.3	7	02.45	15	12	3.9	8	03.15	17	14	4.6	9
8000	03.15	17	13	4.4	9	03.45	20	16	5.2	11	04.30	23	18	6.1	12
10000	04.00	21	16	5.5	11	04.45	25	19	6.5	14	05.45	29	23	7.6	16
12000	05.00	25	20	6.6	14	05.45	29	23	7.8	17	06.45	35	27	9.2	20
14000	05.45	29	23	7.7	17	06.45	34	27	9.1	20	08.00	40	32	10.7	24
16000	06.45	33	26	8.8	20	07.45	39	31	10.4	24	09.15	46	36	12.2	28
18000	07.30	37	29	9.9	23	09.00	44	35	11.7	27	10.45	52	41	13.8	32
20000	08.30	42	33	11.0	26	10.15	49	39	13.0	31	12.00	58	46	15.4	37
22000	09.30	46	36	12.1	30	11.15	54	43	14.3	35	13.15	64	50	17.0	42
24000	10.30	50	39	13.2	33	12.15	59	46	15.6	40	14.45	70	55	18.6	47
26000	11.30	54	42	14.3	37	13.45	64	51	17.0	44	16.15	77	60	20.3	53
28000	12.45	59	46	15.5	41	15.15	70	55	18.4	50	18.15	84	66	22.1	60
30000	14.00	63	50	16.7	46	16.45	76	59	20.0	56	20.15	91	72	24.1	68
31000	14.45	66	52	17.3	49	17.45	79	62	20.8	59	21.30	95	75	25.2	72

Figure 5.10.9 – MXCL – TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS) / ISA

CLIMB PERFORMANCE

MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : ***ISA + 20°C***
Maximum climb power (850 SHP)
Landing gear and flaps UP
IAS = 160 KIAS up to 20000 ft ; - 2 KIAS / 1000 ft then
2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by :
  . 2 % below FL 200
  . up to 9 % from FL 200 to FL 250
  . up to 21 % above FL 250
  time to climb increased by 5 % to 31 % from FL 200 to FL 310

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	5	4	1.3	2	01.00	6	4	1.5	3	01.15	7	5	1.7	3
4000	01.45	9	7	2.5	5	02.00	11	9	3.0	6	02.30	13	10	3.5	7
6000	02.45	14	11	3.7	7	03.00	17	13	4.4	9	03.45	20	15	5.2	10
8000	03.30	19	15	5.0	10	04.00	22	17	5.9	12	05.00	26	21	6.9	14
10000	04.30	23	18	6.2	13	05.15	28	22	7.3	15	06.15	33	26	8.6	18
12000	05.30	28	22	7.4	16	06.15	33	26	8.7	19	07.30	39	31	10.3	23
14000	06.15	33	26	8.6	19	07.30	39	30	10.2	23	09.00	46	36	12.1	27
16000	07.15	37	29	9.9	23	08.45	44	35	11.7	27	10.15	52	41	13.9	32
18000	08.15	42	33	11.1	26	10.00	50	39	13.2	31	11.45	59	47	15.7	37
20000	09.30	47	37	12.4	31	11.15	56	44	14.8	36	13.30	67	52	17.6	44
22000	10.45	52	41	13.8	35	12.45	62	49	16.5	42	15.15	74	58	19.6	51
24000	12.15	58	45	15.2	41	14.30	69	54	18.2	49	17.30	83	65	21.8	59
26000	13.45	63	50	16.7	47	16.30	76	60	20.1	56	20.00	92	72	24.2	68
28000	15.30	69	54	18.3	53	18.45	84	66	22.1	65	23.00	102	80	27.0	80
30000	17.30	76	60	20.0	61	21.30	92	73	24.4	76	26.45	114	90	30.1	95
31000	18.45	79	62	21.0	66	23.15	97	76	25.7	82	29.15	121	95	32.0	104

Figure 5.10.10 - MXCL - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS) / ISA + 20°C

CLIMB PERFORMANCE

700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : ***ISA - 20°C***
700 SHP climb power
Landing gear and flaps UP
IAS = 130 KIAS - 2000 RPM - BLEED AUTO

NOTE :
- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 2 %

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	2	01.15	6	4	1.5	2
4000	01.30	8	6	2.1	3	02.00	9	7	2.5	4	02.15	11	9	3.0	5
6000	02.30	12	9	3.1	5	03.00	14	11	3.7	6	03.30	17	13	4.4	8
8000	03.15	15	12	4.1	7	04.00	18	14	4.9	9	04.45	22	17	5.8	10
10000	04.15	19	15	5.0	9	05.00	23	18	6.0	11	06.00	27	21	7.2	13
12000	05.15	23	18	6.0	11	06.00	27	21	7.2	14	07.15	33	26	8.6	17
14000	06.00	26	21	6.9	14	07.15	31	25	8.3	16	08.45	38	30	10.0	20
16000	06.45	30	23	7.9	16	08.15	36	28	9.5	19	10.00	43	34	11.4	23
18000	07.45	33	26	8.8	18	09.30	40	31	10.6	22	11.15	48	38	12.8	27
20000	08.45	37	29	9.7	21	10.30	44	35	11.7	25	12.45	54	42	14.2	31
22000	09.45	40	32	10.7	24	11.45	49	38	12.9	29	14.00	59	46	15.6	35
24000	10.45	44	35	11.6	26	13.00	53	42	14.0	32	15.30	64	50	17.0	39
26000	11.45	48	37	12.5	30	14.00	57	45	15.2	36	17.00	70	55	18.4	44
28000	12.45	51	40	13.5	33	15.15	62	49	16.3	40	18.45	75	59	19.9	49
30000	13.45	55	43	14.5	36	16.30	66	52	17.5	44	20.15	81	64	21.4	54
31000	14.15	57	44	15.0	38	17.15	69	54	18.2	46	21.15	84	66	22.2	57

Figure 5.10.11 - 700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS) / ISA - 20°C

CLIMB PERFORMANCE

700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : ***ISA***
700 SHP climb power
Landing gear and flaps UP
IAS = 130 KIAS - 2000 RPM - BLEED AUTO

NOTE :
- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 4 %

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	4	4	1.2	2	01.00	5	4	1.4	2	01.15	6	5	1.7	3
4000	01.45	9	7	2.3	4	02.15	11	8	2.8	5	02.30	13	10	3.4	6
6000	02.45	13	10	3.5	6	03.15	16	12	4.1	7	04.00	19	15	5.0	9
8000	03.45	17	14	4.6	8	04.30	21	16	5.5	10	05.20	25	20	6.6	12
10000	04.45	21	17	5.7	11	05.30	26	20	6.8	13	06.40	31	24	8.2	15
12000	05.45	25	20	6.7	13	06.45	31	24	8.1	16	08.00	37	29	9.7	19
14000	06.30	30	23	7.8	16	08.00	36	28	9.4	19	09.30	43	34	11.3	23
16000	07.30	34	26	8.9	18	09.00	40	32	10.7	22	11.00	49	38	12.9	27
18000	08.30	38	30	9.9	21	10.30	45	36	12.0	26	12.30	55	43	14.5	31
20000	09.45	42	33	11.0	24	11.45	50	39	13.3	29	14.00	61	48	16.1	36
22000	10.45	46	36	12.1	27	13.00	55	43	14.6	33	15.45	67	53	17.8	41
24000	11.45	50	39	13.1	31	14.15	60	47	15.9	37	17.30	74	58	19.4	46
26000	13.00	54	42	14.2	34	15.45	65	51	17.3	42	19.15	80	63	21.1	51
28000	14.00	58	46	15.3	38	17.15	71	55	18.7	47	21.00	87	68	22.9	58
30000	15.15	62	49	16.5	42	18.45	76	60	20.1	52	23.00	94	74	24.8	65
31000	16.00	65	51	17.1	45	19.45	79	62	20.9	55	24.15	98	77	25.8	69

Figure 5.10.12 - 700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS) / ISA

CLIMB PERFORMANCE

700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS)

Conditions : ***ISA + 20°C***
700 SHP climb power
Landing gear and flaps UP
IAS = 130 KIAS - 2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by :
  . 3 % below FL 250
  . up to 12 % above FL 250
  time to climb increased by 4 % to 17 % from FL 260 to FL 310

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	2	01.15	6	5	1.6	3	01.30	7	6	1.9	3
4000	02.00	10	8	2.6	4	02.15	12	9	3.1	5	02.45	14	11	3.8	7
6000	03.00	15	11	3.9	7	03.30	18	14	4.6	8	04.15	21	17	5.6	10
8000	04.00	19	15	5.1	9	04.45	23	18	6.1	11	05.45	28	22	7.4	14
10000	05.00	24	19	6.3	12	06.00	29	23	7.6	15	07.15	35	27	9.2	18
12000	06.00	28	22	7.5	15	07.30	34	27	9.1	18	09.00	42	33	11.0	22
14000	07.15	33	26	8.7	18	08.45	40	31	10.5	21	10.30	48	38	12.8	26
16000	08.15	38	30	9.9	21	10.00	45	36	12.0	25	12.00	55	43	14.6	31
18000	09.30	42	33	11.1	24	11.30	51	40	13.5	29	13.45	62	49	16.4	36
20000	10.30	47	37	12.4	28	12.45	57	45	15.0	34	15.45	69	54	18.3	41
22000	11.45	51	40	13.6	31	14.15	62	49	16.5	38	17.30	76	60	20.2	47
24000	13.00	56	44	14.8	35	15.45	68	53	18.0	43	19.30	84	66	22.1	53
26000	14.15	61	48	16.1	40	17.30	74	58	19.6	48	21.30	91	72	24.1	60
28000	15.45	66	52	17.5	45	19.15	81	63	21.3	55	24.00	100	78	26.3	69
30000	17.45	72	56	19.0	52	21.45	88	69	23.3	64	27.15	110	87	29.1	81
31000	18.45	75	59	19.8	56	23.00	92	73	24.4	69	29.30	116	91	30.8	88

Figure 5.10.13 - 700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 130 KIAS) / ISA + 20°C

CLIMB PERFORMANCE

700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : ***ISA - 20°C***
700 SHP climb power
Landing gear and flaps UP
IAS = 160 KIAS up to 20000 ft ; - 2 KIAS / 1000 ft then
2000 RPM - BLEED AUTO

NOTE :
- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 2 %

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	1.2	2	01.00	5	4	1.4	3	01.15	6	5	1.7	3
4000	02.00	9	7	2.4	5	02.15	11	8	2.8	6	02.30	13	10	3.3	7
6000	02.45	13	11	3.5	8	03.30	16	12	4.2	9	04.00	19	15	5.0	11
8000	03.45	18	14	4.7	10	04.30	21	17	5.6	12	05.20	25	20	6.6	15
10000	04.45	22	17	5.8	13	05.45	26	21	6.9	16	07.00	31	24	8.2	19
12000	06.00	26	21	6.9	16	07.00	31	25	8.3	20	08.30	37	29	9.9	23
14000	07.00	31	24	8.1	20	08.15	36	29	9.6	24	10.00	43	34	11.5	28
16000	08.00	35	27	9.2	23	09.30	42	33	11.0	28	11.30	50	39	13.1	33
18000	09.00	39	31	10.3	27	11.00	47	37	12.4	32	13.05	56	44	14.8	39
20000	10.15	44	34	11.5	31	12.30	52	41	13.8	37	14.45	63	49	16.5	45
22000	11.30	48	37	12.6	35	13.45	57	45	15.1	42	16.30	69	54	18.2	50
24000	12.30	52	41	13.7	39	15.15	62	49	16.5	47	18.15	75	59	19.9	56
26000	13.45	56	44	14.8	43	16.30	67	53	17.8	51	20.00	81	64	21.5	62
28000	14.45	60	47	15.8	46	17.45	72	57	19.0	56	21.45	87	69	23.1	68
30000	16.00	64	50	16.8	50	19.15	77	60	20.3	61	23.30	93	73	24.7	75
31000	16.30	66	52	17.3	52	20.00	79	62	21.0	64	24.15	96	76	25.5	78

Figure 5.10.14 - 700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS) / ISA - 20°C

CLIMB PERFORMANCE

700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : ***ISA***
700 SHP climb power
Landing gear and flaps UP
IAS = 160 KIAS up to 20000 ft ; - 2 KIAS / 1000 ft then
2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by 4 %

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	1.4	3	01.15	6	5	1.6	3	01.30	7	6	1.9	4
4000	02.00	10	8	2.7	6	02.30	12	10	3.2	7	03.00	14	11	3.8	8
6000	03.15	15	12	4.0	9	03.45	18	14	4.8	10	04.30	22	17	5.7	12
8000	04.15	20	16	5.3	12	05.00	24	19	6.3	14	06.00	29	22	7.6	17
10000	05.30	25	20	6.6	15	06.30	30	23	7.9	18	07.45	36	28	9.4	22
12000	06.30	30	23	7.9	19	08.00	36	28	9.4	23	09.30	43	34	11.3	27
14000	07.45	35	27	9.2	23	09.15	42	33	11.0	27	11.00	50	39	13.2	33
16000	09.00	40	31	10.5	27	10.45	48	37	12.6	32	13.00	57	45	15.1	39
18000	10.15	45	35	11.8	31	12.30	54	42	14.2	38	14.45	65	51	17.1	46
20000	11.30	50	39	13.2	36	14.00	60	47	15.9	43	16.45	73	57	19.2	53
22000	13.00	55	43	14.5	41	15.30	66	52	17.5	49	18.45	80	63	21.2	60
24000	14.15	60	47	15.8	45	17.15	72	57	19.0	55	20.45	87	69	23.1	67
26000	15.30	64	50	17.0	50	18.45	78	61	20.5	61	22.45	95	74	25.0	74
28000	16.45	69	54	18.2	55	20.15	84	66	22.1	66	24.45	102	80	26.9	82
30000	18.00	74	58	19.4	60	22.00	89	70	23.6	72	27.00	109	86	28.9	90
31000	18.45	76	60	20.1	63	23.00	92	73	24.4	75	28.15	114	89	30.0	94

Figure 5.10.15 - 700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS) / ISA

CLIMB PERFORMANCE

700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS)

Conditions : ***ISA + 20°C***
700 SHP climb power
Landing gear and flaps UP
IAS = 160 KIAS up to 20000 ft ; - 2 KIAS / 1000 ft then
2000 RPM - BLEED AUTO

NOTE :

- *Time, consumption and distance from the 50 ft*
- *If BLEED HI selected,*
  fuel consumptions increased by :
  . 4 % below FL 250
  . up to 16 % above FL 250
  time to climb increased by 7 % to 22 % from FL 260 to FL 310

Pressure altitude (feet)	WEIGHT 5794 lbs (2628 kg)					WEIGHT 6579 lbs (2984 kg)					WEIGHT 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	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	6	5	1.5	3	01.15	7	5	1.8	4	01.30	8	6	2.2	4
4000	02.15	11	9	3.0	6	02.45	14	11	3.6	8	03.15	16	13	4.3	9
6000	03.30	17	13	4.5	10	04.15	20	16	5.4	12	05.00	24	19	6.4	14
8000	04.45	23	18	6.0	14	05.30	27	21	7.2	16	06.45	32	25	8.6	20
10000	06.00	28	22	7.4	18	07.15	34	27	8.9	21	08.30	41	32	10.7	25
12000	07.15	34	27	8.9	22	08.45	40	32	10.7	26	10.30	49	38	12.9	32
14000	08.30	39	31	10.4	26	10.15	47	37	12.5	32	12.30	57	45	15.1	38
16000	10.00	45	35	11.9	31	12.00	54	43	14.4	38	14.30	66	52	17.4	45
18000	11.30	51	40	13.5	36	13.45	61	48	16.2	44	16.45	75	58	19.7	53
20000	13.00	57	45	15.0	42	15.45	69	54	18.2	51	19.00	84	66	22.1	62
22000	14.30	63	49	16.5	47	17.30	76	60	20.0	58	21.15	92	73	24.4	71
24000	15.45	68	54	18.0	53	19.15	83	65	21.9	65	23.30	101	79	26.7	79
26000	17.30	74	58	19.5	59	21.15	90	71	23.7	72	26.00	110	87	29.1	89
28000	19.15	80	63	21.1	66	23.30	98	77	25.8	81	29.15	120	95	31.8	100
30000	21.15	86	68	22.8	74	26.15	106	83	28.0	91	33.00	132	104	34.9	115
31000	22.30	90	70	23.7	78	27.45	111	87	29.3	98	35.15	139	109	36.8	124

Figure 5.10.16 - 700 SHP - TIME, CONSUMPTION AND CLIMB DISTANCE (IAS = 160 KIAS) / ISA + 20°C

CLIMB PERFORMANCE

CLIMB PERFORMANCE AFTER GO-AROUND

Conditions : 700 SHP 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
6594 lbs (2991 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

Conditions : 700 SHP climb power
Landing gear DN and flaps LDG
IAS = 95 KIAS

Airplane weight	Pressure altitude (feet)	RATE OF CLIMB (ft/min)						
		ISA − 35°C	ISA − 20°C	ISA − 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
7394 lbs (3354 kg)	SL	1120	1025	960	905	850	805	760
	2000	1085	985	920	865	810	765	715
	4000	1045	945	880	825	770	720	675
	6000	1010	905	840	780	730	680	630
	8000	965	860	795	740	685	630	580

Figure 5.10.17 − CLIMB PERFORMANCE AFTER GO-AROUND

CLIMB PERFORMANCE

CLIMB PERFORMANCE - FLAPS TO

Conditions : 700 SHP climb 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
6594 lbs (2991 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

Conditions : 700 SHP climb power
Landing gear UP and flaps TO
IAS = 115 KIAS

Airplane weight	Pressure altitude (feet)	RATE OF CLIMB (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
7394 lbs (3354 kg)	SL	1825	1695	1615	1545	1475	1415	1355
	2000	1800	1670	1590	1515	1450	1390	1325
	4000	1775	1640	1560	1490	1420	1360	1300
	6000	1750	1620	1540	1465	1395	1330	1270
	8000	1720	1585	1505	1430	1360	1295	1230

Figure 5.10.18 - CLIMB PERFORMANCE - FLAPS TO

5.11 - CRUISE PERFORMANCE

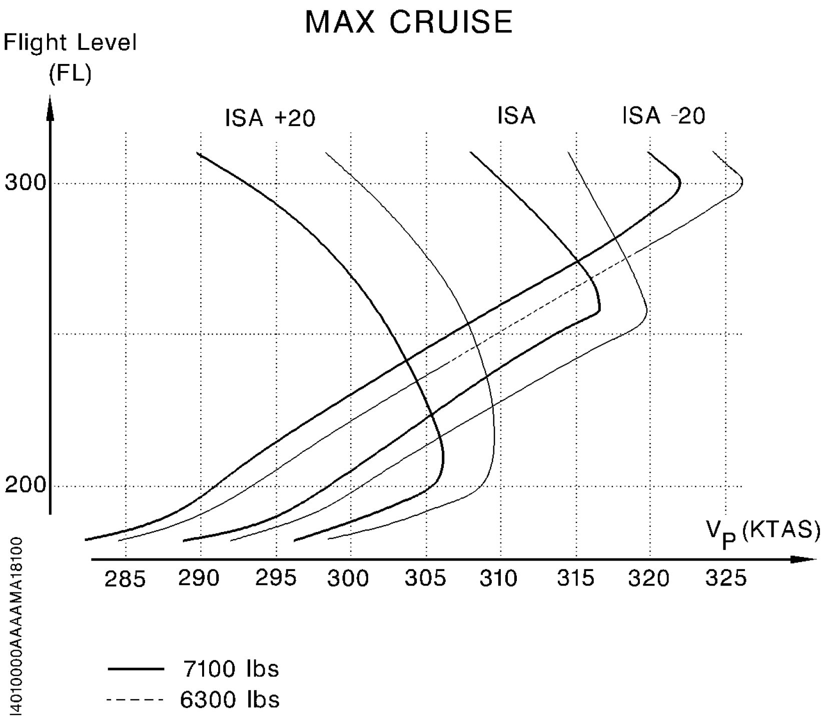


Figure 5.11.1 - CRUISE PERFORMANCE (Maximum cruise)

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA - 20°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 290 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 290 : reduce the torque value mentioned in the table below by 5 %, leading to airspeed reduction by 3 KIAS.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	- 04	121	329	258	86.9	246	241	245	240	244	238
5000	- 14	121	303	238	80.0	241	253	240	252	239	250
10000	- 24	121	282	221	74.5	236	265	234	264	233	262
15000	- 34	121	270	212	71.4	230	280	229	278	227	276
18000	- 40	121	262	205	69.1	227	289	226	287	224	285
20000	- 44	121	256	201	67.7	225	295	224	293	222	291
21000	- 46	121	254	200	67.2	224	298	222	296	221	294
22000	- 48	121	252	198	66.7	223	302	221	299	219	297
23000	- 50	121	251	197	66.2	222	305	220	303	218	300
24000	- 52	121	249	196	65.9	221	308	219	306	217	303
25000	- 54	121	248	195	65.6	220	312	218	309	216	307
26000	- 56	121	247	194	65.3	219	315	217	313	215	310
27000	- 58	121	247	194	65.2	218	319	216	316	213	313
28000	- 60	121	247	194	65.2	216	322	214	321	212	318
29000	- 62	115	247	194	65.3	215	326	213	323	211	320
30000	- 64	111	247	194	65.3	214	329	211	326	209	322
31000	- 66	107	238	187	62.9	209	328	207	324	204	320

Figure 5.11.2 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA - 10°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 270 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 270 : reduce the torque value mentioned in the table below by 6 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 06	121	332	261	87.8	245	244	244	242	242	241
5000	– 04	121	306	240	80.8	240	256	238	255	237	253
10000	– 14	121	285	223	75.2	234	269	232	267	231	265
15000	– 24	121	273	214	72.1	229	283	227	281	225	279
18000	– 30	121	264	207	69.8	225	292	224	290	222	288
20000	– 34	121	259	203	68.4	223	299	221	297	219	294
21000	– 36	121	257	201	67.8	222	302	220	300	218	297
22000	– 38	121	255	200	67.3	221	305	219	303	217	300
23000	– 40	121	253	198	66.8	220	309	218	306	216	304
24000	– 42	121	252	198	66.5	219	312	217	310	215	307
25000	– 44	121	251	197	66.2	217	316	216	313	213	310
26000	– 46	121	249	196	65.9	216	319	214	316	212	313
27000	– 48	119	249	196	65.8	215	322	213	321	211	318
28000	– 50	116	249	195	65.7	214	326	212	323	209	320
29000	– 52	110	241	189	63.6	210	325	207	322	204	318
30000	– 54	106	232	182	61.2	205	324	203	321	200	317
31000	– 56	103	223	175	58.9	201	323	198	319	196	315

Figure 5.11.3 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA - 5°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 260 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %..*
  - *. Above FL 260 : reduce the torque value mentioned in the table below by 7 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 11	121	334	262	88.3	244	245	243	244	242	243
5000	+ 01	121	307	241	81.2	239	257	238	256	236	255
10000	- 09	121	286	225	75.6	233	270	232	269	230	267
15000	- 19	121	274	215	72.5	228	285	226	283	224	281
18000	- 25	121	265	208	70.1	224	294	223	292	221	290
20000	- 29	121	260	204	68.7	222	301	220	298	218	296
21000	- 31	121	258	203	68.2	221	304	219	302	217	299
22000	- 33	121	256	201	67.6	220	307	218	305	216	302
23000	- 35	121	254	200	67.2	219	311	217	308	215	305
24000	- 37	121	253	198	66.8	217	314	216	312	213	309
25000	- 39	121	252	198	66.5	216	317	214	315	212	312
26000	- 41	121	251	197	66.3	215	321	213	319	211	316
27000	- 43	117	250	196	66.1	214	324	212	322	209	319
28000	- 45	113	243	191	64.2	210	324	208	322	205	318
29000	- 47	108	234	184	61.9	206	323	203	321	200	317
30000	- 49	104	226	177	59.7	202	323	199	319	197	314
31000	- 51	101	218	171	57.6	198	322	196	319	192	313

Figure 5.11.4 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 250 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 250 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 16	121	336	264	88.8	243	246	242	245	241	244
5000	+ 06	121	309	242	81.6	238	259	237	257	235	256
10000	– 04	121	288	226	76.0	232	272	231	270	229	269
15000	– 14	121	276	216	72.8	227	287	225	285	223	283
18000	– 20	121	267	209	70.5	223	296	222	294	220	291
20000	– 24	121	261	205	69.0	221	302	219	300	217	298
21000	– 26	121	259	203	68.4	220	306	218	303	216	301
22000	– 28	121	257	202	68.0	219	309	217	307	215	304
23000	– 30	121	256	201	67.5	218	312	216	310	214	307
24000	– 32	121	254	199	67.1	216	316	215	313	212	310
25000	– 34	121	253	198	66.8	215	319	213	318	211	314
26000	– 36	118	252	198	66.6	214	323	212	320	210	317
27000	– 38	114	245	192	64.6	210	323	208	319	205	315
28000	– 40	110	236	185	62.4	206	322	204	319	201	315
29000	– 42	105	228	179	60.1	202	321	199	317	197	313
30000	– 44	101	220	172	58.0	198	320	196	316	193	311
31000	– 46	98	211	166	55.8	194	319	192	315	188	309

Figure 5.11.5 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA + 5°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 240 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 240 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 3 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 21	121	338	265	89.3	243	248	241	247	240	245
5000	+ 11	121	310	244	82.0	237	260	236	259	234	257
10000	+ 01	121	289	227	76.4	231	273	230	272	228	270
15000	- 09	121	277	218	73.2	226	288	224	286	222	284
18000	- 15	121	268	210	70.8	222	297	221	295	219	293
20000	- 19	121	263	206	69.4	220	304	218	302	216	299
21000	- 21	121	260	204	68.8	219	307	217	305	215	302
22000	- 23	121	259	203	68.3	218	311	216	308	214	305
23000	- 25	121	257	201	67.8	216	314	215	312	213	309
24000	- 27	121	255	200	67.4	215	317	213	316	211	313
25000	- 29	119	254	199	67.1	214	321	212	319	210	316
26000	- 31	115	247	194	65.2	210	321	208	319	206	315
27000	- 33	111	238	187	62.9	206	320	204	318	201	314
28000	- 35	107	229	180	60.6	202	320	200	317	197	312
29000	- 37	102	221	174	58.5	198	319	196	315	193	310
30000	- 39	98	213	167	56.3	195	318	192	314	188	309
31000	- 41	94	205	161	54.2	190	316	187	313	183	306

Figure 5.11.6 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA + 10°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 230 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 230 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 4 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt) 5500 lbs (2495 kg)		AIRSPEEDS (kt) 6300 lbs (2858 kg)		AIRSPEEDS (kt) 7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 26	121	340	267	89.8	242	249	241	248	239	247
5000	+ 16	121	312	245	82.5	236	261	235	260	233	259
10000	+ 06	121	291	228	76.8	230	275	229	273	227	272
15000	– 04	121	279	219	73.6	225	290	223	288	221	286
18000	– 10	121	269	211	71.1	221	299	220	297	218	295
20000	– 14	121	264	207	69.7	219	306	217	304	215	301
21000	– 16	121	262	205	69.1	218	309	216	307	214	304
22000	– 18	121	260	204	68.6	217	312	215	310	213	307
23000	– 20	121	258	202	68.1	215	316	214	313	212	310
24000	– 22	120	256	201	67.7	214	319	212	317	210	314
25000	– 24	116	249	196	65.9	211	320	208	317	206	314
26000	– 26	112	240	189	63.5	207	319	204	316	201	312
27000	– 28	108	232	182	61.2	202	318	200	315	197	311
28000	– 30	103	223	175	59.0	198	317	197	313	193	308
29000	– 32	99	215	169	56.8	195	316	192	312	189	306
30000	– 34	95	207	163	54.7	191	315	188	311	184	305
31000	– 36	91	199	157	52.7	187	314	183	308	179	302

Figure 5.11.7 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA + 20°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 200 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 200 : reduce the torque value mentioned in the table below by 10 %, leading to airspeed reduction by 6 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 36	121	344	270	90.8	240	252	239	251	238	249
5000	+ 26	121	316	248	83.4	234	264	233	263	232	261
10000	+ 16	121	294	231	77.6	229	278	227	276	226	274
15000	+ 06	121	281	221	74.3	223	293	221	291	220	289
18000	+ 00	121	272	213	71.8	220	302	218	300	216	298
20000	- 04	121	266	209	70.4	217	309	215	307	213	304
21000	- 06	120	264	207	69.8	216	312	214	310	212	307
22000	- 08	117	257	202	67.9	213	313	211	310	208	307
23000	- 10	114	249	195	65.7	209	313	207	310	204	306
24000	- 12	110	241	189	63.6	205	313	203	310	200	305
25000	- 14	106	233	183	61.5	202	312	199	309	197	304
26000	- 16	102	224	176	59.3	198	312	196	308	193	303
27000	- 18	99	217	170	57.3	195	311	192	307	188	302
28000	- 20	95	209	164	55.3	191	310	188	306	184	300
29000	- 22	91	202	158	53.3	187	309	183	304	179	298
30000	- 24	87	195	153	51.4	182	308	179	302	174	295
31000	- 26	84	187	147	49.5	178	307	174	300	169	292

Figure 5.11.8 - 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 exceeding 121.4 % TRQ.

NORMAL CRUISE (recommended)

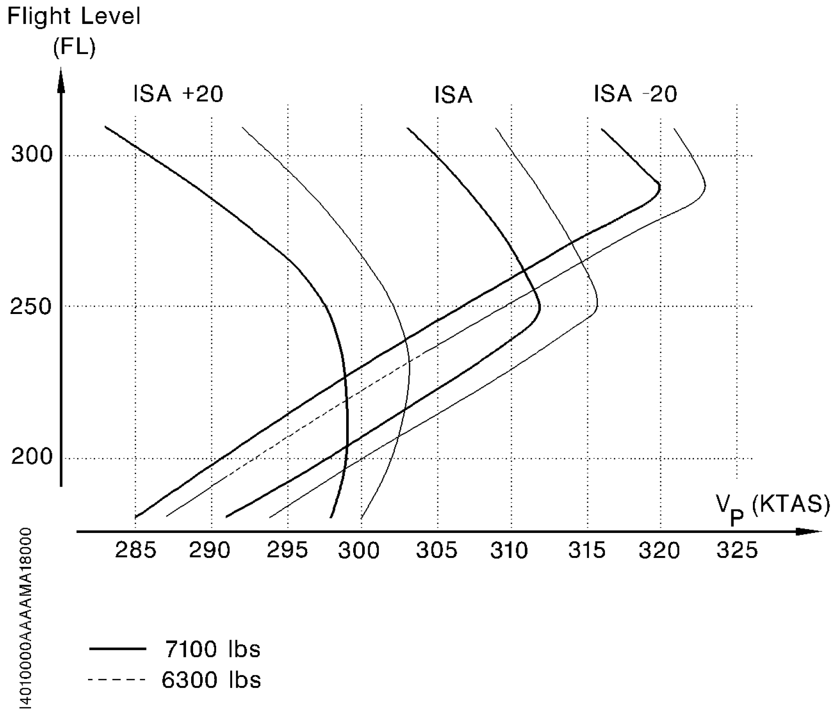


Figure 5.11.9 - CRUISE PERFORMANCE (Recommended cruise)

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA - 20°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  . Below FL 290 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.
  . Above FL 290 : reduce the torque value mentioned in the table below by 6 %, leading to airspeed reduction by 4 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	– 04	121	329	258	86.9	246	241	245	240	244	238
5000	– 14	121	303	238	80.0	241	253	240	252	239	250
10000	– 24	121	282	221	74.5	236	265	234	264	233	262
15000	– 34	121	270	212	71.4	230	280	229	278	227	276
18000	– 40	121	262	205	69.1	227	289	226	287	224	285
20000	– 44	121	256	201	67.7	225	295	224	293	222	291
21000	– 46	121	254	200	67.2	224	298	222	296	221	294
22000	– 48	121	252	198	66.7	223	302	221	299	219	297
23000	– 50	121	251	197	66.2	222	305	220	303	218	300
24000	– 52	121	249	196	65.9	221	308	219	306	217	303
25000	– 54	121	248	195	65.6	220	312	218	309	216	307
26000	– 56	121	247	194	65.3	219	315	217	313	215	310
27000	– 58	120	247	194	65.2	218	319	216	316	213	313
28000	– 60	115	247	194	65.2	216	322	214	320	212	317
29000	– 62	111	247	194	65.2	215	326	213	323	211	320
30000	– 64	107	240	188	63.3	211	326	209	322	206	318
31000	– 66	103	231	181	60.9	207	324	204	321	201	316

Figure 5.11.10 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA - 10°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 260 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 260 : reduce the torque value mentioned in the table below by 7 %, leading to airspeed reduction by 3 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 06	121	332	261	87.8	245	244	244	242	242	241
5000	- 04	121	306	240	80.0	240	256	238	255	237	253
10000	- 14	121	285	223	75.2	234	269	232	267	231	265
15000	- 24	121	273	214	72.1	229	283	227	281	225	279
18000	- 30	121	264	207	69.8	225	292	224	290	222	288
20000	- 34	121	259	203	68.4	223	299	221	297	219	294
21000	- 36	121	257	201	67.8	222	302	220	300	218	297
22000	- 38	121	255	200	67.3	221	305	219	303	217	300
23000	- 40	121	253	198	66.8	220	309	218	306	216	304
24000	- 42	121	252	198	66.5	219	312	217	310	215	307
25000	- 44	121	251	197	66.2	217	316	216	313	213	310
26000	- 46	117	249	196	65.9	216	319	214	316	212	313
27000	- 48	113	248	195	65.5	215	322	212	319	210	315
28000	- 50	110	240	188	63.3	210	321	208	318	206	314
29000	- 52	106	231	182	61.1	206	321	204	317	201	313
30000	- 54	102	223	175	58.9	202	320	200	316	197	312
31000	- 56	98	215	169	56.8	198	319	196	315	193	310

Figure 5.11.11 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA - 5°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 250 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 250 : reduce the torque value mentioned in the table below by 7 %, leading to airspeed reduction by 3 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 11	121	334	262	88.3	244	245	243	244	242	243
5000	+ 01	121	307	241	81.2	239	257	238	256	236	255
10000	– 09	121	286	225	75.6	233	270	232	269	230	267
15000	– 19	121	274	215	72.5	228	285	226	283	224	281
18000	– 25	121	265	208	70.1	224	294	223	292	221	290
20000	– 29	121	260	204	68.7	222	301	220	298	218	296
21000	– 31	121	258	203	68.2	221	304	219	302	217	299
22000	– 33	121	256	201	67.6	220	307	218	305	216	302
23000	– 35	121	254	200	67.2	219	311	217	308	215	305
24000	– 37	121	253	198	66.8	217	314	216	312	213	309
25000	– 39	118	252	198	66.5	216	317	214	316	212	313
26000	– 41	115	250	196	66.0	215	320	212	318	210	315
27000	– 43	111	241	189	63.7	210	320	208	317	206	314
28000	– 45	108	232	182	61.4	206	319	204	317	201	312
29000	– 47	103	224	176	59.3	202	318	200	315	197	310
30000	– 49	99	217	170	57.2	198	317	196	313	193	308
31000	– 51	96	209	164	55.1	195	316	192	312	188	306

Figure 5.11.12 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 240 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 240 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 4 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 16	121	336	264	88.8	243	246	242	245	241	244
5000	+ 06	121	309	242	81.6	238	259	237	257	235	256
10000	– 04	121	288	226	76.0	232	272	231	270	229	269
15000	– 14	121	276	216	72.8	227	287	225	285	223	283
18000	– 20	121	267	209	70.5	223	296	222	294	220	291
20000	– 24	121	261	205	69.0	221	302	219	300	217	298
21000	– 26	121	259	203	68.4	220	306	218	303	216	301
22000	– 28	121	257	202	68.0	219	309	217	307	215	304
23000	– 30	121	256	201	67.5	218	312	216	310	214	307
24000	– 32	121	254	199	67.1	216	316	215	313	212	310
25000	– 34	115	252	198	66.5	215	319	213	316	210	312
26000	– 36	112	243	191	64.2	211	318	208	315	206	311
27000	– 38	108	234	184	61.9	206	317	204	314	201	310
28000	– 40	104	226	177	59.7	202	317	200	313	197	308
29000	– 42	100	218	171	57.6	198	316	197	312	193	307
30000	– 44	96	210	165	55.5	195	315	192	310	189	305
31000	– 46	93	202	159	53.4	191	314	188	309	184	303

Figure 5.11.13 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA + 5°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 220 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 220 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 21	121	338	265	89.3	243	248	241	247	240	245
5000	+ 11	121	310	244	82.0	237	260	236	259	234	257
10000	+ 01	121	289	227	76.4	231	273	230	272	228	270
15000	- 09	121	277	218	73.2	226	288	224	286	222	284
18000	- 15	121	268	210	70.8	222	297	221	295	219	293
20000	- 19	121	263	206	69.4	220	304	218	302	216	299
21000	- 21	121	260	204	68.8	219	307	217	305	215	302
22000	- 23	121	259	203	68.3	218	311	216	308	214	305
23000	- 25	121	257	201	67.8	216	314	215	312	213	309
24000	- 27	117	253	199	66.9	215	317	213	315	210	311
25000	- 29	113	245	193	64.8	211	316	209	314	206	311
26000	- 31	109	236	185	62.4	207	316	204	313	202	309
27000	- 33	105	228	179	60.2	202	315	200	312	197	308
28000	- 35	101	220	173	58.1	198	314	197	311	193	306
29000	- 37	97	212	166	55.9	195	313	192	309	189	303
30000	- 39	94	204	160	53.9	191	312	188	307	184	301
31000	- 41	90	196	154	51.9	187	311	183	305	179	299

Figure 5.11.14 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA + 10°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 210 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 210 : reduce the torque value mentioned in the table below by 9 %, leading to airspeed reduction by 4 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 26	121	340	267	89.8	242	249	241	248	239	247
5000	+ 16	121	312	245	82.5	236	261	235	260	233	259
10000	+ 06	121	291	228	76.8	230	275	229	273	227	272
15000	– 04	121	279	219	73.6	225	290	223	288	221	286
18000	– 10	121	269	211	71.1	221	299	220	297	218	295
20000	– 14	121	264	207	69.7	219	306	217	304	215	301
21000	– 16	121	262	205	69.1	218	309	216	307	214	304
22000	– 18	121	260	204	68.6	217	312	215	310	213	307
23000	– 20	117	254	200	67.2	214	314	212	311	210	308
24000	– 22	114	246	193	65.1	211	314	208	311	206	307
25000	– 24	110	239	188	63.1	207	314	205	311	202	307
26000	– 26	106	230	181	60.8	203	313	200	310	197	305
27000	– 28	102	222	174	58.7	199	312	197	309	194	304
28000	– 30	98	214	168	56.5	195	311	193	307	189	302
29000	– 32	94	206	161	54.3	191	310	188	306	184	300
30000	– 34	90	198	156	52.4	187	309	184	304	180	297
31000	– 36	86	191	150	50.4	183	308	179	301	174	294

Figure 5.11.15 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA + 20°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 160 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 160 : reduce the torque value mentioned in the table below by 12 %, leading to airspeed reduction by 7 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 36	121	344	270	90.8	240	252	239	251	238	249
5000	+ 26	121	316	248	83.4	234	264	233	263	232	261
10000	+ 16	121	294	231	77.6	229	278	227	276	226	274
15000	+ 06	121	281	221	74.3	223	293	221	291	220	289
18000	+ 00	121	272	213	71.8	220	302	218	300	216	298
20000	- 04	117	259	203	68.4	214	305	212	302	210	299
21000	- 06	114	251	197	66.4	211	305	209	302	207	299
22000	- 08	111	244	191	64.4	207	306	205	303	203	299
23000	- 10	108	237	186	62.5	204	306	202	303	199	299
24000	- 12	104	229	180	60.5	201	306	198	302	196	298
25000	- 14	101	222	174	58.6	197	306	195	302	192	297
26000	- 16	97	214	168	56.5	194	305	191	301	188	296
27000	- 18	93	207	162	54.6	190	304	187	299	183	294
28000	- 20	89	199	156	52.6	186	303	183	298	178	291
29000	- 22	86	192	150	50.6	182	302	178	296	174	289
30000	- 24	82	185	145	48.8	178	301	174	294	169	286
31000	- 26	79	178	140	47.0	174	299	169	292	164	283

Figure 5.11.16 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (5500 lbs - 2495 kg)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :	**OAT** : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA − 20°C	ISA − 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	45	**− 34** **156** 42.2 125 **190**	**− 24** **154** 42.6 127 **192**	**− 14** **152** 43.2 128 **194**	**− 4** **150** 43.7 130 **195**	**+ 6** **148** 44.2 131 **196**
18000	45	**− 40** **152** 39.7 118 **194**	**− 30** **150** 40.2 120 **196**	**− 20** **148** 40.8 121 **197**	**− 10** **146** 41.2 122 **199**	**+ 0** **145** 41.7 124 **202**
19000	45	**− 42** **150** 39.0 116 **195**	**− 32** **148** 39.4 117 **197**	**− 22** **147** 39.9 119 **199**	**− 12** **145** 40.4 120 **201**	**− 2** **144** 40.9 121 **203**
20000	45	**− 44** **149** 38.2 113 **197**	**− 34** **147** 38.7 115 **199**	**− 24** **146** 39.1 116 **201**	**− 14** **144** 39.6 118 **203**	**− 4** **143** 40.1 119 **205**
21000	45	**− 46** **148** 37.4 111 **198**	**− 36** **146** 37.9 112 **201**	**− 26** **145** 38.4 114 **203**	**− 16** **143** 38.8 115 **205**	**− 6** **142** 39.3 117 **207**
22000	45	**− 48** **147** 36.7 109 **200**	**− 38** **145** 37.1 110 **202**	**− 28** **144** 37.5 112 **205**	**− 18** **142** 38.1 113 **207**	**− 8** **140** 38.6 115 **208**
23000	45	**− 50** **146** 35.9 107 **202**	**− 40** **144** 36.4 108 **205**	**− 30** **142** 36.8 109 **206**	**− 20** **141** 37.3 111 **208**	**− 10** **139** 37.8 112 **210**
24000	45	**− 52** **145** 35.3 105 **204**	**− 42** **143** 35.7 106 **206**	**− 32** **141** 36.1 107 **208**	**− 22** **139** 36.6 109 **210**	**− 12** **138** 37.0 110 **212**

Figure 5.11.17 (1/2) − CRUISE PERFORMANCE −
Long Range Cruise (5500 lbs − 2495 kg) (Altitude $\leq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (5500 lbs - 2495 kg) (Cont'd)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND : **OAT** : °C **IAS** : KIAS
FF : us gal/h
FF : kg/h **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
24000	45	**– 52** **145** 35.3 105 **204**	**– 42** **143** 35.7 106 **206**	**– 32** **141** 36.1 107 **208**	**– 22** **139** 36.6 109 **210**	**– 12** **138** 37.0 110 **212**
25000	49	**– 54** **150** 35.9 107 **215**	**– 44** **148** 36.4 108 **217**	**– 34** **146** 36.9 110 **219**	**– 24** **145** 37.4 111 **222**	**– 14** **143** 37.9 113 **224**
26000	52	**– 56** **153** 36.6 109 **223**	**– 46** **151** 37.1 110 **226**	**– 36** **150** 37.6 112 **229**	**– 26** **148** 38.0 113 **231**	**– 16** **147** 38.5 114 **233**
27000	54	**– 58** **155** 36.8 109 **230**	**– 48** **153** 37.3 111 **232**	**– 38** **152** 37.8 112 **235**	**– 28** **150** 38.2 114 **237**	**– 18** **148** 38.8 115 **240**
28000	55.5	**– 60** **156** 36.9 110 **235**	**– 50** **154** 37.4 111 **238**	**– 40** **153** 37.9 113 **241**	**– 30** **151** 38.3 114 **243**	**– 20** **149** 38.8 115 **245**
29000	56	**– 62** **156** 36.6 109 **238**	**– 52** **154** 37.1 110 **241**	**– 42** **152** 37.5 111 **244**	**– 32** **150** 38.0 113 **246**	**– 22** **148** 38.5 114 **248**
30000	56.5	**– 64** **155** 36.4 108 **242**	**– 54** **154** 36.9 110 **245**	**– 44** **152** 37.3 111 **247**	**– 34** **150** 37.8 112 **250**	**– 24** **148** 38.3 114 **252**
31000	57	**– 66** **155** 36.1 107 **246**	**– 56** **153** 36.6 109 **248**	**– 46** **151** 37.0 110 **250**	**– 36** **149** 37.5 111 **253**	**– 26** **147** 38.0 113 **255**

Figure 5.11.17 (2/2) – CRUISE PERFORMANCE –
Long Range Cruise (5500 lbs – 2495 kg) (Altitude $\geq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (6300 lbs - 2858 kg)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND : **OAT** : °C **IAS** : KIAS
FF : us gal/h
FF : kg/h **TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	50	**- 34** **159** 44.4 132 **193**	**- 24** **156** 44.9 134 **194**	**- 14** **154** 45.4 135 **196**	**- 4** **153** 46.0 137 **198**	**+ 6** **151** 46.5 138 **200**
18000	50	**- 40** **154** 41.8 124 **197**	**- 30** **153** 42.3 126 **199**	**- 20** **151** 42.8 127 **201**	**- 10** **149** 43.4 129 **203**	**+ 0** **148** 43.9 130 **205**
19000	50	**- 42** **153** 41.0 122 **199**	**- 32** **151** 41.5 123 **201**	**- 22** **150** 42.0 125 **203**	**- 12** **148** 42.5 126 **205**	**- 2** **146** 43.1 128 **206**
20000	50	**- 44** **152** 40.2 120 **201**	**- 34** **150** 40.8 121 **203**	**- 24** **149** 41.2 122 **205**	**- 14** **147** 41.7 124 **206**	**- 4** **145** 42.2 125 **208**
21000	50	**- 46** **151** 39.4 117 **202**	**- 36** **149** 39.9 119 **204**	**- 26** **147** 40.5 120 **206**	**- 16** **145** 40.9 121 **208**	**- 6** **143** 41.4 123 **209**
22000	50	**- 48** **149** 38.7 115 **204**	**- 38** **148** 39.1 116 **206**	**- 28** **146** 39.6 118 **208**	**- 18** **144** 40.1 119 **209**	**- 8** **142** 40.6 121 **210**
23000	50	**- 50** **148** 38.0 113 **206**	**- 40** **146** 38.4 114 **207**	**- 30** **144** 38.9 116 **209**	**- 20** **142** 39.3 117 **210**	**- 10** **140** 39.8 118 **212**
24000	50	**- 52** **147** 37.3 111 **207**	**- 42** **145** 37.8 112 **209**	**- 32** **143** 38.2 113 **210**	**- 22** **141** 38.6 115 **212**	**- 12** **139** 39.1 116 **214**

Figure 5.11.18 (1/2) – CRUISE PERFORMANCE –
Long Range Cruise (6300 lbs – 2858 kg) (Altitude $\leq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (6300 lbs - 2858 kg) (Cont'd)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS**: KTAS

Pressure altitude (feet)	TRQ (%)	ISA − 20°C	ISA − 10°C	ISA	ISA + 10°C	ISA + 20°C
24000	50	**− 52** **147** 37.3 111 **207**	**− 42** **145** 37.8 112 **209**	**− 32** **143** 38.2 113 **210**	**− 22** **141** 38.6 115 **212**	**− 12** **139** 39.1 116 **214**
25000	53	**− 54** **151** 37.6 112 **216**	**− 44** **149** 38.0 113 **218**	**− 34** **147** 38.5 114 **220**	**− 24** **145** 39.0 116 **221**	**− 14** **143** 39.5 117 **223**
26000	56	**− 56** **154** 38.2 114 **224**	**− 46** **152** 38.6 115 **227**	**− 36** **150** 39.2 116 **229**	**− 26** **148** 39.7 118 **231**	**− 16** **146** 40.2 119 **232**
27000	58.5	**− 58** **157** 38.7 115 **232**	**− 48** **155** 39.1 116 **234**	**− 38** **153** 39.6 118 **236**	**− 28** **151** 40.1 119 **238**	**− 18** **148** 40.6 121 **240**
28000	60.5	**− 60** **158** 39.0 116 **238**	**− 50** **156** 39.5 117 **241**	**− 40** **154** 40.0 119 **243**	**− 30** **152** 40.5 120 **244**	**− 20** **150** 41.0 122 **246**
29000	61	**− 62** **157** 38.7 115 **241**	**− 52** **155** 39.1 116 **243**	**− 42** **153** 39.7 118 **245**	**− 32** **151** 40.1 119 **247**	**− 22** **149** 40.7 121 **249**
30000	61.5	**− 64** **157** 38.5 114 **244**	**− 54** **155** 39.0 116 **247**	**− 44** **153** 39.4 117 **249**	**− 34** **150** 39.9 119 **251**	**− 24** **148** 40.4 120 **253**
31000	62	**− 66** **156** 38.2 114 **247**	**− 56** **154** 38.7 115 **250**	**− 46** **152** 39.2 116 **252**	**− 36** **150** 39.7 118 **254**	**− 26** **147** 40.2 119 **256**

Figure 5.11.18 (2/2) − CRUISE PERFORMANCE −
Long Range Cruise (6300 lbs − 2858 kg) (Altitude $\geq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (7100 lbs - 3220 kg)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
OAT : °C		**IAS** : KIAS
FF : us gal/h		
FF : kg/h		**TAS**: KTAS

Pressure altitude (feet)	TRQ (%)	ISA − 20°C	ISA − 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	55	**- 34** **161** 46.6 138 **196**	**- 24** **159** 47.1 140 **198**	**- 14** **157** 47.6 142 **199**	**- 4** **155** 48.3 143 **201**	**+ 6** **153** 48.8 145 **202**
18000	55	**- 40** **157** 43.9 130 **201**	**- 30** **155** 44.4 132 **202**	**- 20** **153** 44.9 134 **204**	**- 10** **151** 45.6 135 **205**	**+ 0** **149** 46.1 137 **207**
19000	55	**- 42** **155** 43.1 128 **202**	**- 32** **154** 43.6 129 **204**	**- 22** **152** 44.1 131 **205**	**- 12** **149** 44.6 133 **207**	**- 2** **147** 45.1 134 **208**
20000	55	**- 44** **154** 42.2 125 **203**	**- 34** **152** 42.7 127 **205**	**- 24** **150** 43.3 129 **206**	**- 14** **148** 43.8 130 **208**	**- 4** **146** 44.3 132 **209**
21000	55	**- 46** **153** 41.5 123 **205**	**- 36** **150** 41.9 125 **206**	**- 26** **148** 42.4 126 **208**	**- 16** **146** 43.0 128 **209**	**- 6** **144** 43.5 129 **210**
22000	55	**- 48** **151** 40.8 121 **206**	**- 38** **149** 41.2 122 **208**	**- 28** **147** 41.7 124 **209**	**- 18** **145** 42.1 125 **211**	**- 8** **143** 42.6 127 **212**
23000	55	**- 50** **150** 40.0 119 **208**	**- 40** **147** 40.6 121 **209**	**- 30** **145** 41.0 122 **211**	**- 20** **143** 41.5 123 **212**	**- 10** **141** 41.9 125 **212**
24000	55	**- 52** **148** 39.4 117 **209**	**- 42** **146** 39.8 118 **211**	**- 32** **144** 40.4 120 **212**	**- 22** **141** 40.8 121 **213**	**- 12** **139** 41.3 123 **214**

Figure 5.11.19 (1/2) – CRUISE PERFORMANCE –
Long Range Cruise (7100 lbs – 3220 kg) (Altitude $\leq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (7100 lbs - 3220 kg) (Cont'd)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
24000	55	**– 52** **148** 39.4 117 **209**	**– 42** **146** 39.8 118 **211**	**– 32** **144** 40.4 120 **212**	**– 22** **141** 40.8 121 **213**	**– 12** **139** 41.3 123 **214**
25000	58	**– 54** **152** 39.6 118 **218**	**– 44** **149** 40.0 119 **219**	**– 34** **148** 40.6 121 **221**	**– 24** **145** 41.1 122 **222**	**– 14** **143** 41.6 124 **223**
26000	61	**– 56** **155** 40.2 119 **226**	**– 46** **153** 40.7 121 **228**	**– 36** **151** 41.2 122 **229**	**– 26** **149** 41.7 124 **231**	**– 16** **146** 42.2 125 **232**
27000	63.5	**– 58** **158** 40.8 121 **234**	**– 48** **155** 41.2 122 **235**	**– 38** **153** 41.7 124 **237**	**– 28** **151** 42.3 126 **239**	**– 18** **149** 42.8 127 **240**
28000	65.5	**– 60** **159** 41.1 122 **240**	**– 50** **157** 41.6 124 **241**	**– 40** **154** 42.0 125 **243**	**– 30** **152** 42.6 127 **245**	**– 20** **150** 43.1 128 **246**
29000	66	**– 62** **158** 40.8 121 **242**	**– 52** **156** 41.3 123 **244**	**– 42** **153** 41.8 124 **246**	**– 32** **151** 42.2 125 **248**	**– 22** **149** 42.8 127 **249**
30000	66.5	**– 64** **158** 40.6 121 **245**	**– 54** **155** 41.1 122 **247**	**– 44** **153** 41.6 124 **249**	**– 34** **150** 42.1 125 **251**	**– 24** **148** 42.6 127 **252**
31000	67	**– 66** **157** 40.3 120 **248**	**– 56** **154** 40.8 121 **250**	**– 46** **152** 41.3 123 **252**	**– 36** **149** 41.9 125 **253**	**– 26** **147** 42.4 126 **255**

Figure 5.11.19 (2/2) – CRUISE PERFORMANCE –
Long Range Cruise (7100 lbs – 3220 kg) (Altitude $\geq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

5.11 - CRUISE PERFORMANCE

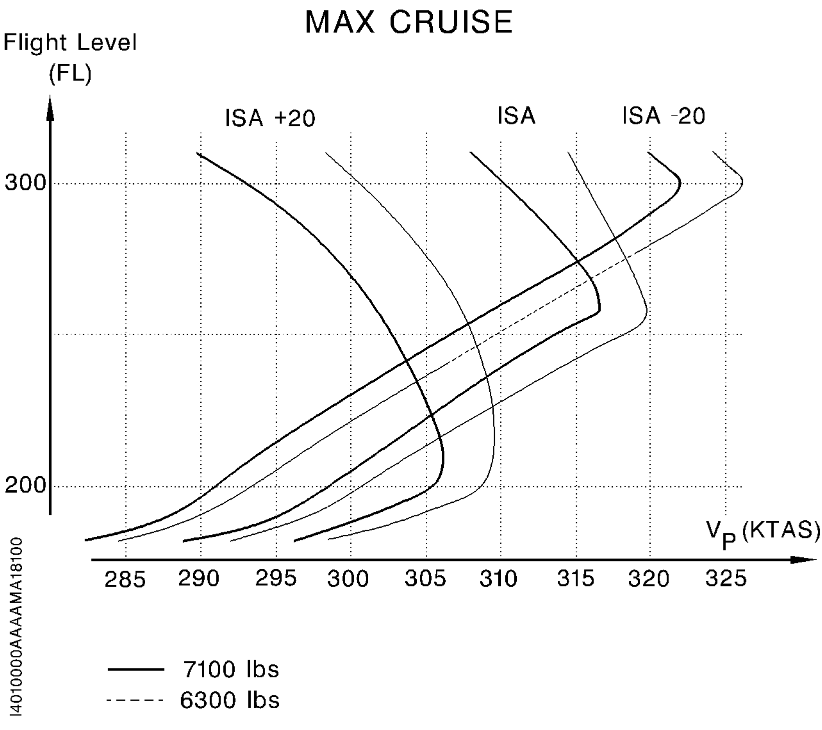


Figure 5.11.1 - CRUISE PERFORMANCE (Maximum cruise)

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA - 20°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 290 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 290 : reduce the torque value mentioned in the table below by 5 %, leading to airspeed reduction by 3 KIAS.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	- 03	121	329	258	86.9	246	241	245	240	244	238
5000	- 13	121	303	238	80.0	241	253	240	252	239	250
10000	- 23	121	282	221	74.5	236	265	234	264	233	262
15000	- 33	121	270	212	71.4	230	280	229	278	227	276
18000	- 39	121	262	205	69.1	227	289	226	287	224	285
20000	- 43	121	256	201	67.7	225	295	224	293	222	291
21000	- 45	121	254	200	67.2	224	298	222	296	221	294
22000	- 46	121	252	198	66.7	223	302	221	299	219	297
23000	- 48	121	251	197	66.2	222	305	220	303	218	300
24000	- 50	121	249	196	65.9	221	308	219	306	217	303
25000	- 52	121	248	195	65.6	220	312	218	309	216	307
26000	- 54	121	247	194	65.3	219	315	217	313	215	310
27000	- 56	121	247	194	65.2	218	319	216	316	213	313
28000	- 58	120	247	194	65.2	216	322	214	321	212	318
29000	- 60	114	247	194	65.3	215	326	213	323	211	320
30000	- 62	110	247	194	65.3	214	329	211	326	209	322
31000	- 64	106	238	187	62.9	209	328	207	324	204	320

Figure 5.11.2 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA - 10°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  . Below FL 270 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.
  . Above FL 270 : reduce the torque value mentioned in the table below by 6 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 07	121	332	261	87.8	245	244	244	242	242	241
5000	- 03	121	306	240	80.8	240	256	238	255	237	253
10000	- 13	121	285	223	75.2	234	269	232	267	231	265
15000	- 23	121	273	214	72.1	229	283	227	281	225	279
18000	- 29	121	264	207	69.8	225	292	224	290	222	288
20000	- 33	121	259	203	68.4	223	299	221	297	219	294
21000	- 35	121	257	201	67.8	222	302	220	300	218	297
22000	- 36	121	255	200	67.3	221	305	219	303	217	300
23000	- 38	121	253	198	66.8	220	309	218	306	216	304
24000	- 40	121	252	198	66.5	219	312	217	310	215	307
25000	- 42	121	251	197	66.2	217	316	216	313	213	310
26000	- 44	121	249	196	65.9	216	319	214	316	212	313
27000	- 46	118	249	196	65.8	215	322	213	321	211	318
28000	- 48	114	249	195	65.7	214	326	212	323	209	320
29000	- 50	109	241	189	63.6	210	325	207	322	204	318
30000	- 52	105	232	182	61.2	205	324	203	321	200	317
31000	- 54	102	223	175	58.9	201	323	198	319	196	315

Figure 5.11.3 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA - 5°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 260 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 260 : reduce the torque value mentioned in the table below by 7 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 12	121	334	262	88.3	244	245	243	244	242	243
5000	+ 02	121	307	241	81.2	239	257	238	256	236	255
10000	- 08	121	286	225	75.6	233	270	232	269	230	267
15000	- 18	121	274	215	72.5	228	285	226	283	224	281
18000	- 24	121	265	208	70.1	224	294	223	292	221	290
20000	- 28	121	260	204	68.7	222	301	220	298	218	296
21000	- 30	121	258	203	68.2	221	304	219	302	217	299
22000	- 31	121	256	201	67.6	220	307	218	305	216	302
23000	- 33	121	254	200	67.2	219	311	217	308	215	305
24000	- 35	121	253	198	66.8	217	314	216	312	213	309
25000	- 37	121	252	198	66.5	216	317	214	315	212	312
26000	- 39	120	251	197	66.3	215	321	213	319	211	316
27000	- 41	116	250	196	66.1	214	324	212	322	209	319
28000	- 43	112	243	191	64.2	210	324	208	322	205	318
29000	- 45	107	234	184	61.9	206	323	203	321	200	317
30000	- 47	103	226	177	59.7	202	323	199	319	197	314
31000	- 49	100	218	171	57.6	198	322	196	319	192	313

Figure 5.11.4 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 250 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 250 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 17	121	336	264	88.8	243	246	242	245	241	244
5000	+ 07	121	309	242	81.6	238	259	237	257	235	256
10000	- 03	121	288	226	76.0	232	272	231	270	229	269
15000	- 13	121	276	216	72.8	227	287	225	285	223	283
18000	- 19	121	267	209	70.5	223	296	222	294	220	291
20000	- 23	121	261	205	69.0	221	302	219	300	217	298
21000	- 25	121	259	203	68.4	220	306	218	303	216	301
22000	- 26	121	257	202	68.0	219	309	217	307	215	304
23000	- 28	121	256	201	67.5	218	312	216	310	214	307
24000	- 30	121	254	199	67.1	216	316	215	313	212	310
25000	- 32	120	253	198	66.8	215	319	213	318	211	314
26000	- 34	116	252	198	66.6	214	323	212	320	210	317
27000	- 36	112	245	192	64.6	210	323	208	319	205	315
28000	- 38	109	236	185	62.4	206	322	204	319	201	315
29000	- 40	104	228	179	60.1	202	321	199	317	197	313
30000	- 42	100	220	172	58.0	198	320	196	316	193	311
31000	- 44	97	211	166	55.8	194	319	192	315	188	309

Figure 5.11.5 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA + 5°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 240 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 240 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 3 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 22	121	338	265	89.3	243	248	241	247	240	245
5000	+ 12	121	310	244	82.0	237	260	236	259	234	257
10000	+ 02	121	289	227	76.4	231	273	230	272	228	270
15000	– 08	121	277	218	73.2	226	288	224	286	222	284
18000	– 14	121	268	210	70.8	222	297	221	295	219	293
20000	– 18	121	263	206	69.4	220	304	218	302	216	299
21000	– 20	121	260	204	68.8	219	307	217	305	215	302
22000	– 21	121	259	203	68.3	218	311	216	308	214	305
23000	– 23	121	257	201	67.8	216	314	215	312	213	309
24000	– 25	121	255	200	67.4	215	317	213	316	211	313
25000	– 27	118	254	199	67.1	214	321	212	319	210	316
26000	– 29	114	247	194	65.2	210	321	208	319	206	315
27000	– 31	110	238	187	62.9	206	320	204	318	201	314
28000	– 33	106	229	180	60.6	202	320	200	317	197	312
29000	– 35	101	221	174	58.5	198	319	196	315	193	310
30000	– 37	98	213	167	56.3	195	318	192	314	188	309
31000	– 39	95	205	161	54.2	190	316	187	313	183	306

Figure 5.11.6 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA + 10°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 230 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 230 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 4 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 27	121	340	267	89.8	242	249	241	248	239	247
5000	+ 17	121	312	245	82.5	236	261	235	260	233	259
10000	+ 07	121	291	228	76.8	230	275	229	273	227	272
15000	- 03	121	279	219	73.6	225	290	223	288	221	286
18000	- 09	121	269	211	71.1	221	299	220	297	218	295
20000	- 13	121	264	207	69.7	219	306	217	304	215	301
21000	- 15	121	262	205	69.1	218	309	216	307	214	304
22000	- 16	121	260	204	68.6	217	312	215	310	213	307
23000	- 18	121	258	202	68.1	215	316	214	313	212	310
24000	- 20	119	256	201	67.7	214	319	212	317	210	314
25000	- 22	115	249	196	65.9	211	320	208	317	206	314
26000	- 24	111	240	189	63.5	207	319	204	316	201	312
27000	- 26	107	232	182	61.2	202	318	200	315	197	311
28000	- 28	102	223	175	59.0	198	317	197	313	193	308
29000	- 30	98	215	169	56.8	195	316	192	312	189	306
30000	- 32	96	207	163	54.7	191	315	188	311	184	305
31000	- 34	92	199	157	52.7	187	314	183	308	179	302

Figure 5.11.7 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Maximum cruise

Conditions : ***ISA + 20°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Use preferably recommended cruise power*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 200 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 200 : reduce the torque value mentioned in the table below by 10 %, leading to airspeed reduction by 6 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 37	121	344	270	90.8	240	252	239	251	238	249
5000	+ 27	121	316	248	83.4	234	264	233	263	232	261
10000	+ 17	121	294	231	77.6	229	278	227	276	226	274
15000	+ 07	121	281	221	74.3	223	293	221	291	220	289
18000	+ 01	121	272	213	71.8	220	302	218	300	216	298
20000	- 03	121	266	209	70.4	217	309	215	307	213	304
21000	- 05	120	264	207	69.8	216	312	214	310	212	307
22000	- 06	117	257	202	67.9	213	313	211	310	208	307
23000	- 08	113	249	195	65.7	209	313	207	310	204	306
24000	- 10	109	241	189	63.6	205	313	203	310	200	305
25000	- 12	106	233	183	61.5	202	312	199	309	197	304
26000	- 14	102	224	176	59.3	198	312	196	308	193	303
27000	- 16	99	217	170	57.3	195	311	192	307	188	302
28000	- 18	95	209	164	55.3	191	310	188	306	184	300
29000	- 20	92	202	158	53.3	187	309	183	304	179	298
30000	- 22	89	195	153	51.4	182	308	179	302	174	295
31000	- 24	86	187	147	49.5	178	307	174	300	169	292

Figure 5.11.8 - 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 exceeding 121.4 % TRQ.

NORMAL CRUISE (recommended)

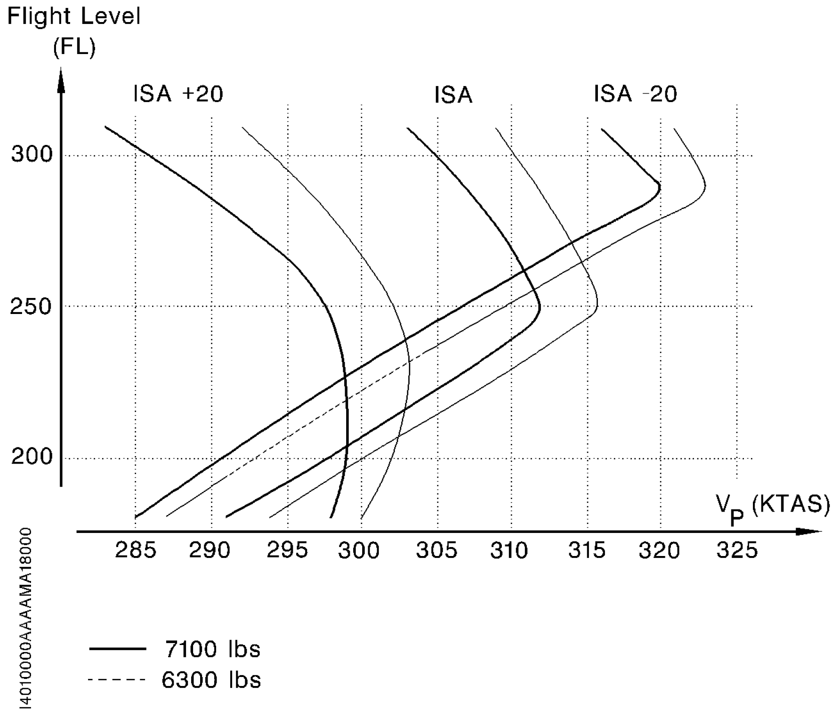


Figure 5.11.9 - CRUISE PERFORMANCE (Recommended cruise)

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA - 20°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 290 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 290 : reduce the torque value mentioned in the table below by 6 %, leading to airspeed reduction by 4 KIAS.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	– 03	121	329	258	86.9	246	241	245	240	244	238
5000	– 13	121	303	238	80.0	241	253	240	252	239	250
10000	– 23	121	282	221	74.5	236	265	234	264	233	262
15000	– 33	121	270	212	71.4	230	280	229	278	227	276
18000	– 39	121	262	205	69.1	227	289	226	287	224	285
20000	– 43	121	256	201	67.7	225	295	224	293	222	291
21000	– 45	121	254	200	67.2	224	298	222	296	221	294
22000	– 46	121	252	198	66.7	223	302	221	299	219	297
23000	– 48	121	251	197	66.2	222	305	220	303	218	300
24000	– 50	121	249	196	65.9	221	308	219	306	217	303
25000	– 52	121	248	195	65.6	220	312	218	309	216	307
26000	– 54	120	247	194	65.3	219	315	217	313	215	310
27000	– 56	118	247	194	65.2	218	319	216	316	213	313
28000	– 58	114	247	194	65.2	216	322	214	320	212	317
29000	– 60	110	247	194	65.2	215	326	213	323	211	320
30000	– 62	106	240	188	63.3	211	326	209	322	206	318
31000	– 64	102	231	181	60.9	207	324	204	321	201	316

Figure 5.11.10 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA - 10°C***
Landing gear and flaps UP
2000 RPM (*) - BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 260 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 260 : reduce the torque value mentioned in the table below by 7 %, leading to airspeed reduction by 3 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt) 5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 07	121	332	261	87.8	245	244	244	242	242	241
5000	- 03	121	306	240	80.0	240	256	238	255	237	253
10000	- 13	121	285	223	75.2	234	269	232	267	231	265
15000	- 23	121	273	214	72.1	229	283	227	281	225	279
18000	- 29	121	264	207	69.8	225	292	224	290	222	288
20000	- 33	121	259	203	68.4	223	299	221	297	219	294
21000	- 35	121	257	201	67.8	222	302	220	300	218	297
22000	- 36	121	255	200	67.3	221	305	219	303	217	300
23000	- 38	121	253	198	66.8	220	309	218	306	216	304
24000	- 40	121	252	198	66.5	219	312	217	310	215	307
25000	- 42	120	251	197	66.2	217	316	216	313	213	310
26000	- 44	116	249	196	65.9	216	319	214	316	212	313
27000	- 46	112	248	195	65.5	215	322	212	319	210	315
28000	- 48	109	240	188	63.3	210	321	208	318	206	314
29000	- 50	105	231	182	61.1	206	321	204	317	201	313
30000	- 52	101	223	175	58.9	202	320	200	316	197	312
31000	- 54	97	215	169	56.8	198	319	196	315	193	310

Figure 5.11.11 - 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA - 5°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  . Below FL 250 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.
  . Above FL 250 : reduce the torque value mentioned in the table below by 7 %, leading to airspeed reduction by 3 KIAS + 1 KIAS/2000 ft.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 12	121	334	262	88.3	244	245	243	244	242	243
5000	+ 02	121	307	241	81.2	239	257	238	256	236	255
10000	– 08	121	286	225	75.6	233	270	232	269	230	267
15000	– 18	121	274	215	72.5	228	285	226	283	224	281
18000	– 24	121	265	208	70.1	224	294	223	292	221	290
20000	– 28	121	260	204	68.7	222	301	220	298	218	296
21000	– 30	121	258	203	68.2	221	304	219	302	217	299
22000	– 31	121	256	201	67.6	220	307	218	305	216	302
23000	– 33	121	254	200	67.2	219	311	217	308	215	305
24000	– 35	121	253	198	66.8	217	314	216	312	213	309
25000	– 37	117	252	198	66.5	216	317	214	316	212	313
26000	– 39	114	250	196	66.0	215	320	212	318	210	315
27000	– 41	110	241	189	63.7	210	320	208	317	206	314
28000	– 43	107	232	182	61.4	206	319	204	317	201	312
29000	– 45	102	224	176	59.3	202	318	200	315	197	310
30000	– 47	98	217	170	57.2	198	317	196	313	193	308
31000	– 49	95	209	164	55.1	195	316	192	312	188	306

Figure 5.11.12 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 240 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 240 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 4 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 17	121	336	264	88.8	243	246	242	245	241	244
5000	+ 07	121	309	242	81.6	238	259	237	257	235	256
10000	– 03	121	288	226	76.0	232	272	231	270	229	269
15000	– 13	121	276	216	72.8	227	287	225	285	223	283
18000	– 19	121	267	209	70.5	223	296	222	294	220	291
20000	– 23	121	261	205	69.0	221	302	219	300	217	298
21000	– 25	121	259	203	68.4	220	306	218	303	216	301
22000	– 26	121	257	202	68.0	219	309	217	307	215	304
23000	– 28	121	256	201	67.5	218	312	216	310	214	307
24000	– 30	121	254	199	67.1	216	316	215	313	212	310
25000	– 32	114	252	198	66.5	215	319	213	316	210	312
26000	– 34	110	243	191	64.2	211	318	208	315	206	311
27000	– 36	106	234	184	61.9	206	317	204	314	201	310
28000	– 38	103	226	177	59.7	202	317	200	313	197	308
29000	– 40	99	218	171	57.6	198	316	197	312	193	307
30000	– 42	95	210	165	55.5	195	315	192	310	189	305
31000	– 44	92	202	159	53.4	191	314	188	309	184	303

Figure 5.11.13 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA + 5°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 220 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 220 : reduce the torque value mentioned in the table below by 8 %, leading to airspeed reduction by 2 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 22	121	338	265	89.3	243	248	241	247	240	245
5000	+ 12	121	310	244	82.0	237	260	236	259	234	257
10000	+ 02	121	289	227	76.4	231	273	230	272	228	270
15000	– 08	121	277	218	73.2	226	288	224	286	222	284
18000	– 14	121	268	210	70.8	222	297	221	295	219	293
20000	– 18	121	263	206	69.4	220	304	218	302	216	299
21000	– 20	121	260	204	68.8	219	307	217	305	215	302
22000	– 21	121	259	203	68.3	218	311	216	308	214	305
23000	– 23	121	257	201	67.8	216	314	215	312	213	309
24000	– 25	116	253	199	66.9	215	317	213	315	210	311
25000	– 27	112	245	193	64.8	211	316	209	314	206	311
26000	– 29	108	236	185	62.4	207	316	204	313	202	309
27000	– 31	104	228	179	60.2	202	315	200	312	197	308
28000	– 33	100	220	173	58.1	198	314	197	311	193	306
29000	– 35	96	212	166	55.9	195	313	192	309	189	303
30000	– 37	93	204	160	53.9	191	312	188	307	184	301
31000	– 39	90	196	154	51.9	187	311	183	305	179	299

Figure 5.11.14 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA + 10°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  - *. Below FL 210 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.*
  - *. Above FL 210 : reduce the torque value mentioned in the table below by 9 %, leading to airspeed reduction by 4 KIAS + 1 KIAS/2000 ft.*

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 27	121	340	267	89.8	242	249	241	248	239	247
5000	+ 17	121	312	245	82.5	236	261	235	260	233	259
10000	+ 07	121	291	228	76.8	230	275	229	273	227	272
15000	– 03	121	279	219	73.6	225	290	223	288	221	286
18000	– 09	121	269	211	71.1	221	299	220	297	218	295
20000	– 13	121	264	207	69.7	219	306	217	304	215	301
21000	– 15	121	262	205	69.1	218	309	216	307	214	304
22000	– 16	121	260	204	68.6	217	312	215	310	213	307
23000	– 18	116	254	200	67.2	214	314	212	311	210	308
24000	– 20	113	246	193	65.1	211	314	208	311	206	307
25000	– 22	108	239	188	63.1	207	314	205	311	202	307
26000	– 24	105	230	181	60.8	203	313	200	310	197	305
27000	– 26	101	222	174	58.7	199	312	197	309	194	304
28000	– 28	97	214	168	56.5	195	311	193	307	189	302
29000	– 30	93	206	161	54.3	191	310	188	306	184	300
30000	– 32	90	198	156	52.4	187	309	184	304	180	297
31000	– 34	87	191	150	50.4	183	308	179	301	174	294

Figure 5.11.15 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Normal (recommended) cruise

Conditions : ***ISA + 20°C***
Landing gear and flaps UP
2000 RPM (*) – BLEED AUTO and "BLEED HI" MSG OFF

NOTE :

- *Power recommended by PRATT & WHITNEY CANADA*
- *If "BLEED HI" MSG ON :*
  . Below FL 160 : fuel flow will increase by 2 %, reduce the torque only to respect the maximum power of 121.4 %.
  . Above FL 160 : reduce the torque value mentioned in the table below by 12 %, leading to airspeed reduction by 7 KIAS + 1 KIAS/2000 ft.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			AIRSPEEDS (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	us gal / h	IAS	TAS	IAS	TAS	IAS	TAS
0	+ 37	121	344	270	90.8	240	252	239	251	238	249
5000	+ 27	121	316	248	83.4	234	264	233	263	232	261
10000	+ 17	121	294	231	77.6	229	278	227	276	226	274
15000	+ 07	121	281	221	74.3	223	293	221	291	220	289
18000	+ 01	121	272	213	71.8	220	302	218	300	216	298
20000	– 03	117	259	203	68.4	214	305	212	302	210	299
21000	– 05	114	251	197	66.4	211	305	209	302	207	299
22000	– 06	111	244	191	64.4	207	306	205	303	203	299
23000	– 08	108	237	186	62.5	204	306	202	303	199	299
24000	– 10	105	229	180	60.5	201	306	198	302	196	298
25000	– 12	101	222	174	58.6	197	306	195	302	192	297
26000	– 14	98	214	168	56.5	194	305	191	301	188	296
27000	– 16	94	207	162	54.6	190	304	187	299	183	294
28000	– 18	91	199	156	52.6	186	303	183	298	178	291
29000	– 20	87	192	150	50.6	182	302	178	296	174	289
30000	– 22	84	185	145	48.8	178	301	174	294	169	286
31000	– 24	81	178	140	47.0	174	299	169	292	164	283

Figure 5.11.16 – 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (5500 lbs - 2495 kg)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	45	**- 33** **156** 42.2 125 **190**	**- 23** **154** 42.6 127 **192**	**- 13** **152** 43.2 128 **194**	**- 3** **150** 43.7 130 **195**	**+ 7** **148** 44.2 131 **196**
18000	45	**- 39** **152** 39.7 118 **194**	**- 29** **150** 40.2 120 **196**	**- 19** **148** 40.8 121 **197**	**- 9** **146** 41.2 122 **199**	**+ 1** **145** 41.7 124 **202**
19000	45	**- 41** **150** 39.0 116 **195**	**- 31** **148** 39.4 117 **197**	**- 21** **147** 39.9 119 **199**	**- 11** **145** 40.4 120 **201**	**- 1** **144** 40.9 121 **203**
20000	45	**- 43** **149** 38.2 113 **197**	**- 33** **147** 38.7 115 **199**	**- 23** **146** 39.1 116 **201**	**- 13** **144** 39.6 118 **203**	**- 3** **143** 40.1 119 **205**
21000	45	**- 45** **148** 37.4 111 **198**	**- 35** **146** 37.9 112 **201**	**- 25** **145** 38.4 114 **203**	**- 15** **143** 38.8 115 **205**	**- 5** **142** 39.3 117 **207**
22000	45	**- 46** **147** 36.7 109 **200**	**- 36** **145** 37.1 110 **202**	**- 26** **144** 37.5 112 **205**	**- 16** **142** 38.1 113 **207**	**- 6** **140** 38.6 115 **208**
23000	45	**- 48** **146** 35.9 107 **202**	**- 38** **144** 36.4 108 **205**	**- 28** **142** 36.8 109 **206**	**- 18** **141** 37.3 111 **208**	**- 8** **139** 37.8 112 **210**
24000	45	**- 50** **145** 35.3 105 **204**	**- 40** **143** 35.7 106 **206**	**- 30** **141** 36.1 107 **208**	**- 20** **139** 36.6 109 **210**	**- 10** **138** 37.0 110 **212**

Figure 5.11.17 (1/2) – CRUISE PERFORMANCE –
Long Range Cruise (5500 lbs – 2495 kg) (Altitude $\leq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (5500 lbs - 2495 kg) (Cont'd)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA − 20°C	ISA − 10°C	ISA	ISA + 10°C	ISA + 20°C
24000	45	**− 50** **145** 35.3 105 **204**	**− 40** **143** 35.7 106 **206**	**− 30** **141** 36.1 107 **208**	**− 20** **139** 36.6 109 **210**	**− 10** **138** 37.0 110 **212**
25000	49	**− 52** **150** 35.9 107 **215**	**− 42** **148** 36.4 108 **217**	**− 32** **146** 36.9 110 **219**	**− 22** **145** 37.4 111 **222**	**− 12** **143** 37.9 113 **224**
26000	52	**− 54** **153** 36.6 109 **223**	**− 44** **151** 37.1 110 **226**	**− 34** **150** 37.6 112 **229**	**− 24** **148** 38.0 113 **231**	**− 14** **147** 38.5 114 **233**
27000	54	**− 56** **155** 36.8 109 **230**	**− 46** **153** 37.3 111 **232**	**− 36** **152** 37.8 112 **235**	**− 26** **150** 38.2 114 **237**	**− 16** **148** 38.8 115 **240**
28000	55.5	**− 58** **156** 36.9 110 **235**	**− 48** **154** 37.4 111 **238**	**− 38** **153** 37.9 113 **241**	**− 28** **151** 38.3 114 **243**	**− 18** **149** 38.8 115 **245**
29000	56	**− 60** **156** 36.6 109 **238**	**− 50** **154** 37.1 110 **241**	**− 40** **152** 37.5 111 **244**	**− 30** **150** 38.0 113 **246**	**− 20** **148** 38.5 114 **248**
30000	56.5	**− 62** **155** 36.4 108 **242**	**− 52** **154** 36.9 110 **245**	**− 42** **152** 37.3 111 **247**	**− 32** **150** 37.8 112 **250**	**− 22** **148** 38.3 114 **252**
31000	57	**− 64** **155** 36.1 107 **246**	**− 54** **153** 36.6 109 **248**	**− 44** **151** 37.0 110 **250**	**− 34** **149** 37.5 111 **253**	**− 24** **147** 38.0 113 **255**

Figure 5.11.17 (2/2) − CRUISE PERFORMANCE −
Long Range Cruise (5500 lbs − 2495 kg) (Altitude $\geq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (6300 lbs - 2858 kg)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS**: KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	50	**- 33** **159** 44.4 132 **193**	**- 23** **156** 44.9 134 **194**	**- 13** **154** 45.4 135 **196**	**- 3** **153** 46.0 137 **198**	**+ 7** **151** 46.5 138 **200**
18000	50	**- 39** **154** 41.8 124 **197**	**- 29** **153** 42.3 126 **199**	**- 19** **151** 42.8 127 **201**	**- 9** **149** 43.4 129 **203**	**+ 1** **148** 43.9 130 **205**
19000	50	**- 41** **153** 41.0 122 **199**	**- 31** **151** 41.5 123 **201**	**- 21** **150** 42.0 125 **203**	**- 11** **148** 42.5 126 **205**	**- 1** **146** 43.1 128 **206**
20000	50	**- 43** **152** 40.2 120 **201**	**- 33** **150** 40.8 121 **203**	**- 23** **149** 41.2 122 **205**	**- 13** **147** 41.7 124 **206**	**- 3** **145** 42.2 125 **208**
21000	50	**- 45** **151** 39.4 117 **202**	**- 35** **149** 39.9 119 **204**	**- 25** **147** 40.5 120 **206**	**- 15** **145** 40.9 121 **208**	**- 5** **143** 41.4 123 **209**
22000	50	**- 46** **149** 38.7 115 **204**	**- 36** **148** 39.1 116 **206**	**- 26** **146** 39.6 118 **208**	**- 16** **144** 40.1 119 **209**	**- 6** **142** 40.6 121 **210**
23000	50	**- 48** **148** 38.0 113 **206**	**- 38** **146** 38.4 114 **207**	**- 28** **144** 38.9 116 **209**	**- 18** **142** 39.3 117 **210**	**- 8** **140** 39.8 118 **212**
24000	50	**- 50** **147** 37.3 111 **207**	**- 40** **145** 37.8 112 **209**	**- 30** **143** 38.2 113 **210**	**- 20** **141** 38.6 115 **212**	**- 10** **139** 39.1 116 **214**

Figure 5.11.18 (1/2) – CRUISE PERFORMANCE –
Long Range Cruise (6300 lbs – 2858 kg) (Altitude $\leq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (6300 lbs - 2858 kg) (Cont'd)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA − 20°C	ISA − 10°C	ISA	ISA + 10°C	ISA + 20°C
24000	50	**− 50** **147** 37.3 111 **207**	**− 40** **145** 37.8 112 **209**	**− 30** **143** 38.2 113 **210**	**− 20** **141** 38.6 115 **212**	**− 10** **139** 39.1 116 **214**
25000	53	**− 52** **151** 37.6 112 **216**	**− 42** **149** 38.0 113 **218**	**− 32** **147** 38.5 114 **220**	**− 22** **145** 39.0 116 **221**	**− 12** **143** 39.5 117 **223**
26000	56	**− 54** **154** 38.2 114 **224**	**− 44** **152** 38.6 115 **227**	**− 34** **150** 39.2 116 **229**	**− 24** **148** 39.7 118 **231**	**− 14** **146** 40.2 119 **232**
27000	58.5	**− 56** **157** 38.7 115 **232**	**− 46** **155** 39.1 116 **234**	**− 36** **153** 39.6 118 **236**	**− 26** **151** 40.1 119 **238**	**− 16** **148** 40.6 121 **240**
28000	60.5	**− 58** **158** 39.0 116 **238**	**− 48** **156** 39.5 117 **241**	**− 38** **154** 40.0 119 **243**	**− 28** **152** 40.5 120 **244**	**− 18** **150** 41.0 122 **246**
29000	61	**− 60** **157** 38.7 115 **241**	**− 50** **155** 39.1 116 **243**	**− 40** **153** 39.7 118 **245**	**− 30** **151** 40.1 119 **247**	**− 20** **149** 40.7 121 **249**
30000	61.5	**− 62** **157** 38.5 114 **244**	**− 52** **155** 39.0 116 **247**	**− 42** **153** 39.4 117 **249**	**− 32** **150** 39.9 119 **251**	**− 22** **148** 40.4 120 **253**
31000	62	**− 64** **156** 38.2 114 **247**	**− 54** **154** 38.7 115 **250**	**− 44** **152** 39.2 116 **252**	**− 34** **150** 39.7 118 **254**	**− 24** **147** 40.2 119 **256**

Figure 5.11.18 (2/2) − CRUISE PERFORMANCE −
Long Range Cruise (6300 lbs − 2858 kg) (Altitude $\geq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (7100 lbs - 3220 kg)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	55	**- 33** **161** 46.6 138 **196**	**- 23** **159** 47.1 140 **198**	**- 13** **157** 47.6 142 **199**	**- 3** **155** 48.3 143 **201**	**+ 7** **153** 48.8 145 **202**
18000	55	**- 39** **157** 43.9 130 **201**	**- 29** **155** 44.4 132 **202**	**- 19** **153** 44.9 134 **204**	**- 9** **151** 45.6 135 **205**	**+ 1** **149** 46.1 137 **207**
19000	55	**- 41** **155** 43.1 128 **202**	**- 31** **154** 43.6 129 **204**	**- 21** **152** 44.1 131 **205**	**- 11** **149** 44.6 133 **207**	**- 1** **147** 45.1 134 **208**
20000	55	**- 43** **154** 42.2 125 **203**	**- 33** **152** 42.7 127 **205**	**- 23** **150** 43.3 129 **206**	**- 13** **148** 43.8 130 **208**	**- 3** **146** 44.3 132 **209**
21000	55	**- 45** **153** 41.5 123 **205**	**- 35** **150** 41.9 125 **206**	**- 25** **148** 42.4 126 **208**	**- 15** **146** 43.0 128 **209**	**- 5** **144** 43.5 129 **210**
22000	55	**- 46** **151** 40.8 121 **206**	**- 36** **149** 41.2 122 **208**	**- 26** **147** 41.7 124 **209**	**- 16** **145** 42.1 125 **211**	**- 6** **143** 42.6 127 **212**
23000	55	**- 48** **150** 40.0 119 **208**	**- 38** **147** 40.6 121 **209**	**- 28** **145** 41.0 122 **211**	**- 18** **143** 41.5 123 **212**	**- 8** **141** 41.9 125 **212**
24000	55	**- 50** **148** 39.4 117 **209**	**- 40** **146** 39.8 118 **211**	**- 30** **144** 40.4 120 **212**	**- 20** **141** 40.8 121 **213**	**- 10** **139** 41.3 123 **214**

Figure 5.11.19 (1/2) – CRUISE PERFORMANCE –
Long Range Cruise (7100 lbs – 3220 kg) (Altitude $\leq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

CRUISE PERFORMANCE

Long Range Cruise (7100 lbs - 3220 kg) (Cont'd)

Conditions : Landing gear and flaps UP
2000 RPM (*)
BLEED AUTO or HI

LEGEND :		
	OAT : °C	**IAS** : KIAS
	FF : us gal/h	
	FF : kg/h	**TAS** : KTAS

Pressure altitude (feet)	TRQ (%)	ISA – 20°C	ISA – 10°C	ISA	ISA + 10°C	ISA + 20°C
24000	55	**- 50** **148** 39.4 117 **209**	**- 40** **146** 39.8 118 **211**	**- 30** **144** 40.4 120 **212**	**- 20** **141** 40.8 121 **213**	**- 10** **139** 41.3 123 **214**
25000	58	**- 52** **152** 39.6 118 **218**	**- 42** **149** 40.0 119 **219**	**- 32** **148** 40.6 121 **221**	**- 22** **145** 41.1 122 **222**	**- 12** **143** 41.6 124 **223**
26000	61	**- 54** **155** 40.2 119 **226**	**- 44** **153** 40.7 121 **228**	**- 34** **151** 41.2 122 **229**	**- 24** **149** 41.7 124 **231**	**- 14** **146** 42.2 125 **232**
27000	63.5	**- 56** **158** 40.8 121 **234**	**- 46** **155** 41.2 122 **235**	**- 36** **153** 41.7 124 **237**	**- 26** **151** 42.3 126 **239**	**- 16** **149** 42.8 127 **240**
28000	65.5	**- 58** **159** 41.1 122 **240**	**- 48** **157** 41.6 124 **241**	**- 38** **154** 42.0 125 **243**	**- 28** **152** 42.6 127 **245**	**- 18** **150** 43.1 128 **246**
29000	66	**- 60** **158** 40.8 121 **242**	**- 50** **156** 41.3 123 **244**	**- 40** **153** 41.8 124 **246**	**- 30** **151** 42.2 125 **248**	**- 20** **149** 42.8 127 **249**
30000	66.5	**- 62** **158** 40.6 121 **245**	**- 52** **155** 41.1 122 **247**	**- 42** **153** 41.6 124 **249**	**- 32** **150** 42.1 125 **251**	**- 22** **148** 42.6 127 **252**
31000	67	**- 64** **157** 40.3 120 **248**	**- 54** **154** 40.8 121 **250**	**- 44** **152** 41.3 123 **252**	**- 34** **149** 41.9 125 **253**	**- 24** **147** 42.4 126 **255**

Figure 5.11.19 (2/2) – CRUISE PERFORMANCE –
Long Range Cruise (7100 lbs – 3220 kg) (Altitude $\geq$ 24000 ft)

(*) 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 exceeding 121.4 % TRQ.

5.12 - TIME, CONSUMPTION AND DESCENT DISTANCE

Conditions : Power as required to maintain constant Vz
Landing gear and flaps UP
CAS = 230 KCAS - 2000 RPM - BLEED AUTO

Pressure altitude (feet)	Vz = 1500 ft/min					Vz = 2000 ft/min					Vz = 2500 ft/min				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	us gal			l	kg	us gal			l	kg	us gal	
31000	20.40	73	58	19.4	101	15.30	49	39	13.1	75	12.25	35	28	9.3	60
30000	20.00	71	56	18.7	97	15.00	48	38	12.6	72	12.00	34	27	9.1	58
28000	18.40	66	52	17.5	89	14.00	45	35	11.8	66	11.10	32	25	8.5	53
26000	17.20	62	49	16.3	81	13.00	42	33	11.0	61	10.25	30	24	7.9	49
24000	16.00	57	45	15.1	74	12.00	39	30	10.2	55	09.35	28	22	7.4	44
22000	14.40	52	41	13.8	66	11.00	36	28	9.5	50	08.50	26	20	6.8	40
20000	13.20	48	38	12.8	59	10.00	33	26	8.6	44	08.00	24	19	6.2	36
18000	12.00	44	34	11.5	53	09.00	30	23	7.8	39	07.10	21	17	5.7	31
16000	10.40	39	31	10.3	46	08.00	27	21	7.0	34	06.25	19	15	5.0	28
14000	09.20	35	27	9.1	40	07.00	23	18	6.2	30	05.35	17	13	4.5	24
12000	08.00	30	23	7.9	33	06.00	20	16	5.4	25	04.50	15	11	3.8	20
10000	06.40	25	20	6.6	27	05.00	17	13	4.5	21	04.00	12	10	3.2	16
8000	05.20	20	16	5.4	22	04.00	14	11	3.6	16	03.10	10	8	2.6	13
6000	04.00	15	12	4.0	16	03.00	10	8	2.7	12	02.25	8	6	2.0	10
4000	02.40	10	8	2.7	10	02.00	7	6	1.9	8	01.35	5	4	1.3	6
2000	01.20	5	4	1.4	5	01.00	4	3	0.9	4	00.50	3	2	0.7	3
SL	00.00	0	0	0	0	00.00	0	0	0	0	00.00	0	0	0	0

Figure 5.12.1 - TIME, CONSUMPTION AND DESCENT DISTANCE

5.13 - HOLDING TIME

Conditions : Landing gear and flaps UP
IAS = 120 KIAS - 2000 RPM - BLEED AUTO
TRQ ≃ 35 %

Pressure altitude (feet)	FUEL USED DURING HOLDING TIME											
	Weight 5500 lbs (2495 kg)						Weight 6300 lbs (2858 kg)					
	10 min			30 min			10 min			30 min		
	l	kg	us gal	l	kg	us gal	l	kg	us gal	l	kg	us gal
SL	32	25	8.4	95	75	25.1	32	25	8.4	96	75	25.3
5000	28	22	7.3	83	65	22.0	29	23	7.6	86	68	22.7
10000	25	20	6.6	75	59	19.8	26	20	6.8	77	61	20.4
15000	23	18	6.1	69	54	18.3	24	19	6.3	72	57	19.0
20000	21	17	5.6	63	50	16.8	22	17	5.9	66	52	17.6

Figure 5.13.1 - HOLDING TIME

5.14 - LANDING DISTANCES

WEIGHT : 7024 lbs (3186 kg)

Associated conditions :
- Landing gear DN and flaps LDG
- Approach speed IAS = 85 KIAS
- Touch-down speed IAS = 78 KIAS
- Maximum braking without reverse
- Hard, dry and level runway
- GR = Ground roll (in ft)
- D_{50} = 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	1575	2135	1675	2265	1740	2330	1840	2430
2000	1675	2265	1805	2395	1870	2495	1970	2590
4000	1805	2395	1940	2560	2035	2660	2135	2790
6000	1940	2560	2100	2725	2200	2855	2300	2955
8000	2100	2725	2265	2920	2360	3020	2495	3180

PRESSURE ALTITUDE ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1905	2530	2000	2625	2070	2690	2135	2790
2000	2070	2690	2135	2790	2230	2890	2300	2955
4000	2230	2890	2330	2985	2430	3085	2495	3185
6000	2395	3050	2530	3215	2625	3315	2690	3380
8000	2590	3280	2725	3410	2855	3570	2920	3640

Figure 5.14.1 - LANDING DISTANCES - 7024 lbs (3186 kg)

Corrections :
. Reduce total distances of 10 % every 10 kt of headwind
. Increase total distances of 30 % every 10 kt of rear 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 : 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_{50} = 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 5.14.2 - 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 rear 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_{50} = 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 5.14.3 - 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 rear 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

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 850 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 referenced at the end of this Pilot's Operating Handbook - refer to Chapter 6.5.

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.

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.

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.

A partition net separating the cabin from the baggage compartment is attached to frame C14.

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

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.

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, 6.4.1A and 6.4.2, 6.4.2A)

EXAMPLES :

			SAMPLE 1 Fig. 6.4.1	**SAMPLE 2** Fig. 6.4.1A
1 -	***Airplane basic characteristics :***			
	W = Empty weight	:	2160 kg	4762 lbs
	CG = Balance (m.a.c. %)	:	16 %	16 %
2 -	***Foreseen loading :***			
	1 Pilot and 1 front Passenger	:	154 kg	340 lbs
	2 Intermediate Passengers	:	113 kg	250 lbs
	2 Rear Passengers	:	113 kg	250 lbs
	Cargo in pressurized cabin	:	60 kg	132 lbs
	Fuel	:	500 kg	1102 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 (340 lbs or 154 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 (29.6 % in examples) 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 6032 lbs (2736 kg). If not, reconsider airplane loading.
- Record these data on your navigation log.

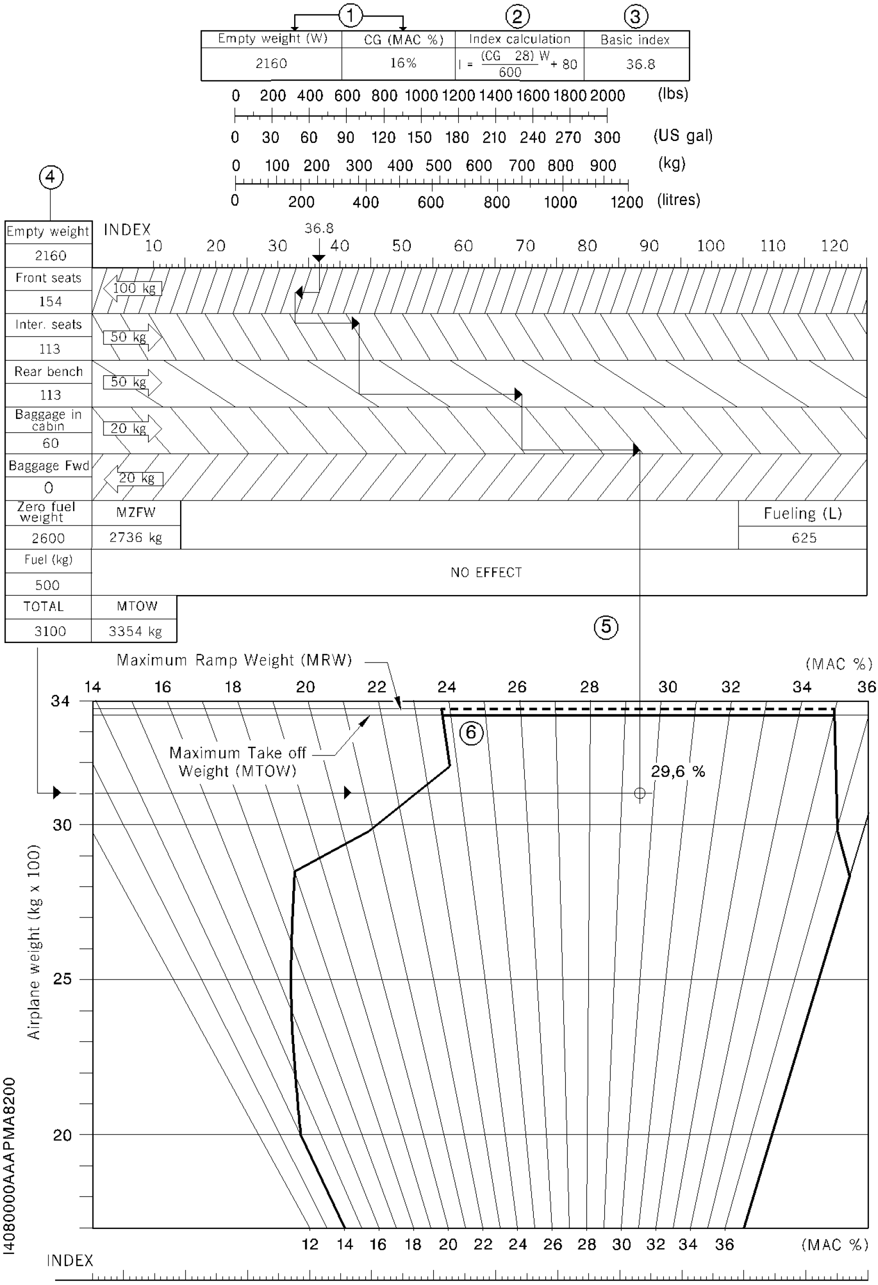

Figure 6.4.1 - LOADING SAMPLE (in Kg and Litres)

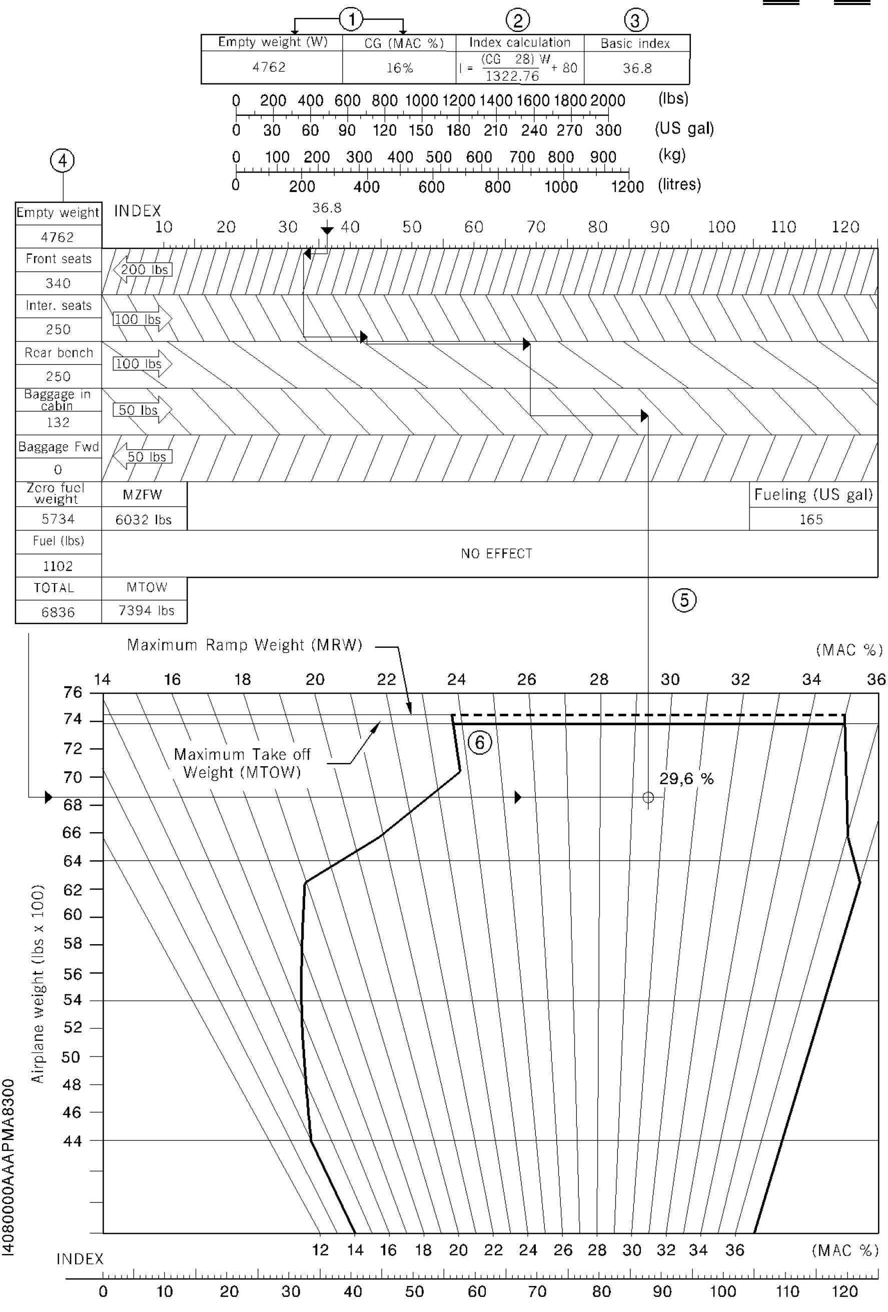

Figure 6.4.1A - LOADING SAMPLE (in lbs and us gal)

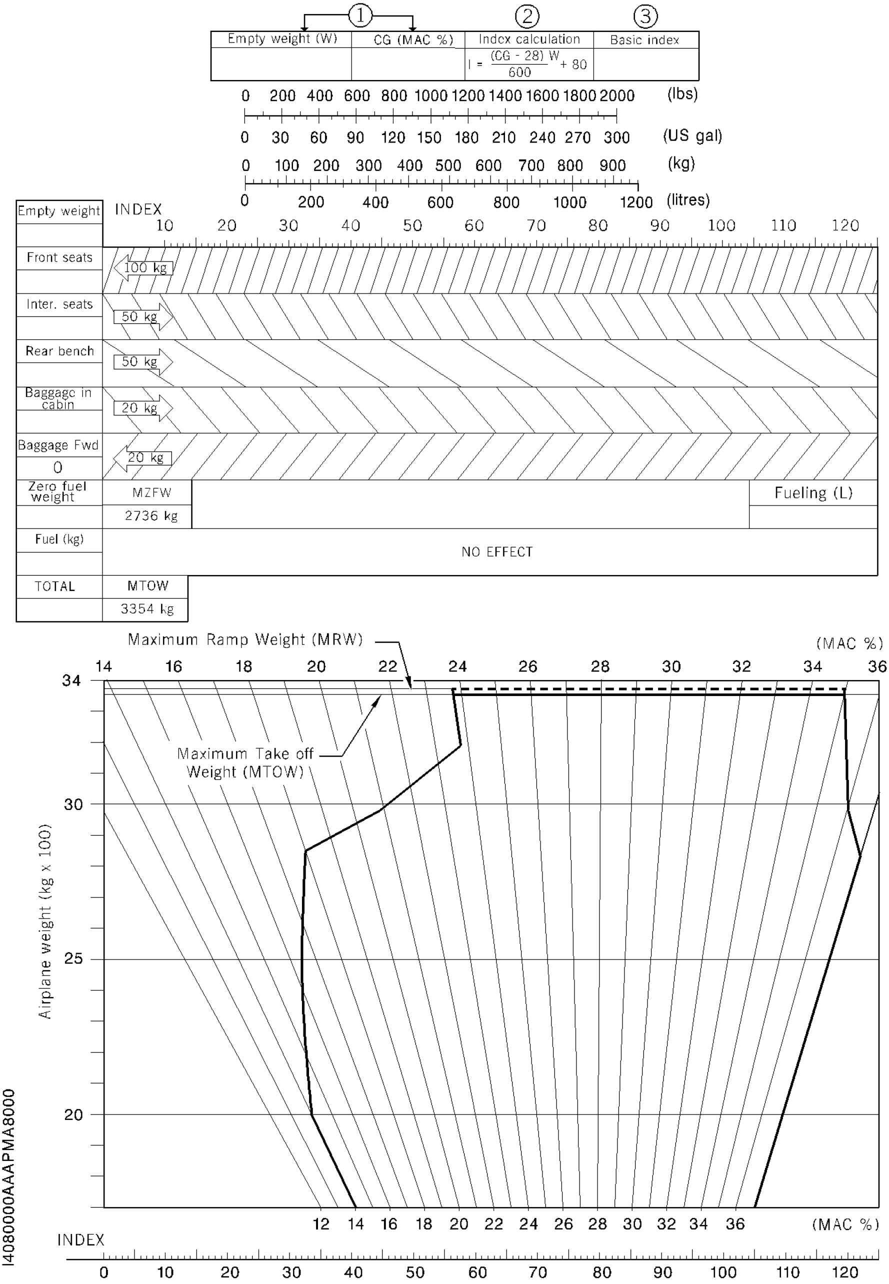

Figure 6.4.2 - WEIGHT AND BALANCE GRAPH (in Kg and Litres)

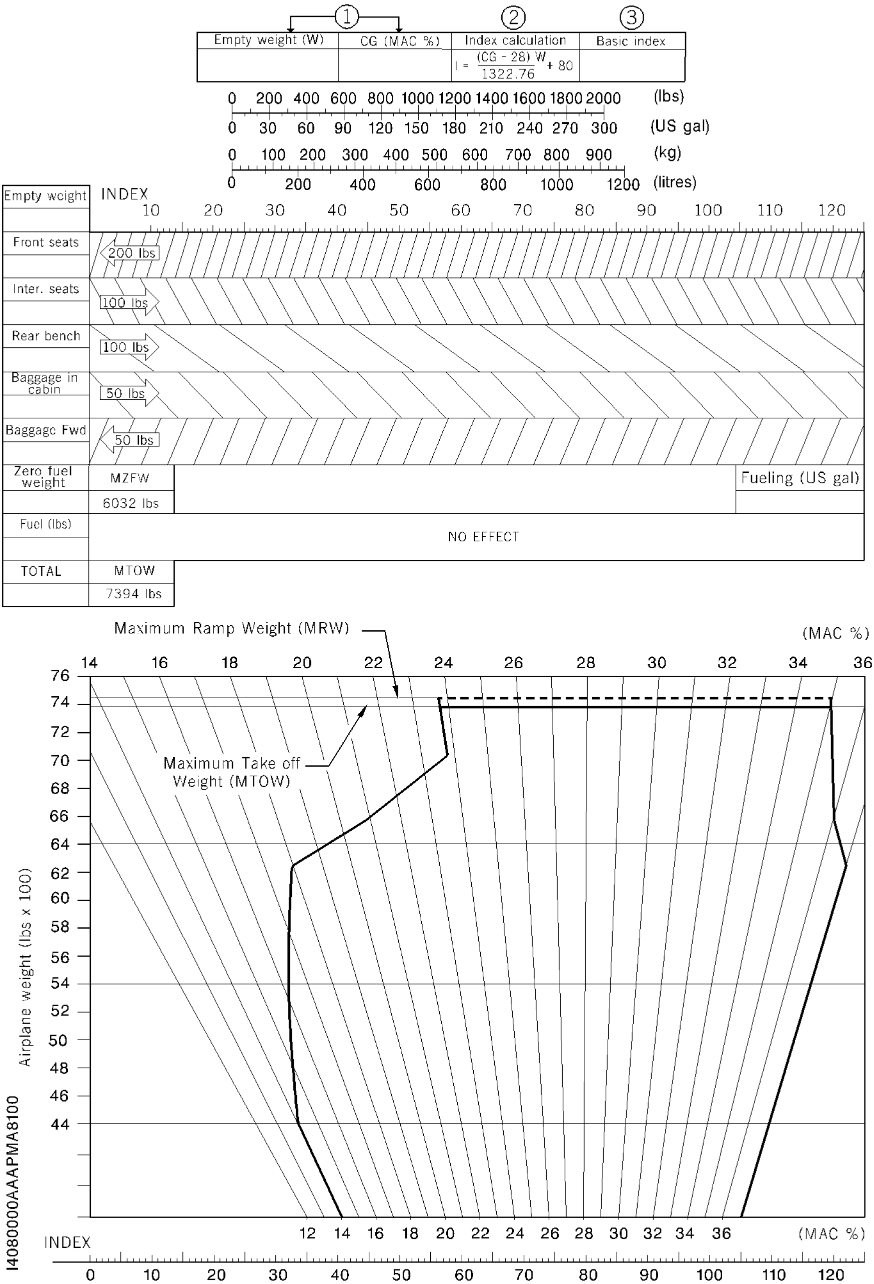

Figure 6.4.2A - WEIGHT AND BALANCE GRAPH (in lbs and us gal)

DETERMINING EMPTY AIRPLANE CHARACTERISTICS

Empty airplane characteristics (weight and balance) may vary with regard to those indicated on weighing form according to installed optional equipment and installed seats.

List of equipment (refer to 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_o"	Moment
	According to delivery							

Figure 6.4.3 - SAMPLE WEIGHT AND BALANCE RECORD

$$\text{CG m.a.c.\%} = \frac{(do - 172.93)}{59.45} \times 100$$

Use the above formula to express arm "d_o" in % of mean aerodynamic chord.

NOTE :
Arm expressed in inches with regard to reference.

Front seats	:	178.5 in. (4.534 m)
Intermediate seats	:	222.7 in. (5.656 m)
Rear bench (2 seats)	:	267.1 in. (6.785 m)
FWD baggage compartment	:	128.0 in. (3.250 m)
Baggage compartment in pressurized cabin	:	303.0 in. (7.695 m)
Fuel	:	189.8 in. (4.820 m)

6.5 - LIST OF EQUIPMENT

The list of equipment is available in SOCATA Report reference NAV No. 34/90-RJ-App 1, located at the end of this POH.

A separate list of equipment of items installed at the factory in your specific airplane is provided in your airplane file.

SECTION 7

DESCRIPTION

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7.1 - GENERAL

This Section provides description and operation of the TBM 850 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 850, No. 190-00708-04, 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.

7.1 - GENERAL

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7.2 - AIRFRAME

The TBM 850 is a six-place, low wing airplane. The structure is a semi-monocoque all-metal construction and is equipped with a retractable tricycle landing gear.

The pressurized cabin is equipped, on the left side of fuselage, with a one-piece access door and folding stairs comprising a hand rail allowing pilot and passengers boarding. The occupants have access to cockpit and to rear seats through a central aisle.

An optional "pilot" door located forward of the cabin on the left side allows access to the cockpit by means of folding stairs.

The aft cabin section is a baggage compartment.

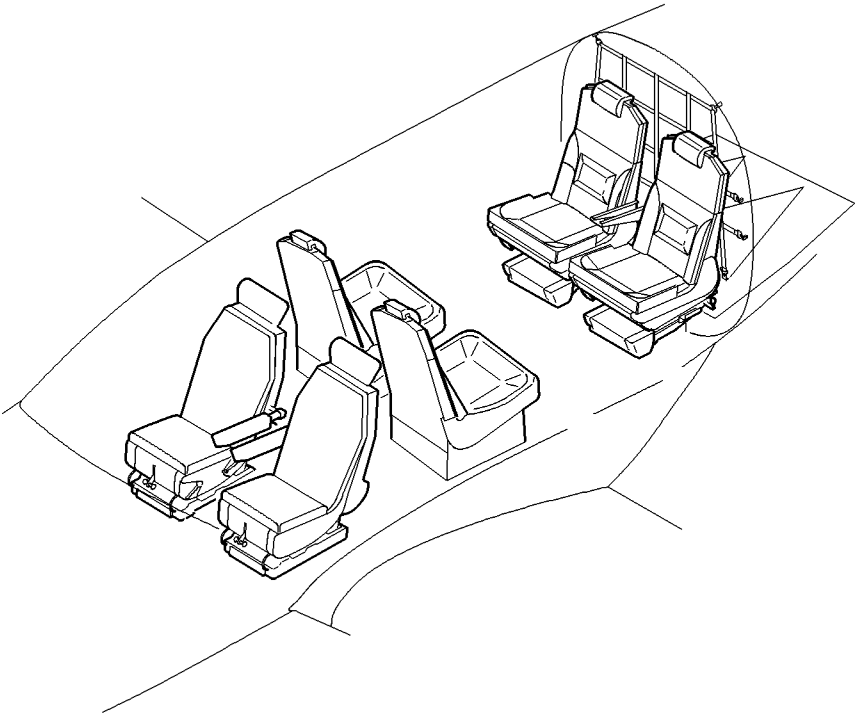

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Figure 7.2.1 - CABIN ARRANGEMENT

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^2)
Wing loading	38.16 lb/sq.ft (186.3 kg / m^2)
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^2)
Aileron trim tab area	0.78 sq.ft (0.072 m^2)
Spoiler area	1.80 sq.ft (0.167 m^2)

Flaps characteristics :

Type	Single-slotted, rotational
Global flap area	40.68 sq.ft (3.780 m^2)

1) Geared motor
2) Internal actuator
3) Intermediate bearings
4) Wing flap
5) External actuator
6) Rods
7) Control selector

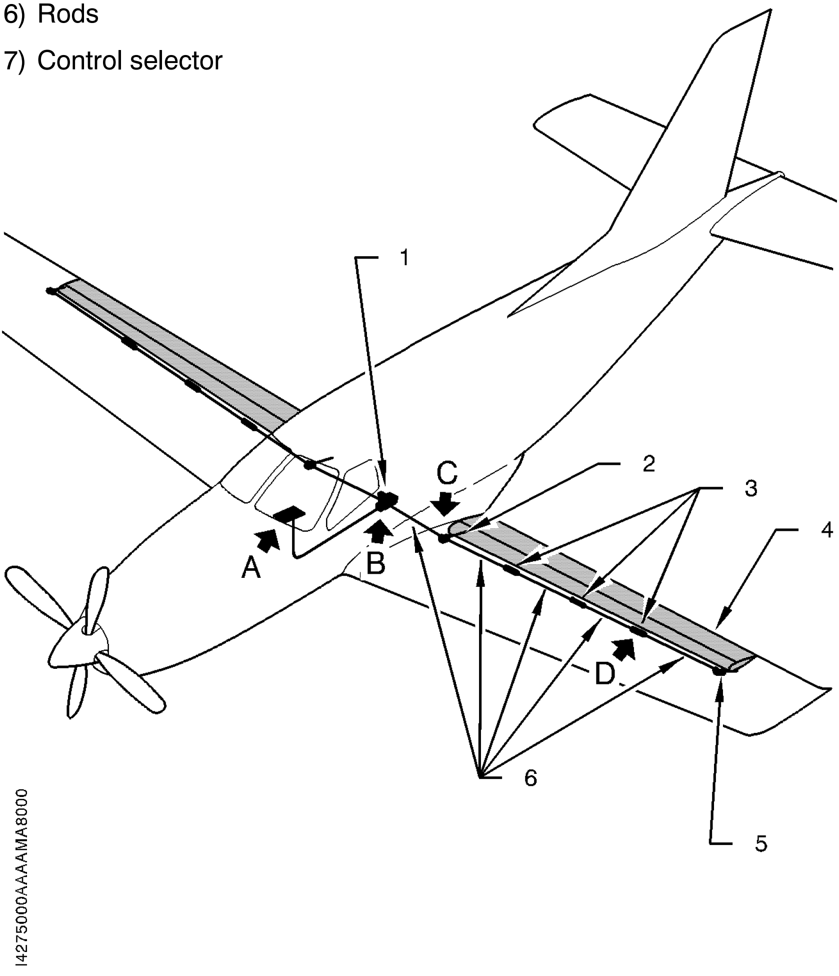


Figure 7.2.2 (1/2) - WING FLAPS

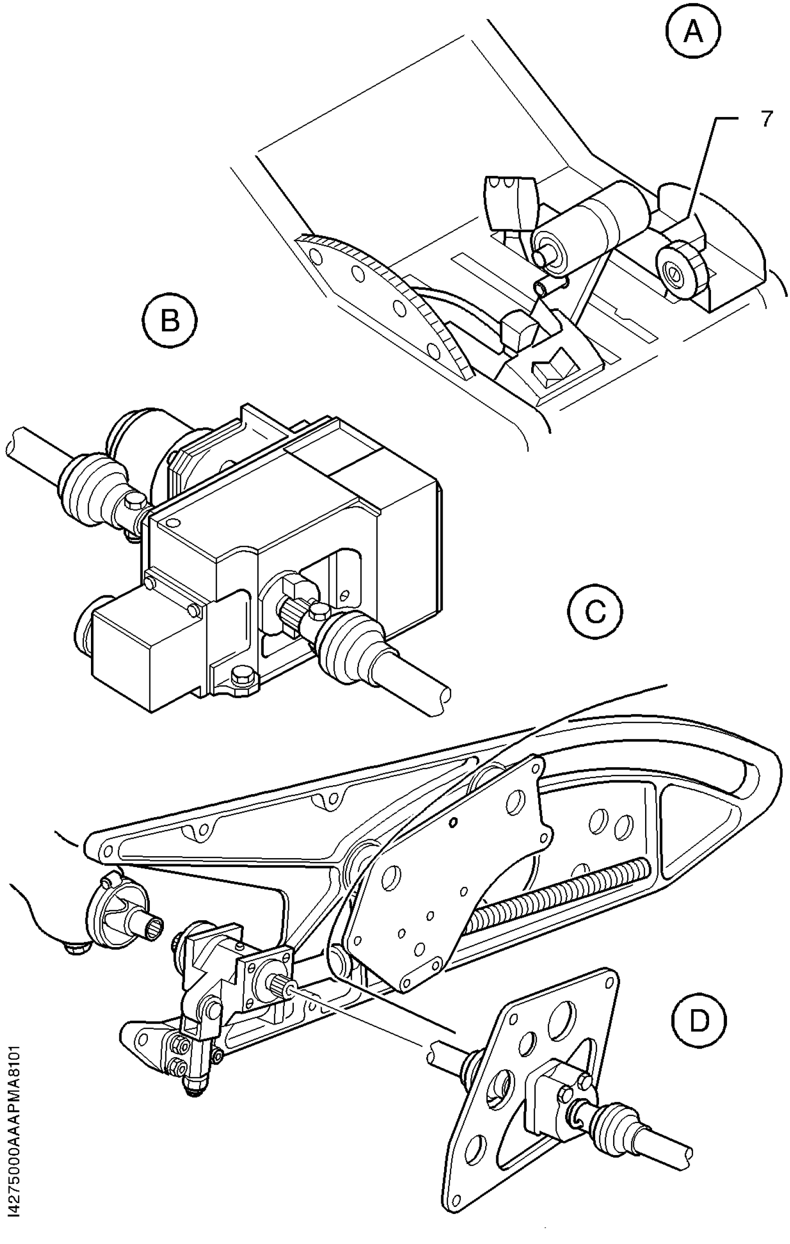


Figure 7.2.2 (2/2) - WING FLAPS

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^2)
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_2-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^2)
Elevator trim tab area (right datum plane) . . . . 3.47 sq.ft (0.322 m^2)

Vertical stabilizer characteristics :

Global area . . . . 33.28 sq.ft (3.092 m^2)
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_1-A012 modified
Sweep angle (at leading edge) . . . . 45°
Aspect ratio 1.481
Rudder area (including trim tab) . . . . 11.87 sq.ft (1.103 m^2)
Rudder trim tab area . . . . 1.36 sq.ft (0.126 m^2)

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 floodlights.

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 (Figure 7.3.3) :
  - . 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.
- Central area instrument panel includes (Figure 7.3.4) :
  - . on top : surmounted by the stand-by compass, stand-by altimeter and AFCS control unit,
  - . 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 inside the recess under the arm-rest on both lateral sides of the cockpit, on R.H. side of intermediate R.H. passenger's seat and on the arm-rest of rear R.H. passenger's seat.

Pedestal console (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.

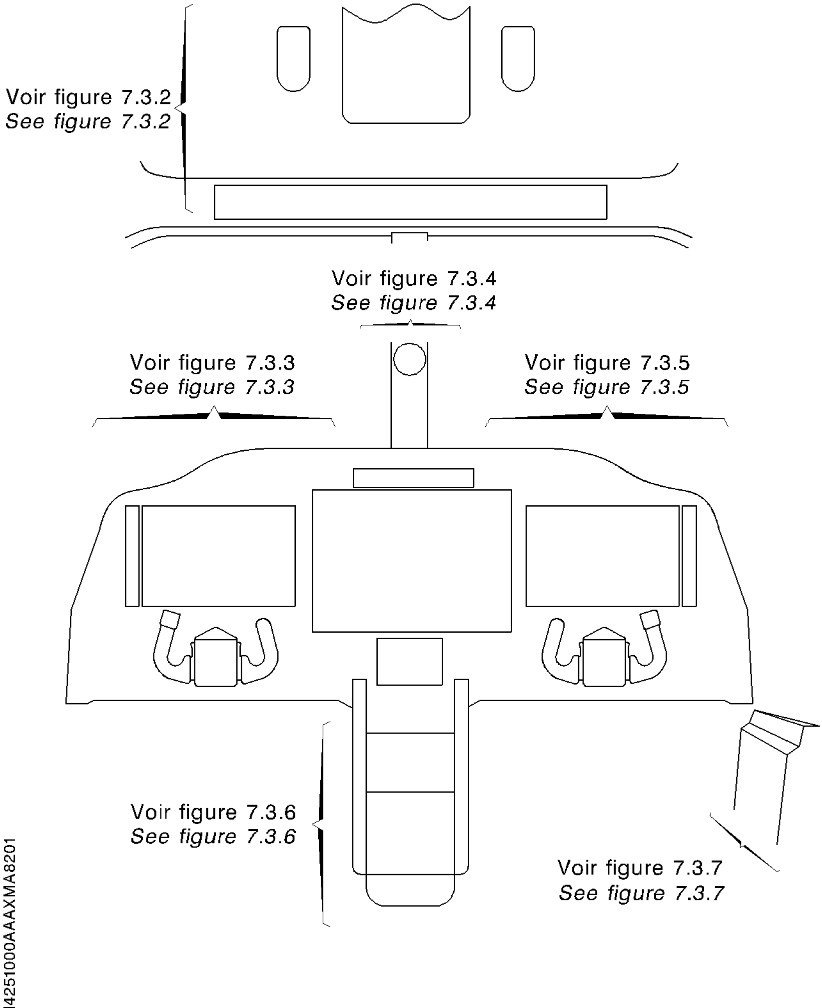


Figure 7.3.1 - INSTRUMENT PANEL ASSEMBLY
(Typical arrangement)

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. cockpit floodlight
7) MASTERs controls (”AVIONICS” and “AP TRIMS”)
8) ”FUEL” control panel (Figure 7.7.3)
9) ”ENGINE START” switches (Figure 7.6.3)
10) ”ELECTRIC POWER” switches (Figure 7.8.4)
11) ”INT LIGHTS” internal lighting switches (Figure 7.8.6)
12) ”EXT LIGHTS” external lighting switches (Figure 7.8.5)
13) L.H. cockpit floodlight
14) ”HORN TEST” aural warning test knob
15) Loud-speaker of GMA # 1

Figure 7.3.2 (1/2) - UPPER PANEL AND COCKPIT OVERHEAD PANEL

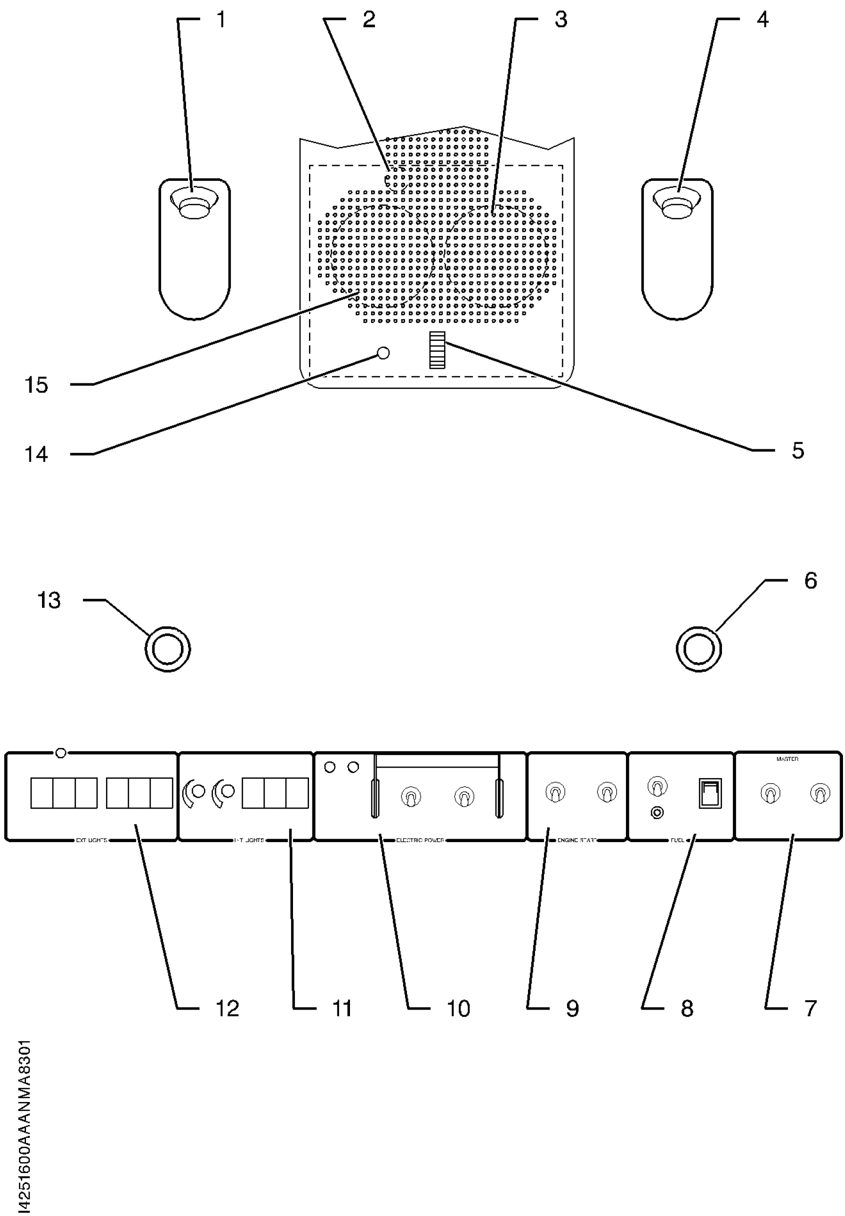


Figure 7.3.2 (2/2) - UPPER PANEL AND COCKPIT OVERHEAD PANEL

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

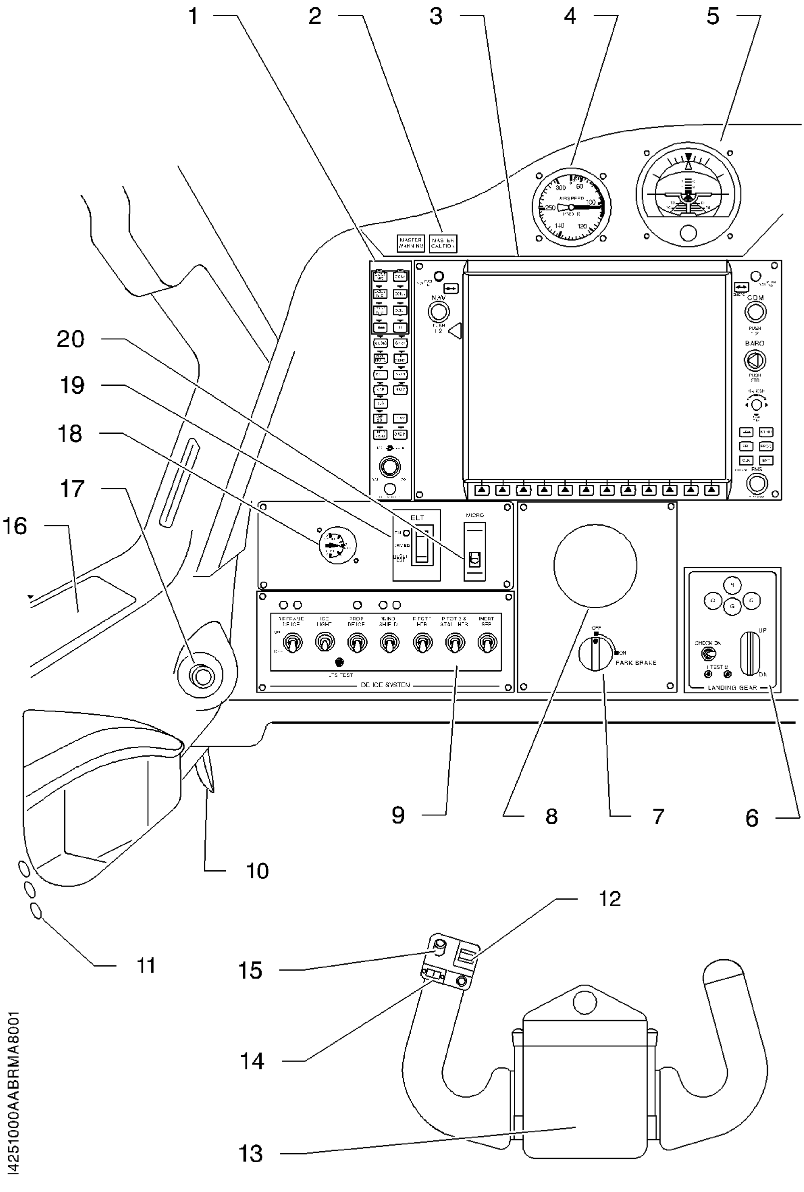


Figure 7.3.3 (2/2) - LEFT INSTRUMENT PANEL
(Typical arrangement)

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

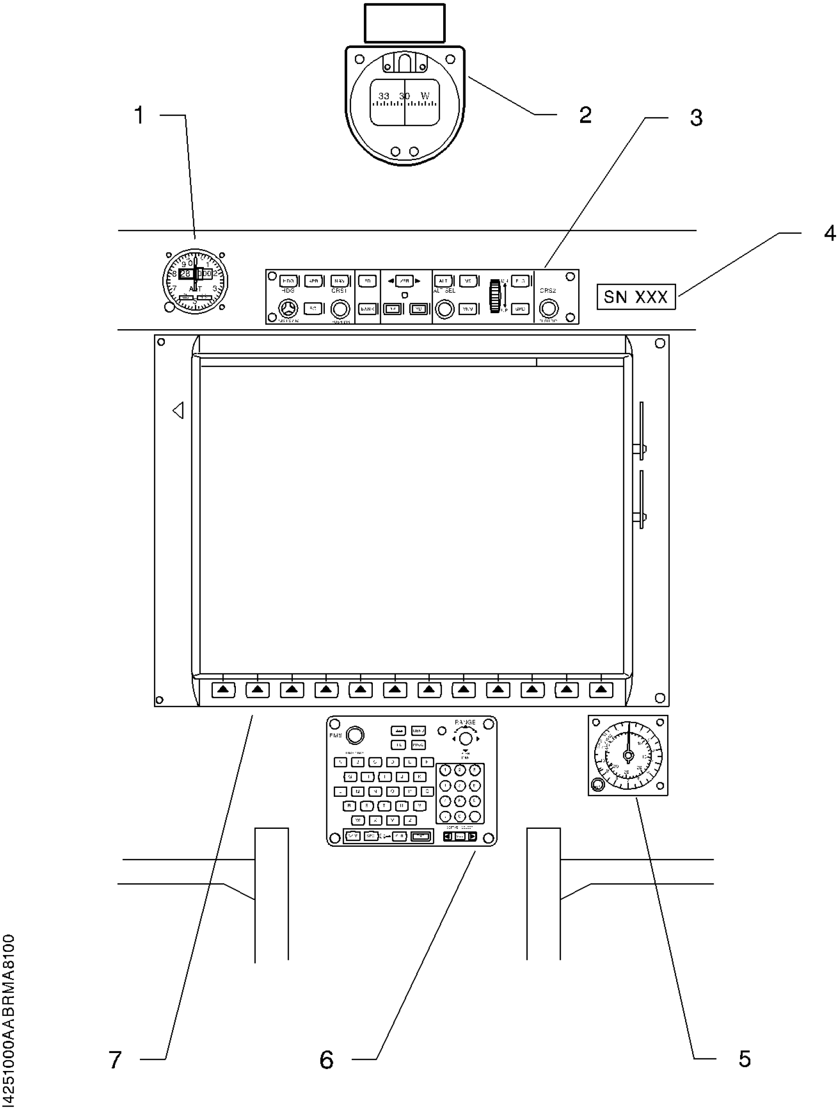


Figure 7.3.4 (2/2) - CENTRAL INSTRUMENT PANEL
(Typical arrangement)

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

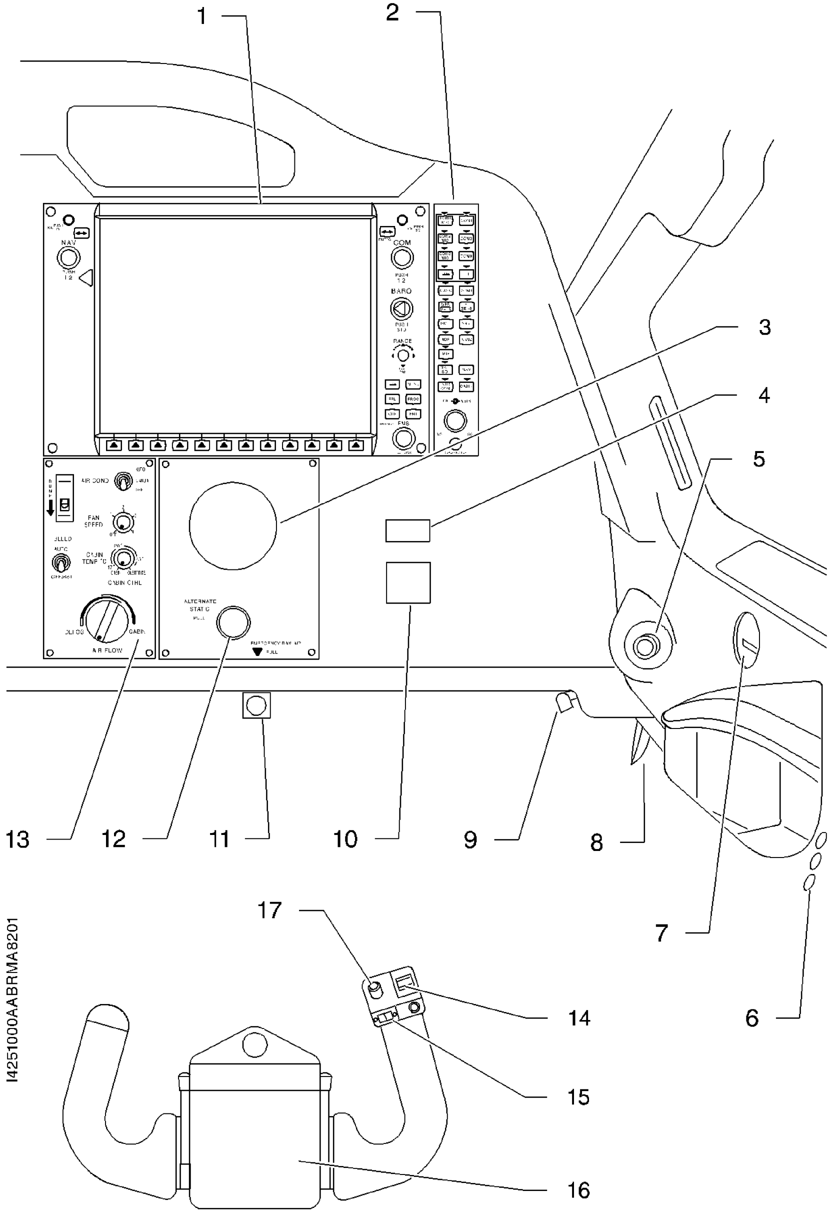


Figure 7.3.5 (2/2) - RIGHT INSTRUMENT PANEL
(Typical arrangement)

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 7.7.2)
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 (1/2) - PEDESTAL CONSOLE

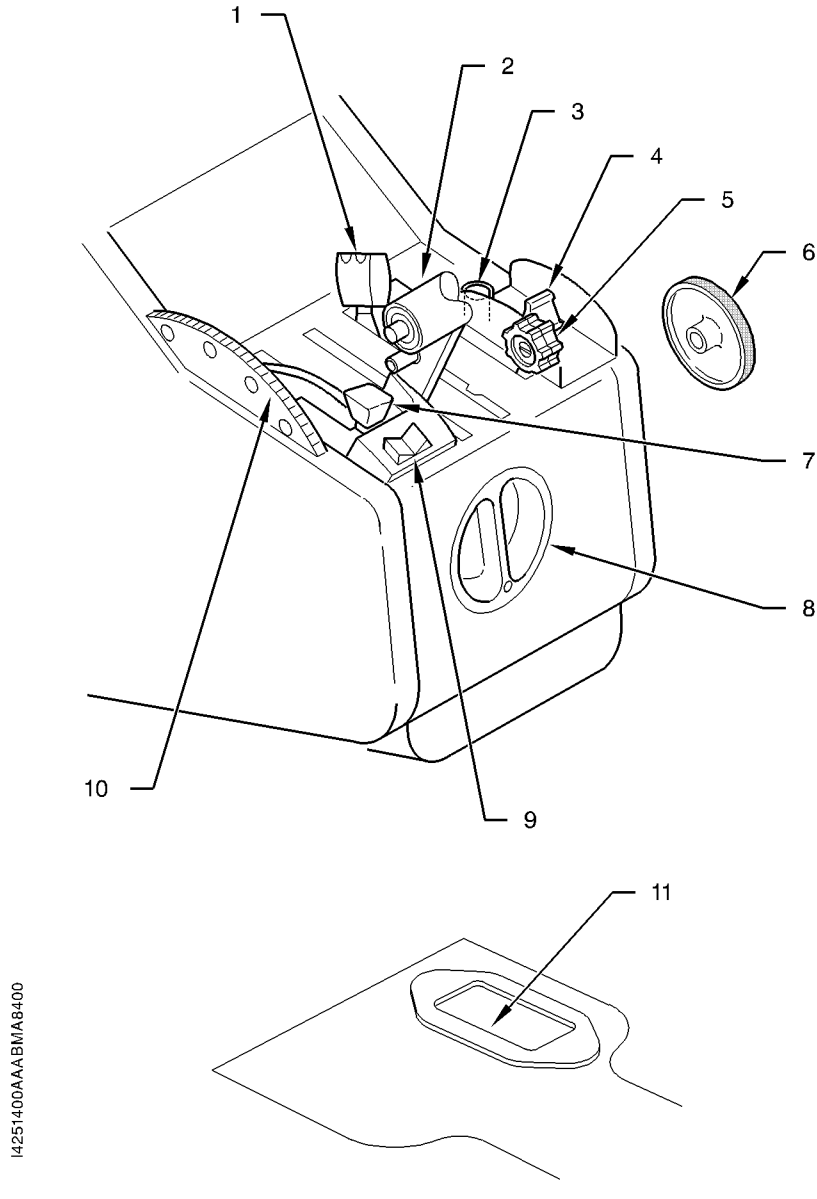


Figure 7.3.6 (2/2) - PEDESTAL CONSOLE
(Typical arrangement)

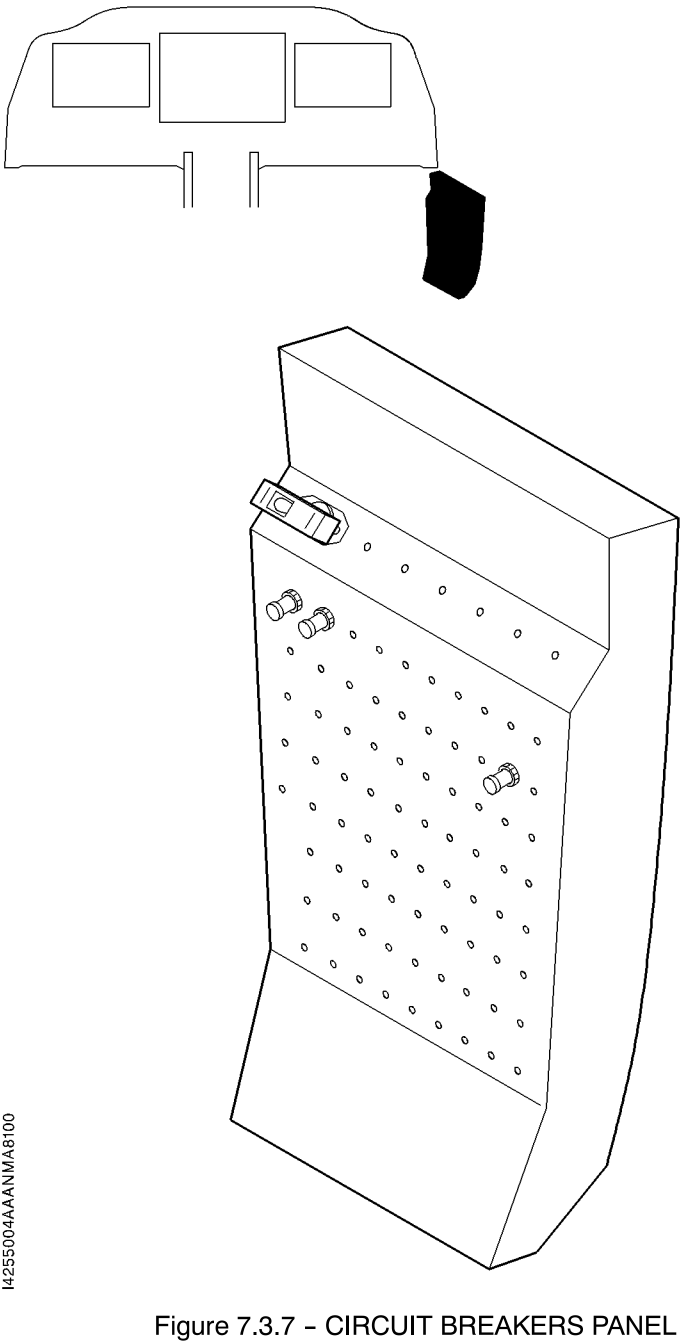


Figure 7.3.7 - CIRCUIT BREAKERS PANEL

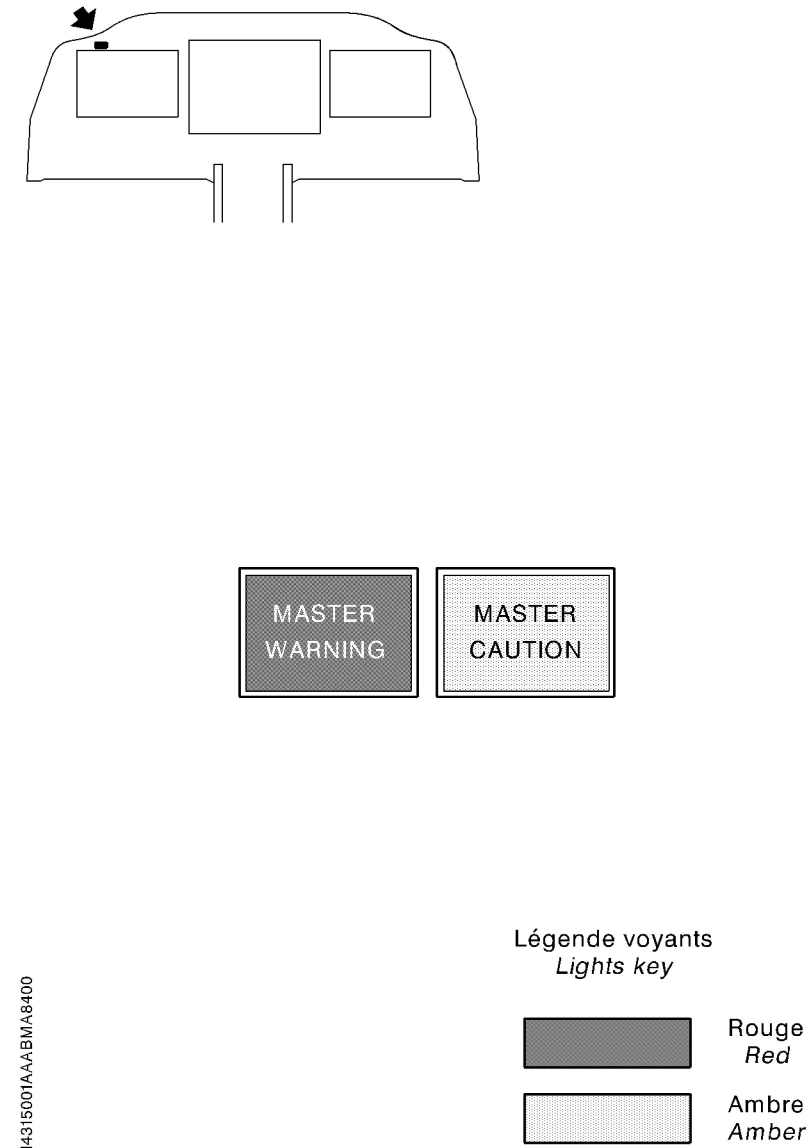


Figure 7.3.8 - GENERAL ALARMS WARNING LIGHTS

DOORS, WINDOWS AND EMERGENCY EXIT

Cabin access door (Figure 7.3.9)

The cabin one-piece access door, located on the left side of fuselage aft of the wings, opens outside. The retractable stairs and hand rail make boarding easier.

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle 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.

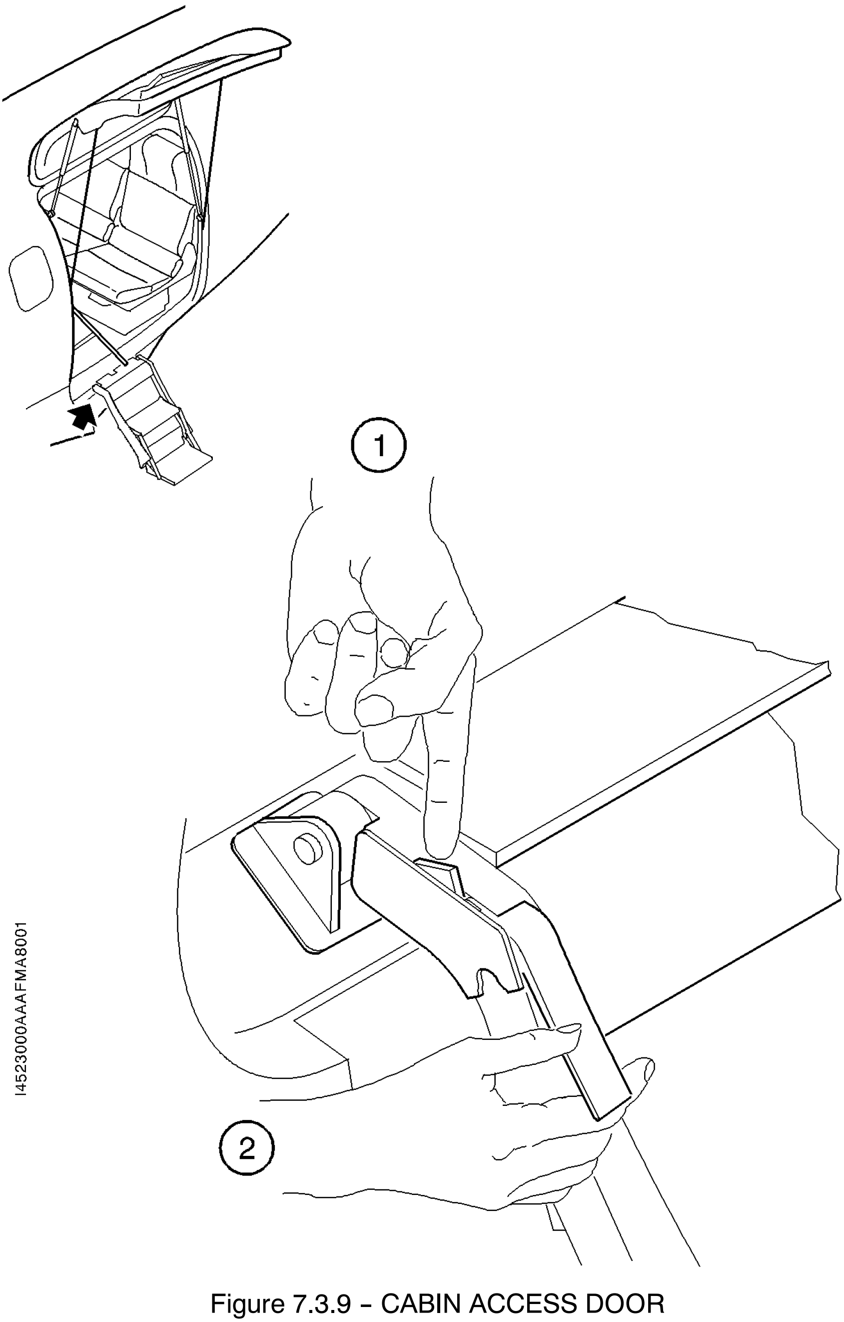


Figure 7.3.9 - CABIN ACCESS DOOR

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. Pull 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.

Cockpit access door (Figure 7.3.9A)

The cockpit access door, so-called "pilot" door, (if installed) located on the left side of fuselage forward of the wings, opens outside. Retractable footstep makes boarding easier.

WARNING

AS THE "PILOT" DOOR IS LOCATED IN A DANGEROUS AREA, WAIT FOR COMPLETE ENGINE STOP BEFORE OPERATING THIS DOOR

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embeded in door (this pressure disengages the handle from its recess), then turn the handle downwards. Pull the door helping it to open until it reaches its maximum opening position.

After door opening, tilt and unfold footstep.

CAUTION

RETRACT FOOTSTEP BEFORE CLOSING ACCESS DOOR

Fold and tilt footstep upwards.

To close the door from inside the airplane, pull the door until it aligns with fuselage and lock it by moving inside handle downwards. Check that each latch is correctly engaged in its recess (visible green marks).

The "DOOR" CAS message lights on as long as cabin access door and "pilot" access door (if installed) are not correctly locked.

To open door from inside the cockpit, unlock the handle by pressing on knob located on its right side, pull the handle inwards and move it upwards. Open the door helping it to open until it reaches its maximum opening position.

After door opening, tilt and unfold footstep.

CAUTION

RETRACT FOOTSTEP BEFORE CLOSING ACCESS DOOR

Fold and tilt footstep upwards.

To close the door from outside the airplane, push the door until it aligns with fuselage and lock it by moving outside handle upwards, then fold handle in its recess.

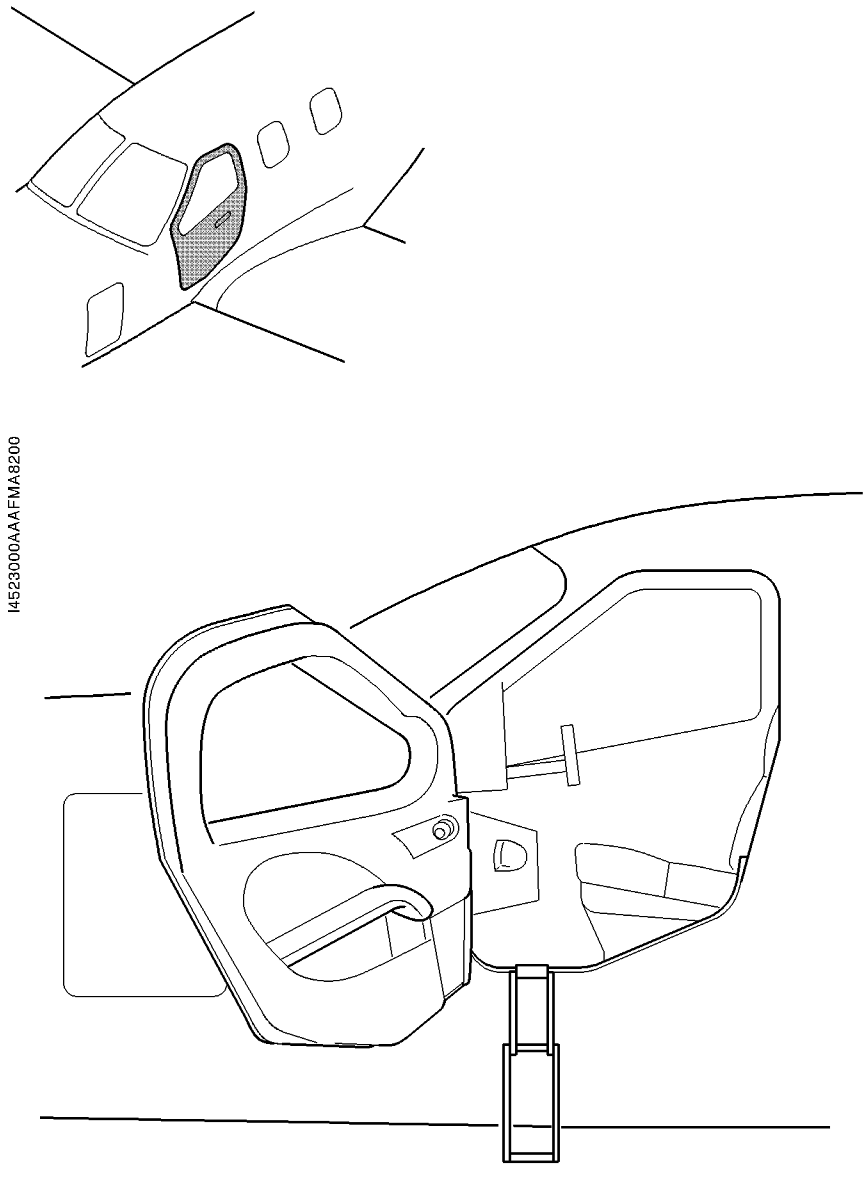


Figure 7.3.9A - COCKPIT ACCESS DOOR ("PILOT" DOOR)

FWD compartment door

The FWD compartment door is located on the airplane left side between the firewall and the front pressure bulkhead. It is hinged at the top. It is maintained in the up position by a compensation rod. Two interlocking-type latches ensure its closing and it is equipped with a lock [same key as for the access door and the "pilot" door (if installed)]. When the door is closed, latches are flush with the fuselage profile.

Windows

Windows do not open. The windshield consists of two parts electrically 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.

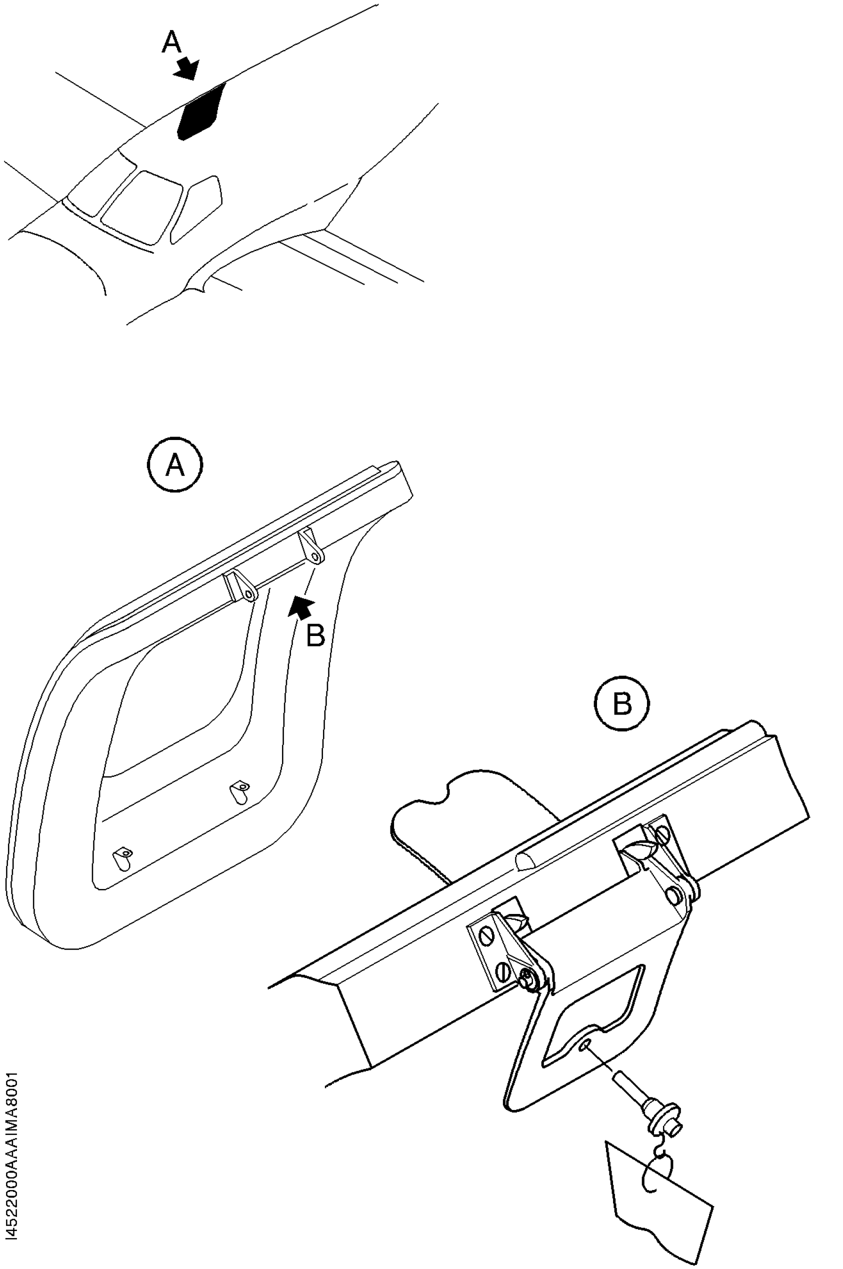


Figure 7.3.10 - EMERGENCY EXIT

SEATS, BELTS AND HARNESSES

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 forward for longitudinal setting.

The seat height is adjusted by pulling up side forward handle while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side rearward handle.

Passengers' seats (Figure 7.3.11)

The accommodation consists of :

- two individual seats, installed back to the flight direction, mounted on the same rails as the front seats.
  The seat back angle is adjusted by pulling up side handle.
- two rear seats arranged as a bench, mounted on the same rails as the front seats.
  The seat back-rests tilt forward by pulling up a rear handle and each seat may tilt forwards by pulling up a side rear handle to ease baggage loading in baggage compartment.
  For longitudinal setting pull up the handle located forward.

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

Each cockpit seat is equipped with a four-point restraint system consisting of an adjustable lap belt and a dual-strap inertia reel-type shoulder harness.

Each passenger seat is equipped with a three-point restraint system consisting of an adjustable lap belt and an inertia reel-type shoulder harness.

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. Rings fitted with lashing straps are provided for securing parcels and baggage on compartment floor.

The FWD compartment is accessible by opening the external door located on the left side of the airplane.

These locations are designed for the carrying of low density loads ; loading and unloading must be carried out with caution to avoid any damage to airplane.

The cabin is separated from the baggage compartment by a partition net intended to protect the passengers from injuries that could be caused by improper tie-down of a content.

The partition net is mounted at frame C14 (Figure 7.2.1), it is secured at the bottom to 4 points of the floor and on the sides to 6 points of the structure.

Maximum loads allowable in the baggage compartments depend on airplane equipment, refer to Section 6 "Weight and balance".

WARNING

ANY PARCEL OR BAGGAGE MUST BE STOWED BY STRAPS.

IT IS THE PILOT'S RESPONSIBILITY TO CHECK THAT ALL THE PARCELS AND BAGGAGE ARE PROPERLY SECURED IN THE CABIN.

IN CASE OF TRANSPORT OF DANGEROUS MATERIALS, RESPECT THE LAW CONCERNING TRANSPORT OF DANGEROUS MATERIALS AND ANY OTHER APPLICABLE REGULATION

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 } Rear bench
6) L. H. rear passenger's seat }
7) Front seat(s) longitudinal shift control
8) Front seat(s) height control
9) Front seat(s) back-rest tilt control
10) Drawer for pilot's piddle pak
(front side : new bags, rear side : used bags)
11) Intermediate seat(s) back-rest tilt control
12) Rear bench seat(s) back-rest tilt control
13) Rear bench L.H. seat tilt control

NOTE :
To have access to the baggage compartment, pull forwards the back-rest of rear bench L.H. seat, then pull forwards control (Item 13) to tilt L.H. seat assembly forwards.
If necessary, pull forwards the back-rest of rear bench R.H. seat.

Figure 7.3.11 (1/2) - SEATS

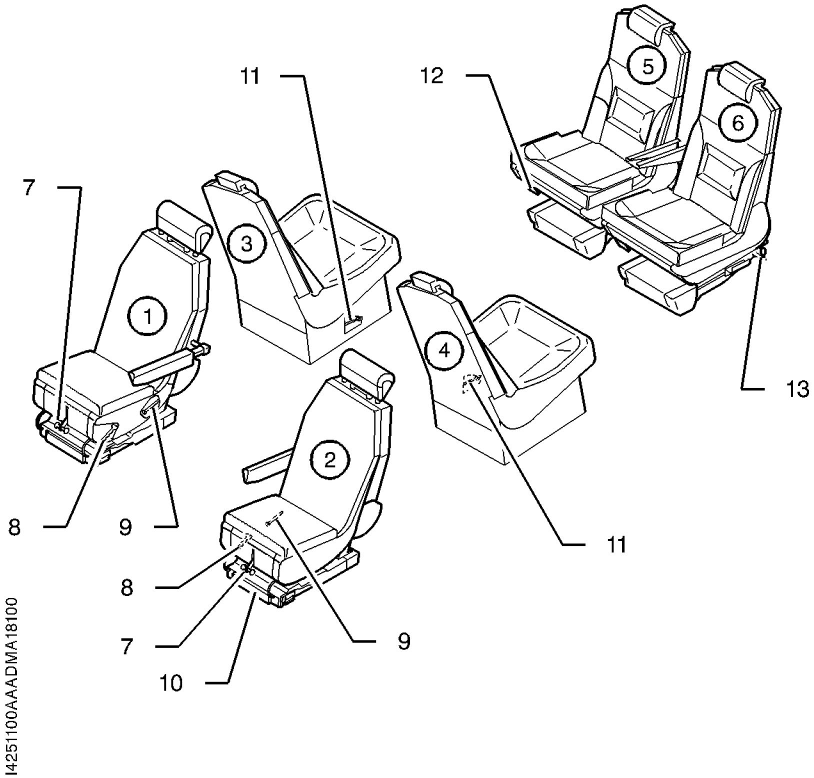


Figure 7.3.11 (2/2) - SEATS

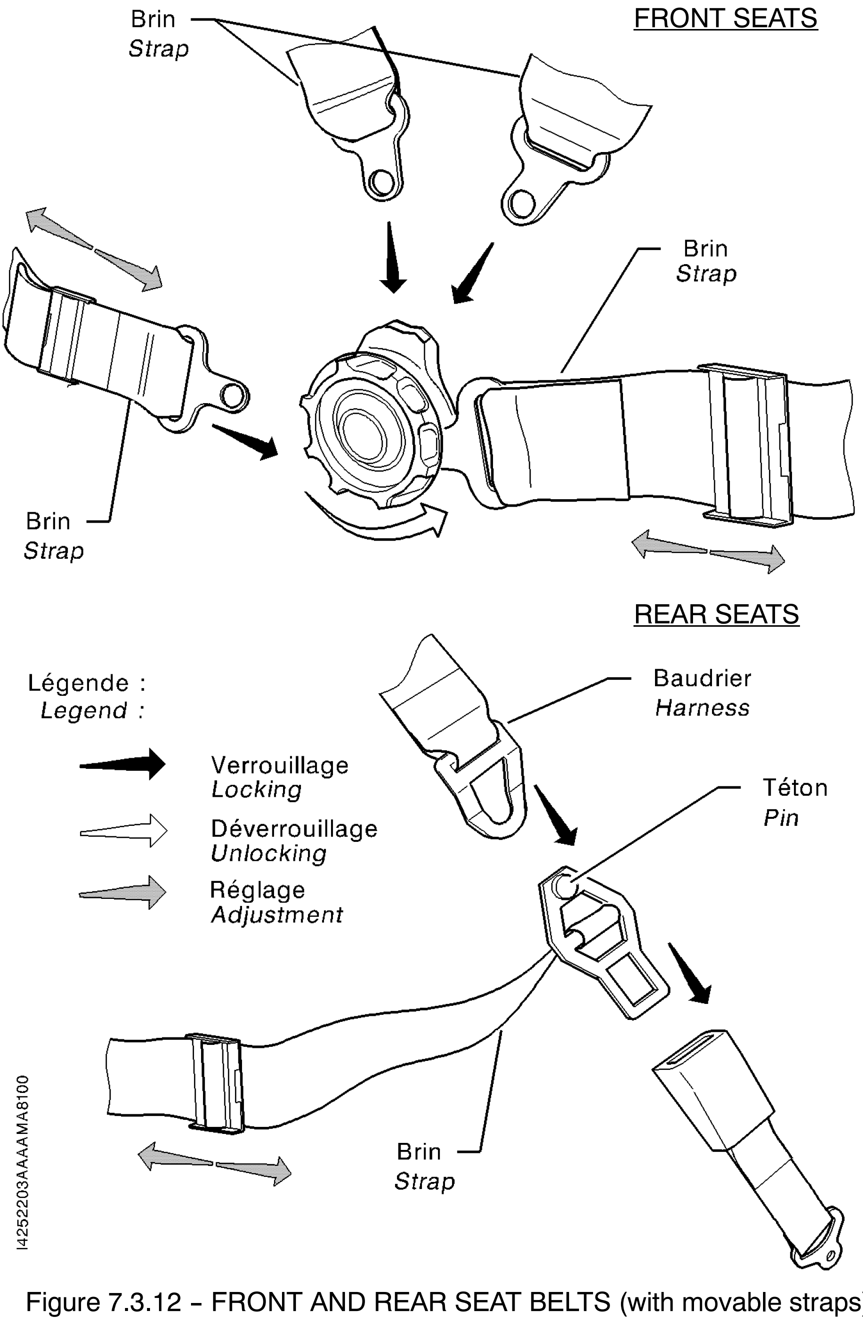


Figure 7.3.12 - FRONT AND REAR SEAT BELTS (with movable straps) AND HARNESSES

7.4 - FLIGHT CONTROLS

Flight controls consist of roll, pitch and rudder controls, as well as roll trim tab, pitch trim tab and rudder trim tab controls.

NOTE :
During airplane parking, it is recommended to lock flight controls (see Figure 8.6.2)

ROLL (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

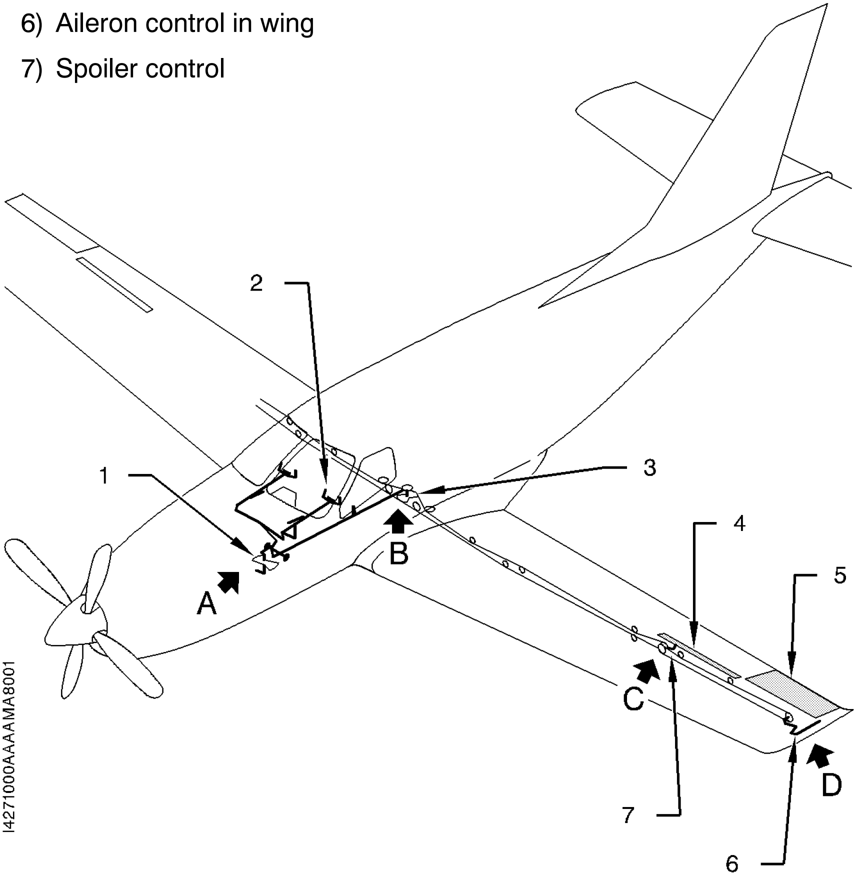


Figure 7.4.1 (1/2) - ROLL

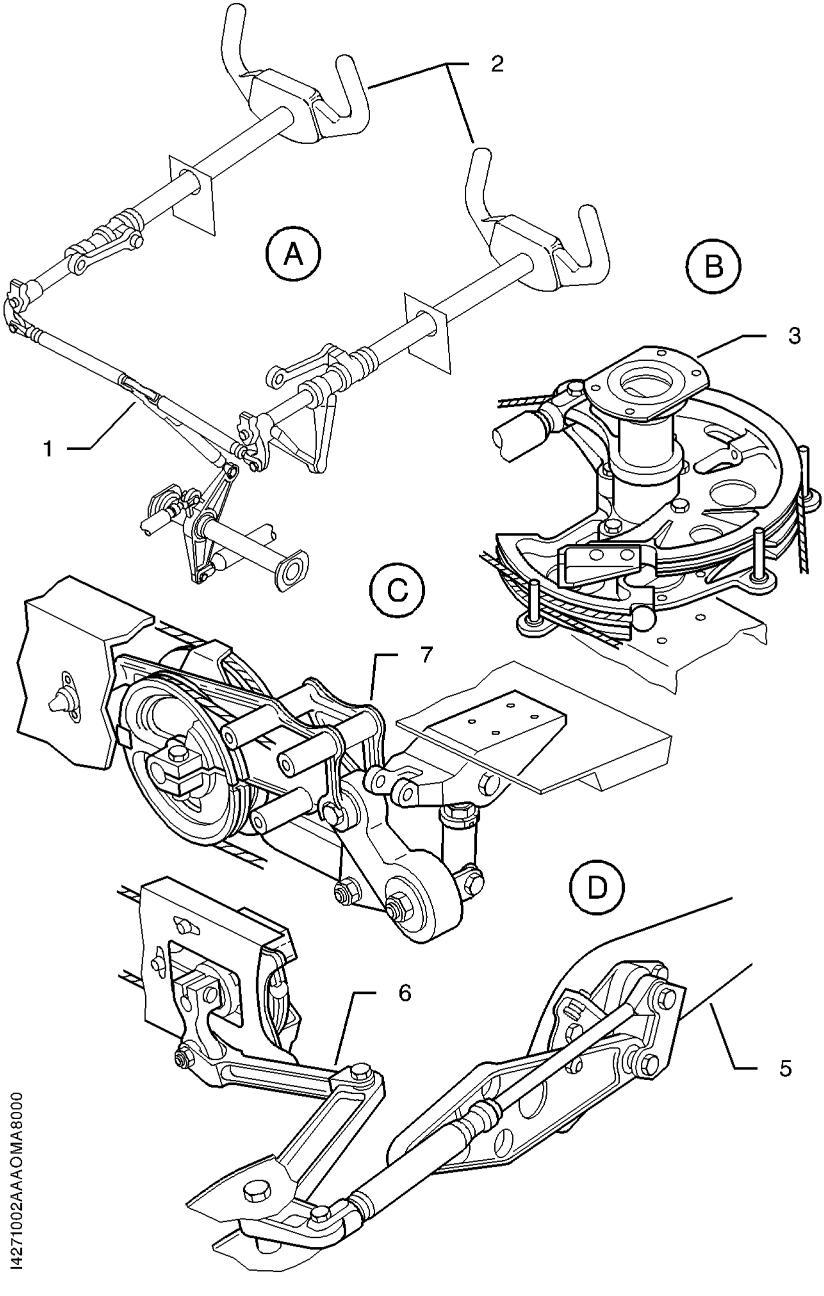


Figure 7.4.1 (2/2) - ROLL

1) Roll trim tab
2) Aileron
3) Adjustable rods
4) Actuator
5) Trim tab control wiring
6) Trim switch on pedestal console

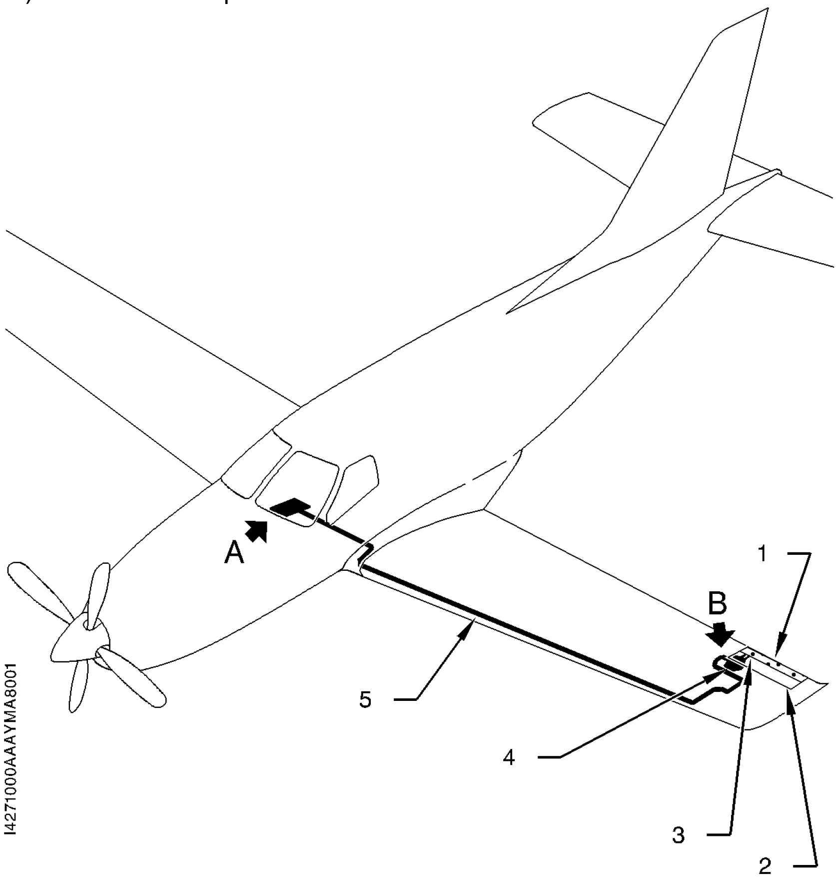


Figure 7.4.2 (1/2) - LATERAL TRIM

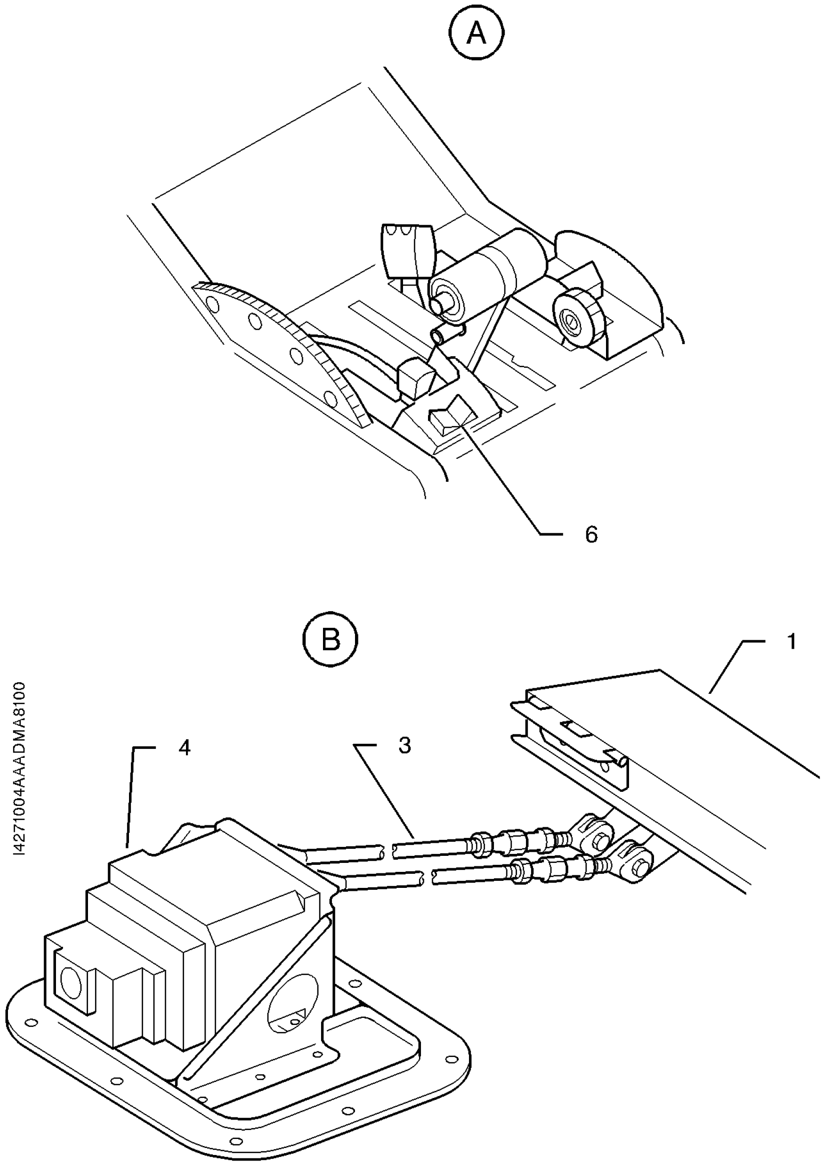


Figure 7.4.2 (2/2) - LATERAL TRIM

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 actuators 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

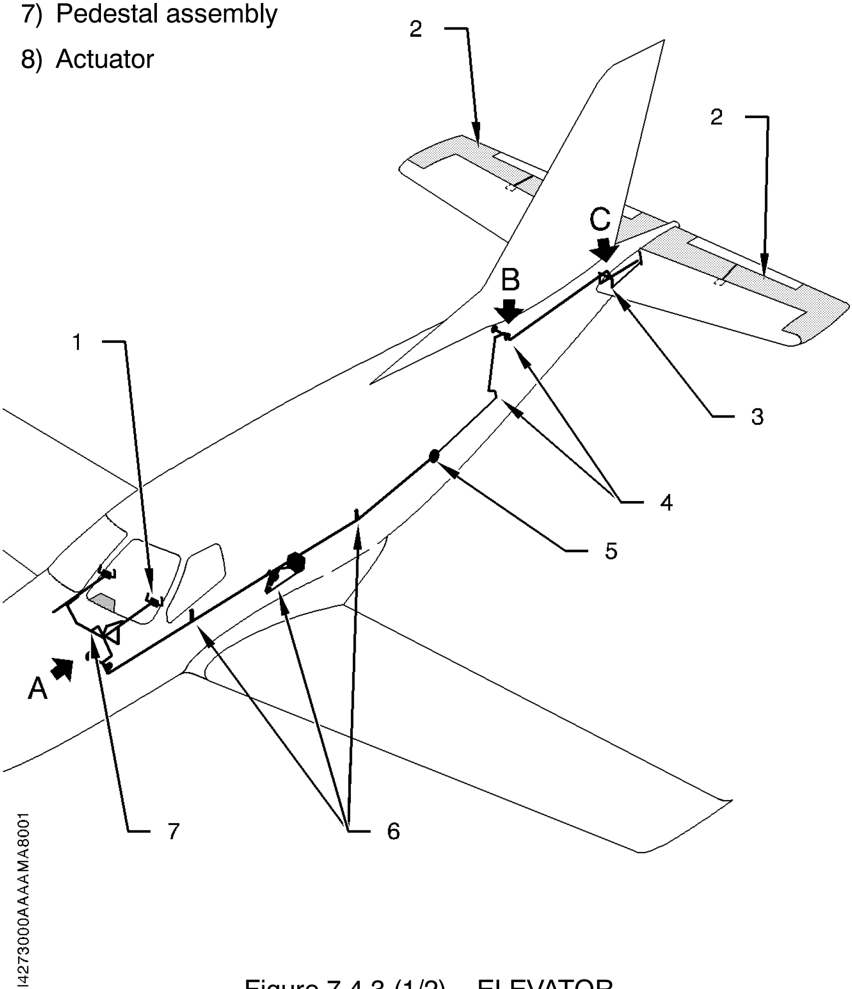


Figure 7.4.3 (1/2) - ELEVATOR

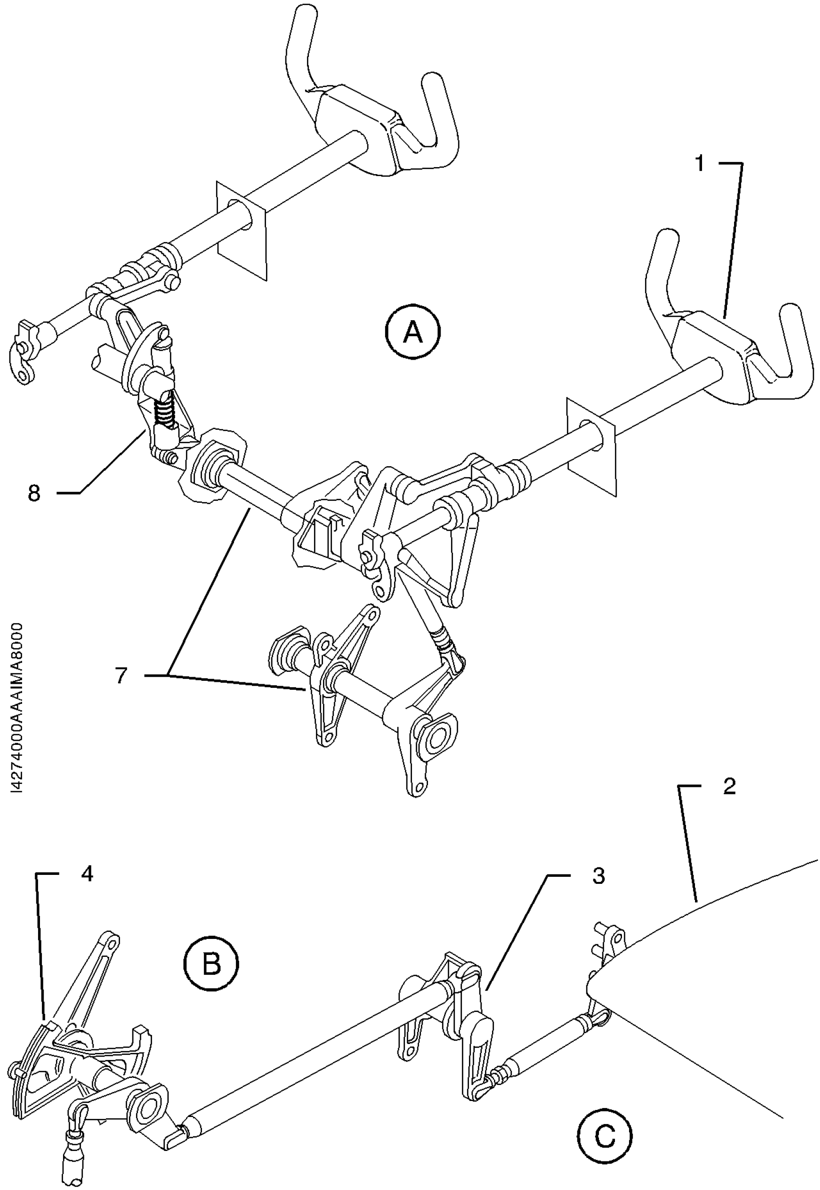


Figure 7.4.3 (2/2) - ELEVATOR

1) Cables
2) Pulleys
3) Pitch trim tabs
4) Actuating rods
5) Actuator
6) Pitch trim manual control wheel
7) Electric pitch trim control

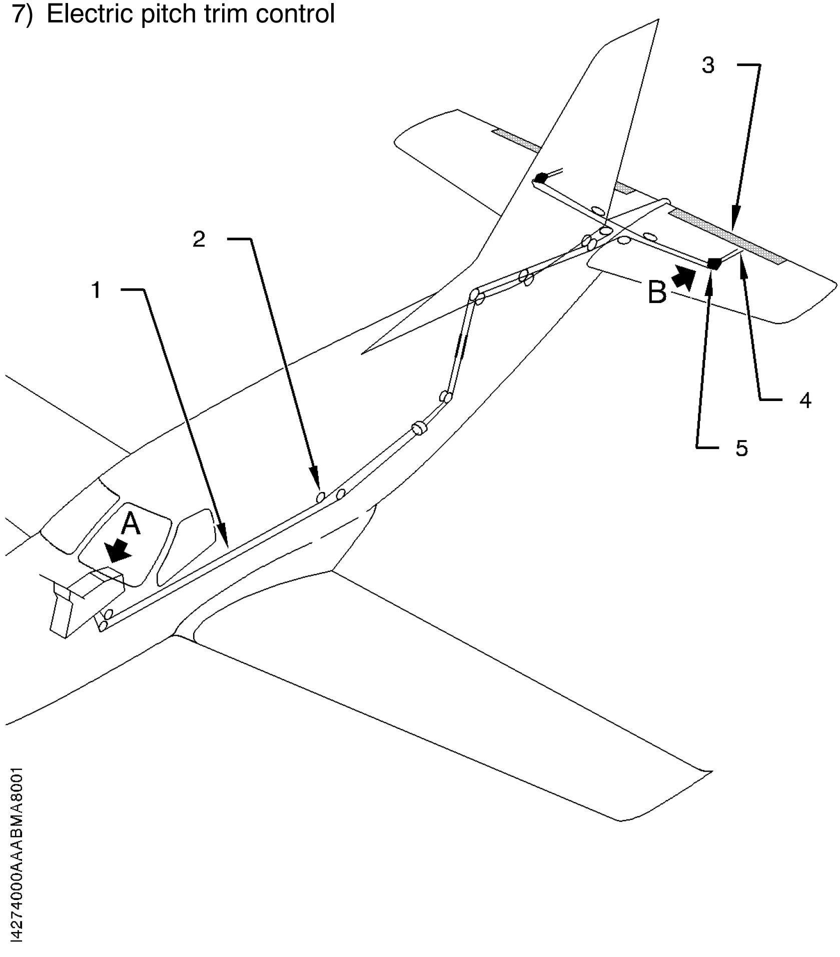


Figure 7.4.4 (1/2) - PITCH TRIM

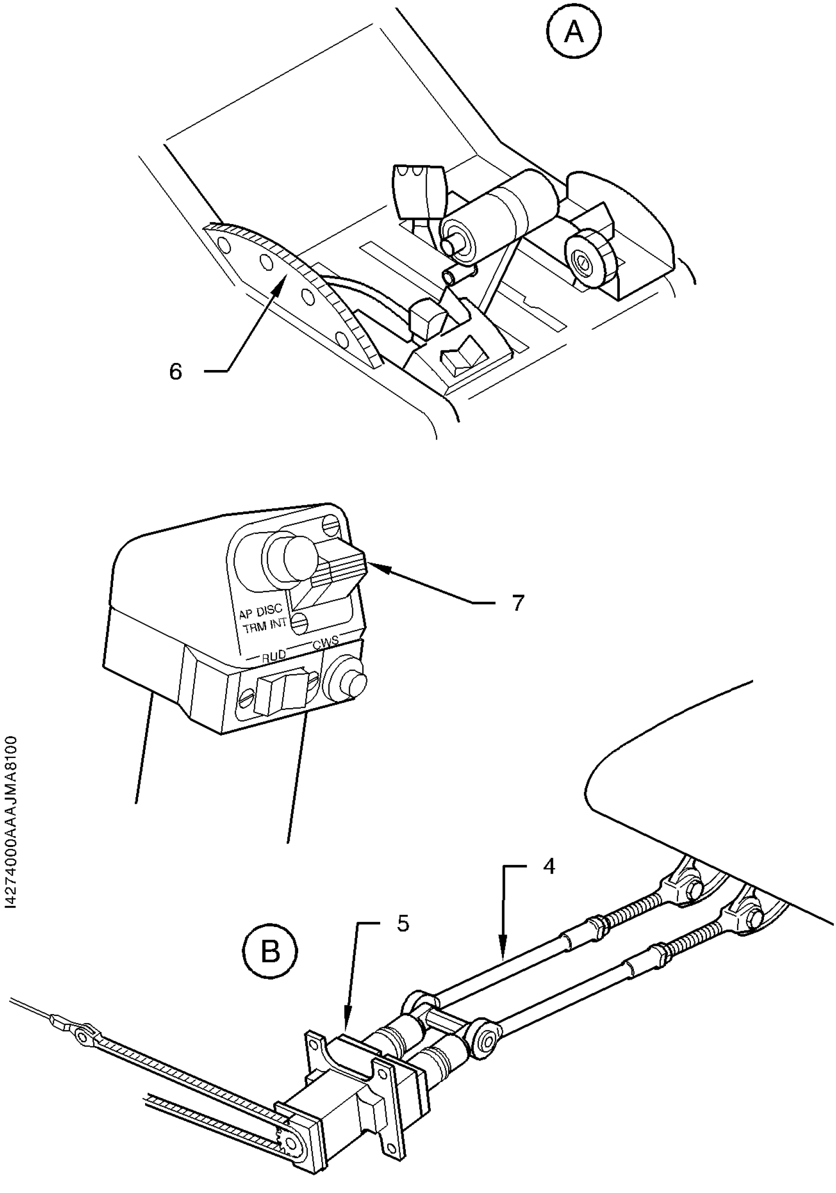


Figure 7.4.4 (2/2) - PITCH TRIM

RUDDER (Figure 7.4.5)

The rudder is hinged on three fittings attached to the vertical stabilizer rear spar.

Cables and a rod comprise the rudder pedals / rudder linkage.

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

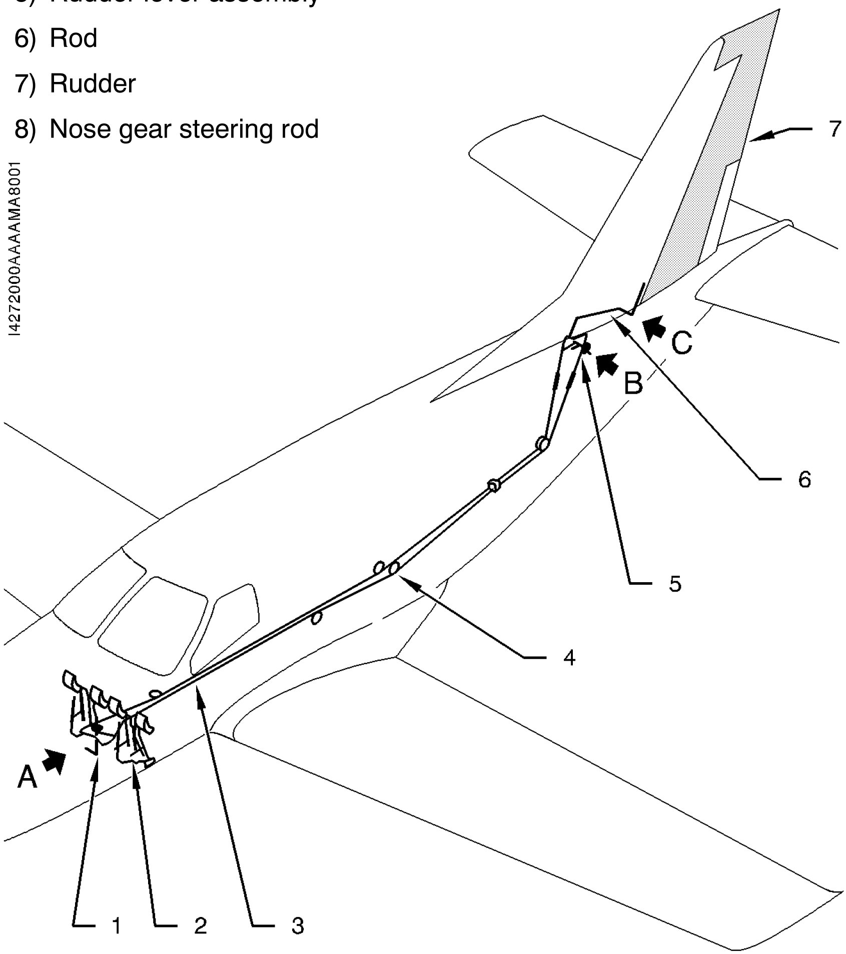


Figure 7.4.5 (1/2) - RUDDER

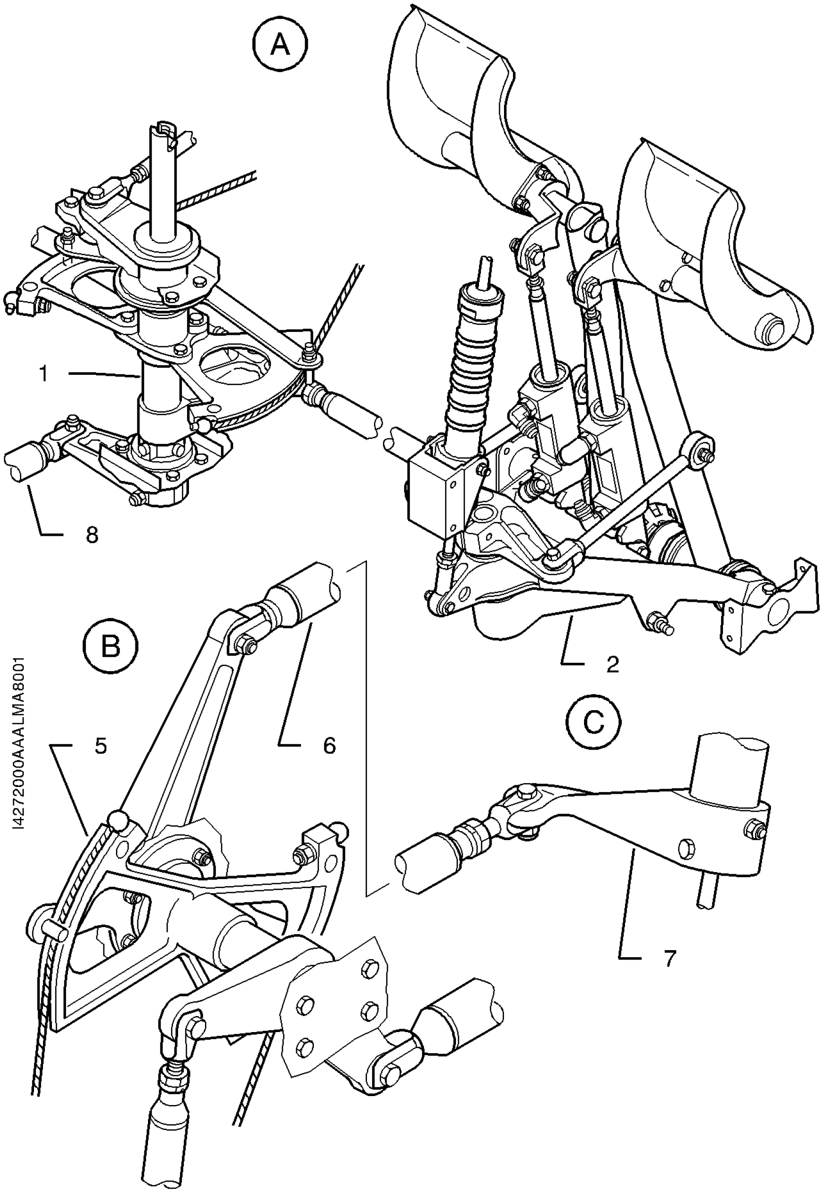


Figure 7.4.5 (2/2) - RUDDER

1) Trim switch on control wheel
2) Actuator
3) Rudder trim tab
4) Rods
5) Rudder trim control wiring

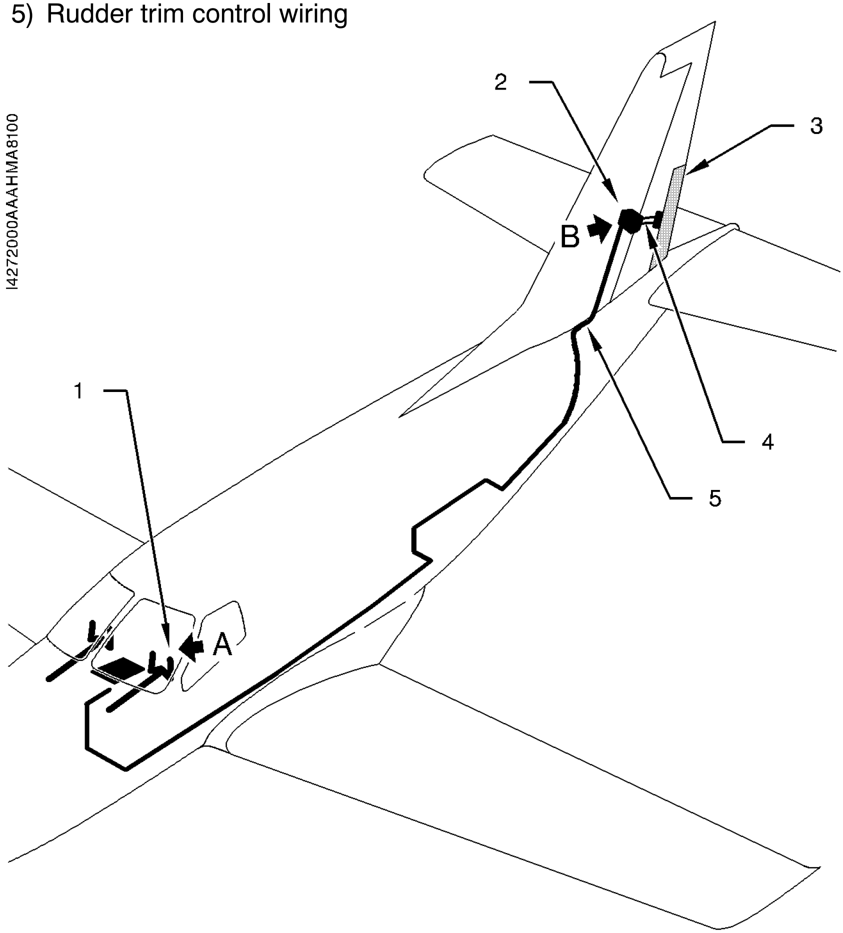
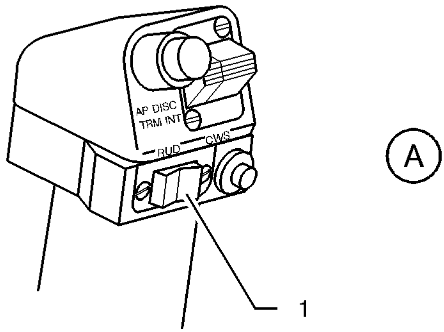


Figure 7.4.6 (1/2) - RUDDER TRIM



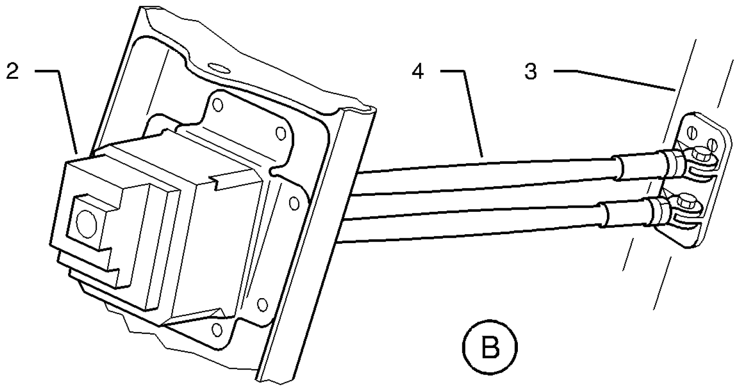


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Figure 7.4.6 (2/2) - RUDDER TRIM

7.5 - LANDING GEAR

The TBM 850 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 :

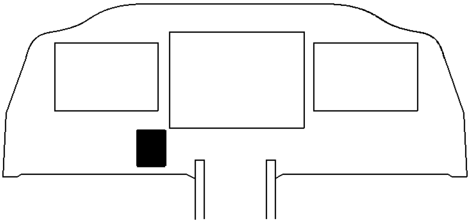
- 3 green indicator lights (one per landing gear),
- 1 red warning light.

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 independant 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

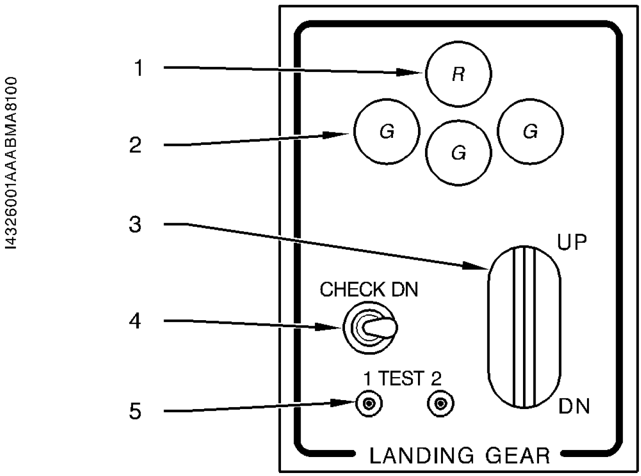


Figure 7.5.1 - CONTROL PANEL AND LANDING GEAR INDICATING

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

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 about 65 cycles.

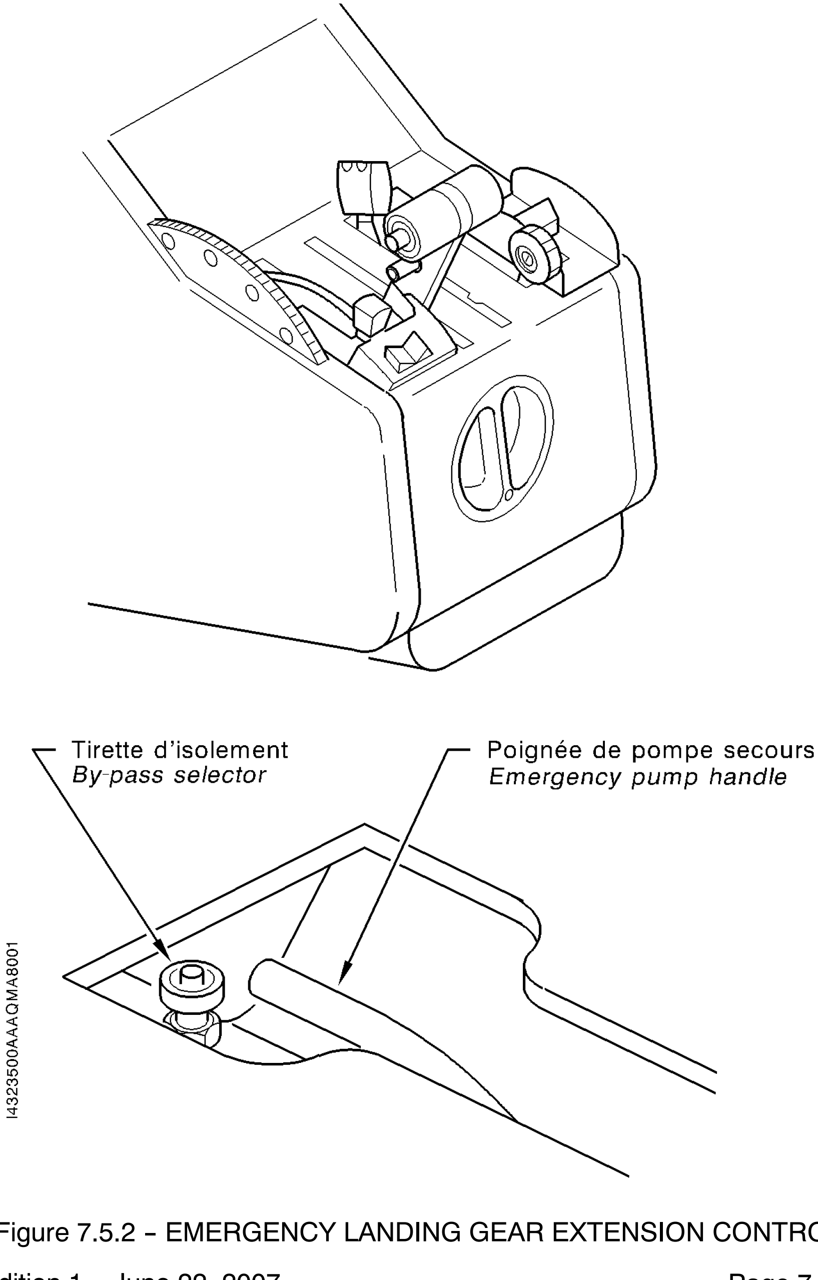


Figure 7.5.2 - EMERGENCY LANDING GEAR EXTENSION CONTROL

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 ± 28°.

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.

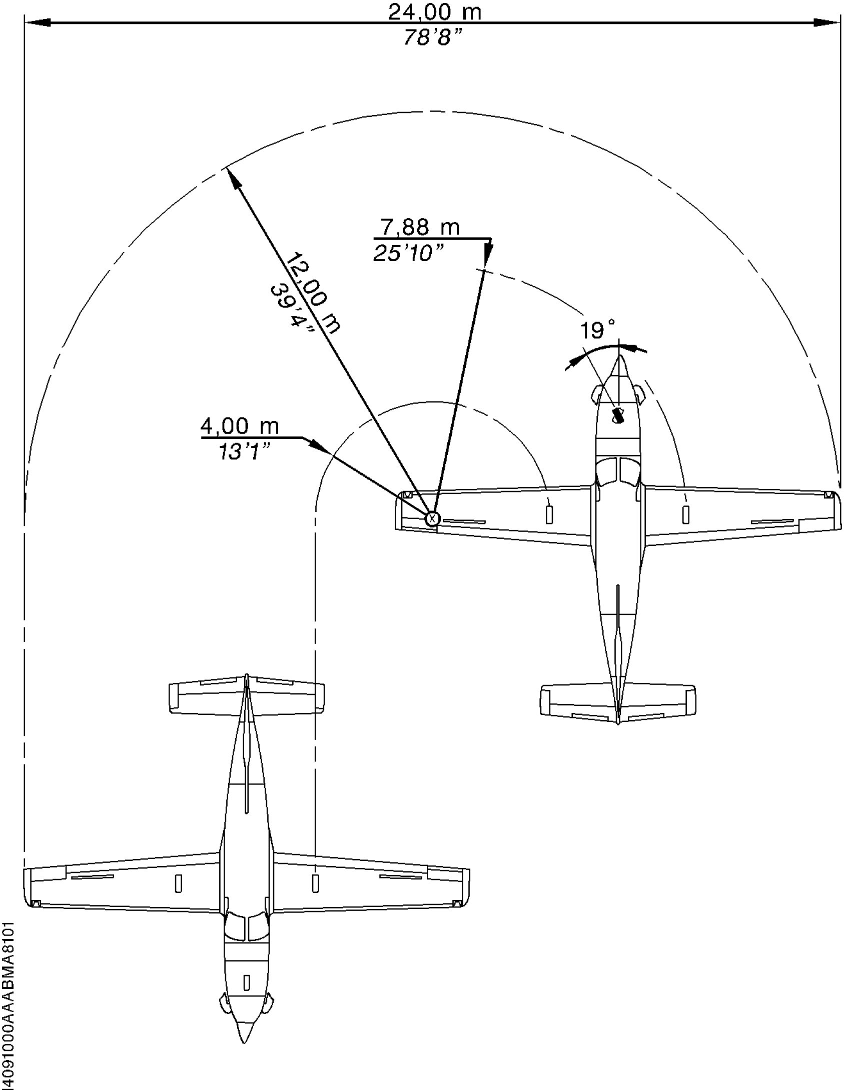


Figure 7.5.3 - MINIMUM TURN DIAMETER
(Full rudder pedals travel without
using differential braking)

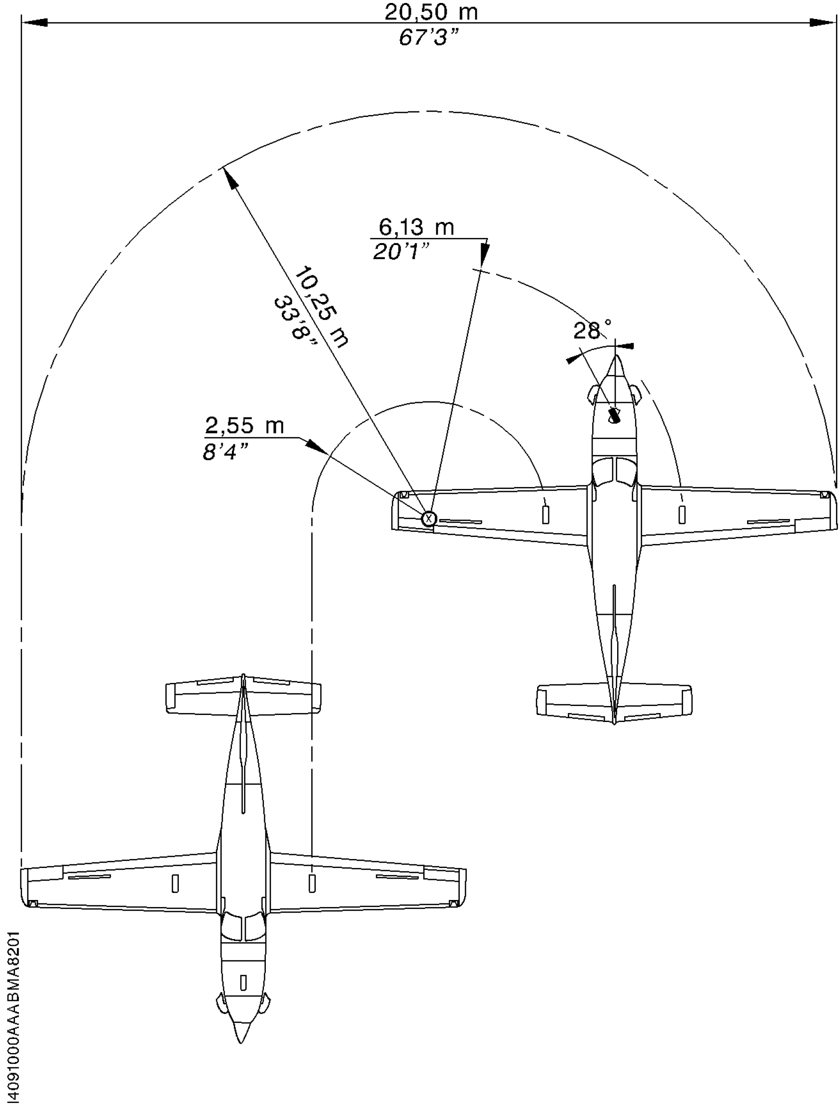


Figure 7.5.4 - MINIMUM TURN DIAMETER
(Full rudder pedals travel by
using differential braking)

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 and 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*

Tuyauterie souple alimentation
Supply hose

Tuyauterie flexible pression
Pressure flexible pipe

Tuyauterie rigide pression
Pressure rigid pipe

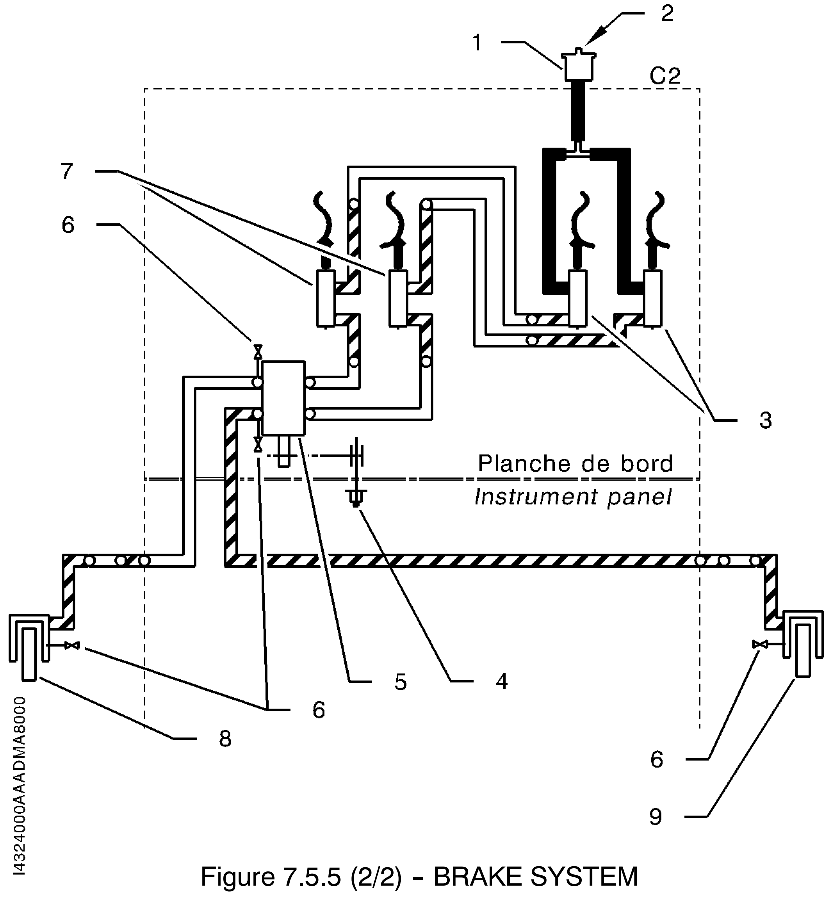


Figure 7.5.5 (2/2) - BRAKE SYSTEM

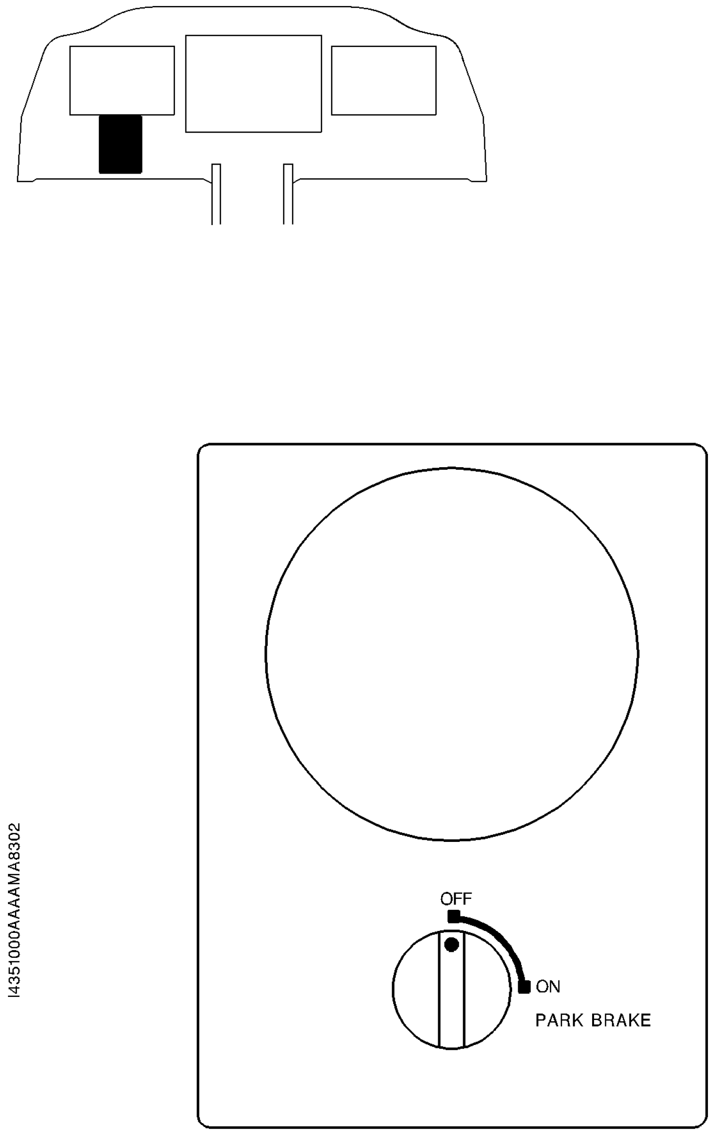


Figure 7.5.6 - PARKING BRAKE

7.6 - POWERPLANT

TURBOPROP ENGINE OPERATION (Figure 7.6.1)

The PRATT & WHITNEY CANADA turboprop engine (PT6A-66D model) is a free turbine engine rated at 850 SHP and developing a thermodynamic power of 1825 ESHP. An electrically driven device limits the power of the engine to 770 SHP (110 % TRQ - 2000 RPM) at sea level, when the flap control lever is not on "850" position (UP/TO/LDG).

Intake air enters engine through an annular casing and is then ducted toward compressor. The latter consists of four axial stages and one single centrifugal stage assembly to form a whole assembly. Compressed air and fuel are mixed and sprayed into combustion chamber by fuel nozzles. The mixture is first ignited by two spark igniter plugs, then combustion continues as a result of air-fuel mixture flow. Gases resulting from combustion expand through a series of turbines. The first one (gas generator turbine) drives compressor assembly and accessories, the two other ones (power turbines), independant from the first one, drive propeller shaft through a reduction gear box. Hot gases are evacuated through two exhaust stubs located laterally on both sides forward of engine cowling.

All engine driven accessories, except power turbine tachometer and propeller governor, are installed on accessory gearbox located rearward of engine.

1) Propeller governor
2) Exhaust stub
3) Axial compressors
4) Accessory gearbox
5) FCU Fuel control unit
6) Oil to fuel heater
7) Input coupling shaft
8) Air intake
9) Centrifugal impeller
10) Combustion chamber
11) Compressor turbine
12) Power turbine 1st stage
13) Power turbine 2nd stage
14) Power turbine shaft

Figure 7.6.1 (1/2) - POWERPLANT

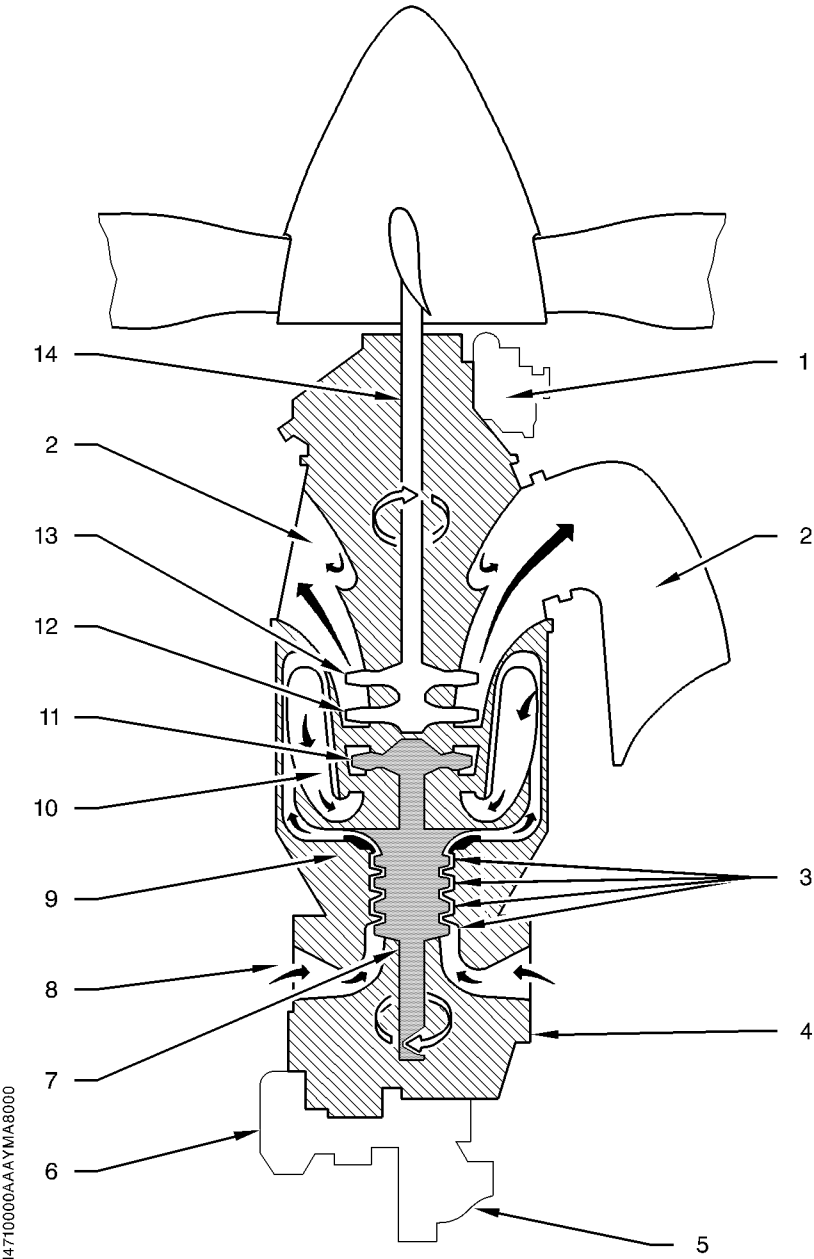


Figure 7.6.1 (2/2) - POWERPLANT

ENGINE 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)

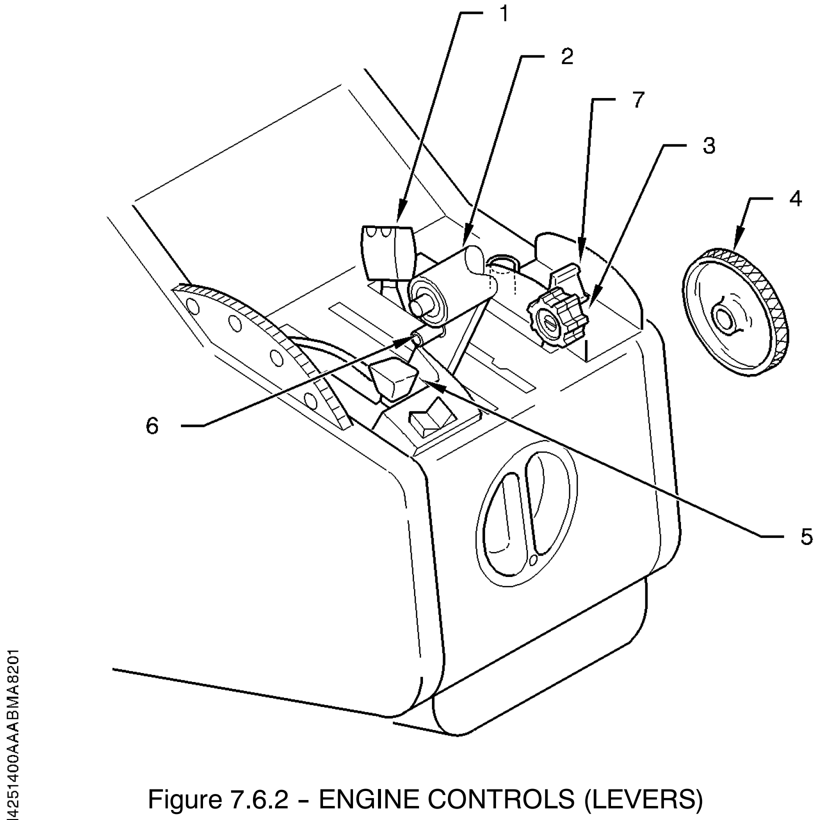


Figure 7.6.2 - ENGINE CONTROLS (LEVERS)

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.

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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.

Maximum power mode (Figure 7.6.2)

850 SHP maximum power is selected by the pilot for climb and cruise, only with retracted flaps, by moving flap control lever (Item 7) past the lock to the 850 position.

Unlocking is performed by raising the lever and moving it forward.

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 torquemeter.

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

POWERPLANT STARTING MUST BE PERFORMED BY QUALIFIED PERSONNEL AND BY FOLLOWING PROCEDURES AND PARAMETERS DESCRIBED IN SECTION 4 "NORMAL PROCEDURES"

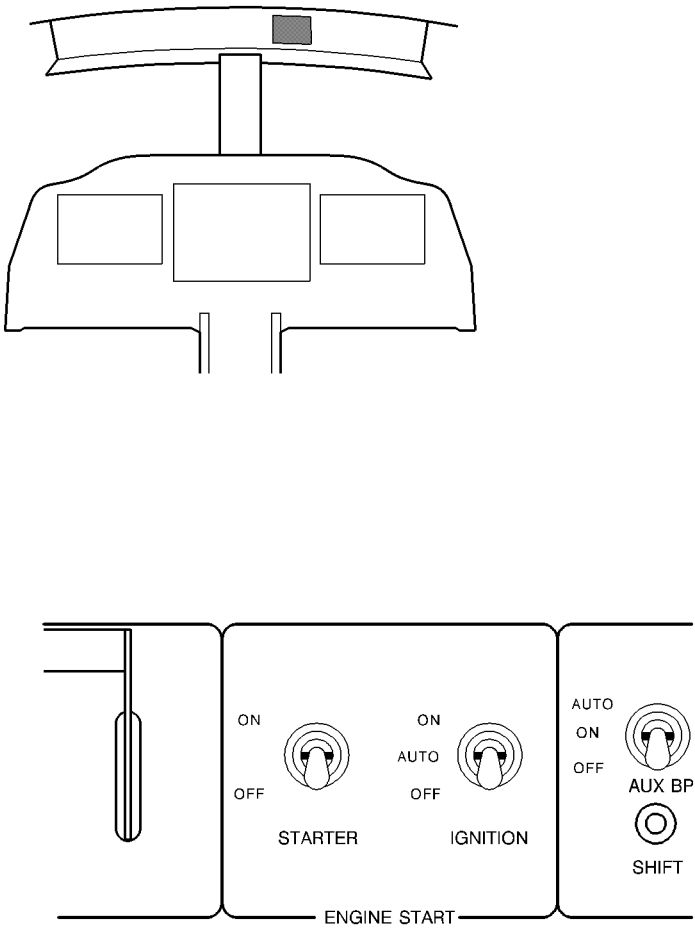

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Figure 7.6.3 - ENGINE STARTING

ENGINE AIR INLET

Engine air inlet is located at front lower section of engine cowling. Air inlet port is protected against icing by a hot air flux provided by engine. Air is driven throughout a duct in engine casing before entering engine through a protective screen. An inertial separator system inside the air duct protects the engine from ingesting dense particles (water, ice, fine gravels, sand).

Separator consists of two movable vanes. During normal operation, air is conducted directly towards engine air inlet. To separate particles suspended in the air, vanes are positioned to force engine induction air to execute a sharp turn : under the effect of centrifugal force denser particles separate from the air and are discharged overboard through two apertures located under engine cowling.

Operation of inertial separator vanes is electrically controlled by "INERT SEP" 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 visible as long as switch remains ON. Full deflection takes about 30 seconds.

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 solenoïd 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 % at sea level. The torque limiter is deactivated when the flap control lever is on “850” position.

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 pedestal console near flap control lever is used on ground to check proper operation of propeller overspeed regulator. This push-button activates a solenoïd, 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
2) Flowmeter
3) Collector tank
4) Fuel regulator
5) High pressure pump (HP)
6) Oil to fuel heater
7) Low pressure switch
8) Pressure transmitter
9) Fuel jet
10) Main mechanical boost pump
11) Electric boost pump
12) Fuel filter
13) Filter clogging by-pass valve
14) Filter clogging indicator
15) Fuel unit
16) Filter drain
17) Fuel return pipe
18) Filling port
19) NACA scoop
20) Tank vent valve
21) Fuel level gages
22) Tank drain valve
23) Check-valve
24) Low level detector
25) Suction strainer
26) Fuel amplifier
27) Sequencer

Figure 7.7.1 (1/2) - FUEL SYSTEM

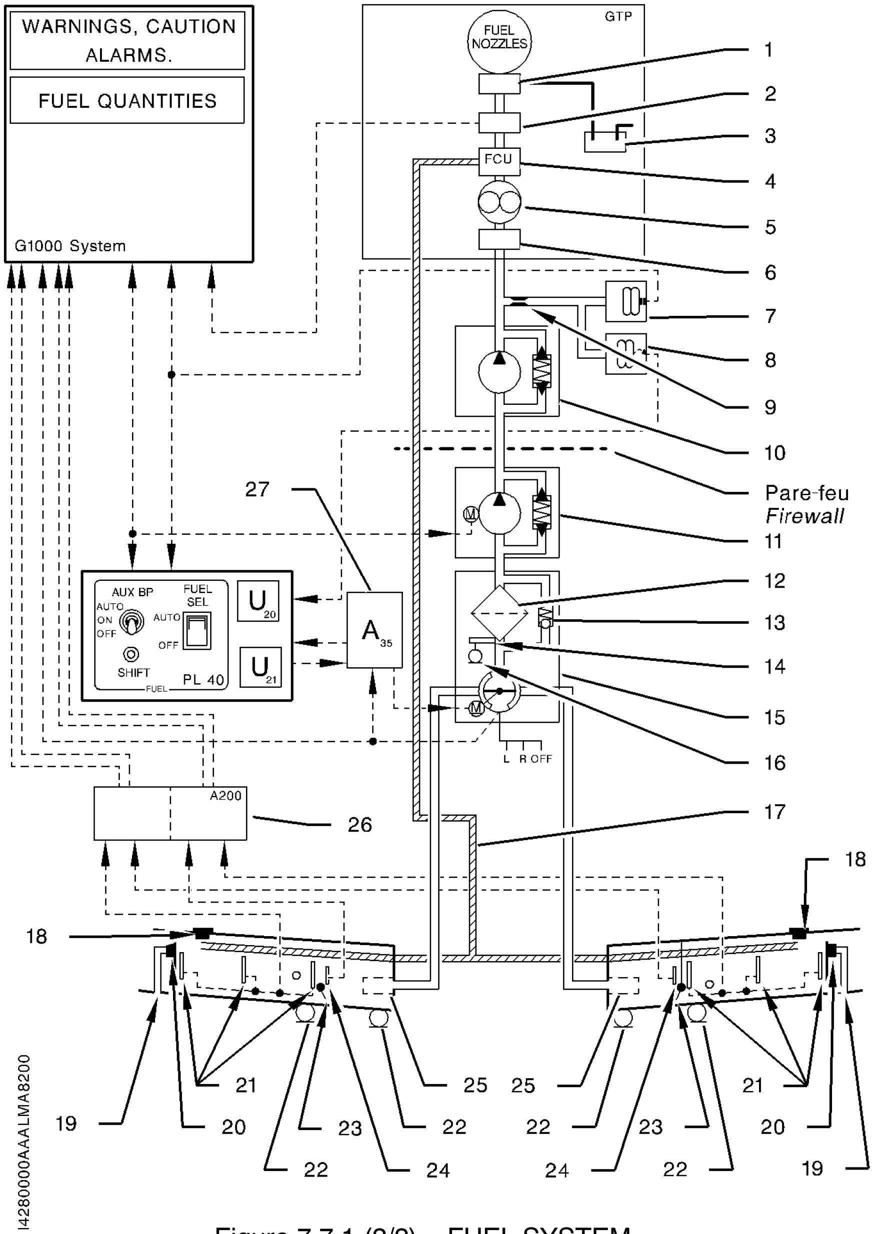

Figure 7.7.1 (2/2) - FUEL SYSTEM

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 or the other in predetermined sequences. These sequences depend on airplane configuration (ground, in-flight, fuel low level CAS messages appearance).

Automatic tank selection system comprises an electronic sequencer, an actuator attached on the fuel unit, "FUEL SEL" two-position selector (AUTO, MAN) and "SHIFT" 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.

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.

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 CAS messages not visible, the new selected tank remains operating and a new sequence is initiated.

NOTE :
This procedure allows the pilot to preferably choose the tank from which he 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.

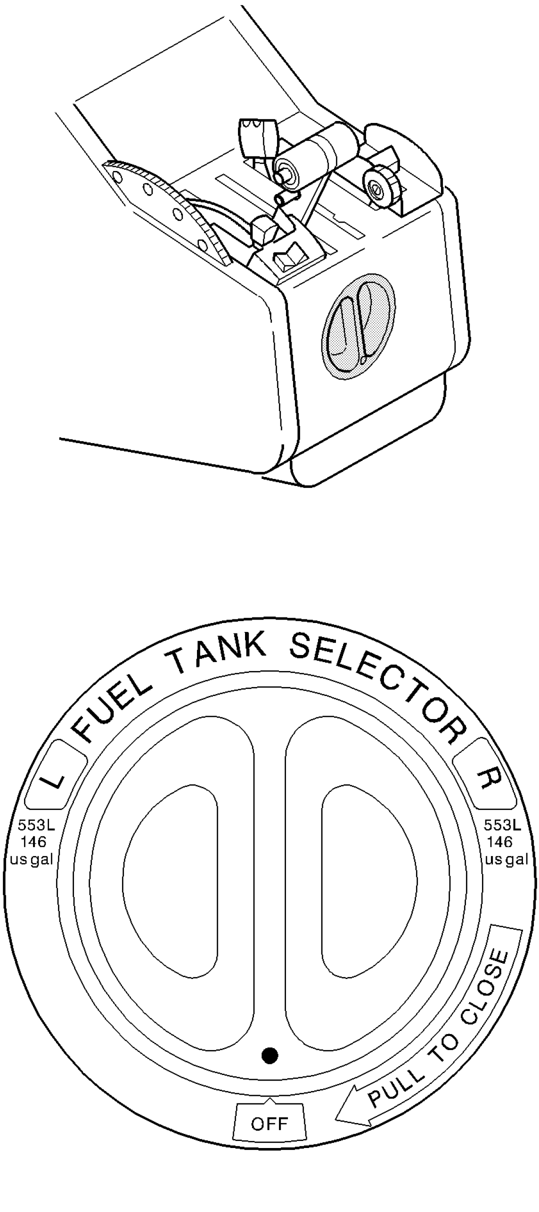

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Figure 7.7.2 - MANUAL SELECTOR OF FUEL TANKS

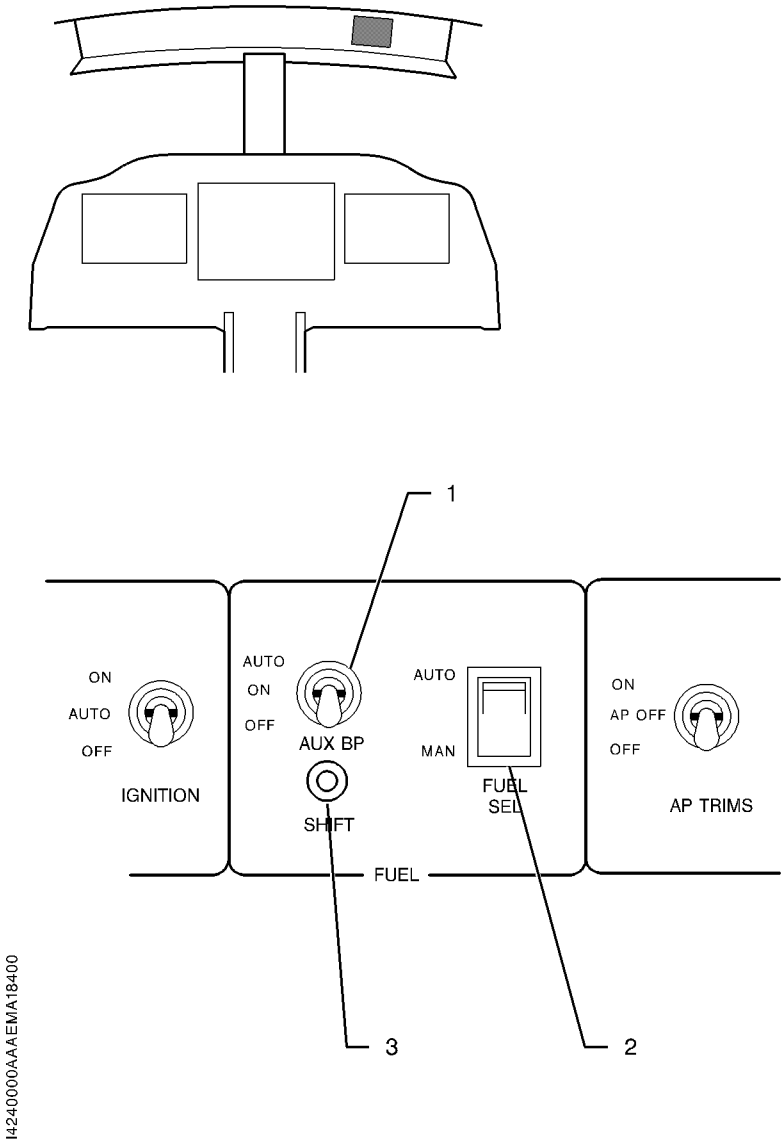


Figure 7.7.3 - FUEL CONTROL PANEL

MAIN MECHANICAL BOOST PUMP

The mechanical boost pump is attached to accessory gearbox and supplies fuel necessary for engine operation.

ENGINE FUEL SYSTEM

The engine fuel system consists of a fuel regulator, pumps, filters, a fuel divider and fuel nozzles. The system provides the fuel flow necessary to satisfy the engine power and rating needs.

The fuel coming from airplane system goes through a heater which is automatically controlled by a thermostatic valve.

FUEL GAGING INSTALLATION

Fuel gaging installation is a capacitive type. Fuel data are displayed in us gallons. Three fuel level gages are installed in each tank. The wing root side fuel level gage is equipped with a low level detector which leads to fuel low level CAS messages appearance, when usable fuel quantity remaining in the concerned fuel tank is under about 9 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
- "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

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, 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

Figure 7.7.4 (1/2) - FUEL SYSTEM DRAINING POINTS AND CLOGGING INDICATOR

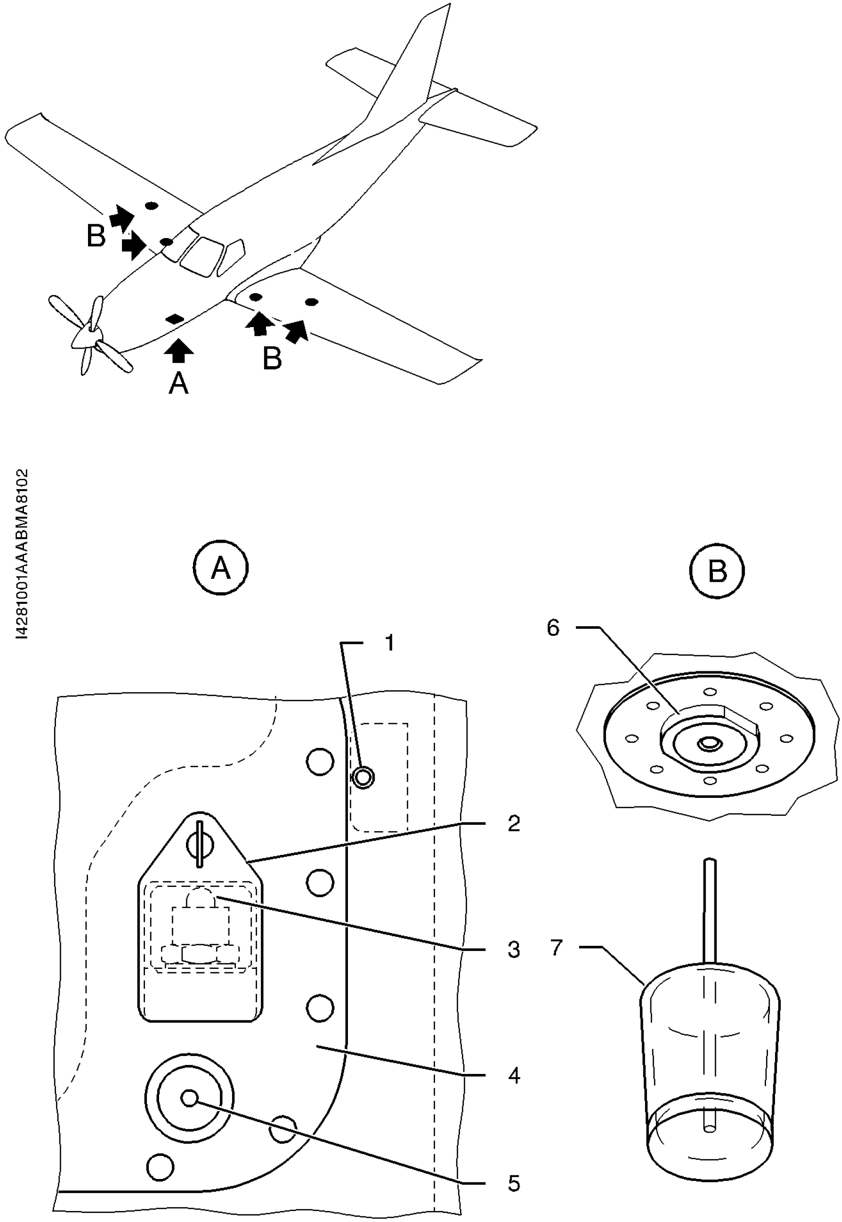


Figure 7.7.4 (2/2) - FUEL SYSTEM DRAINING POINTS AND CLOGGING INDICATOR

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 "BATT 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 BUS 1”, “ESS BUS 2” and ”BATT BUS” bars are supplied.

NOTE :
Supplying ”BUS 1”, ”BUS 2” and ”BUS 3” bars is always possible, resetting temporarily ”ESS BUS TIE” selector to NORM position.

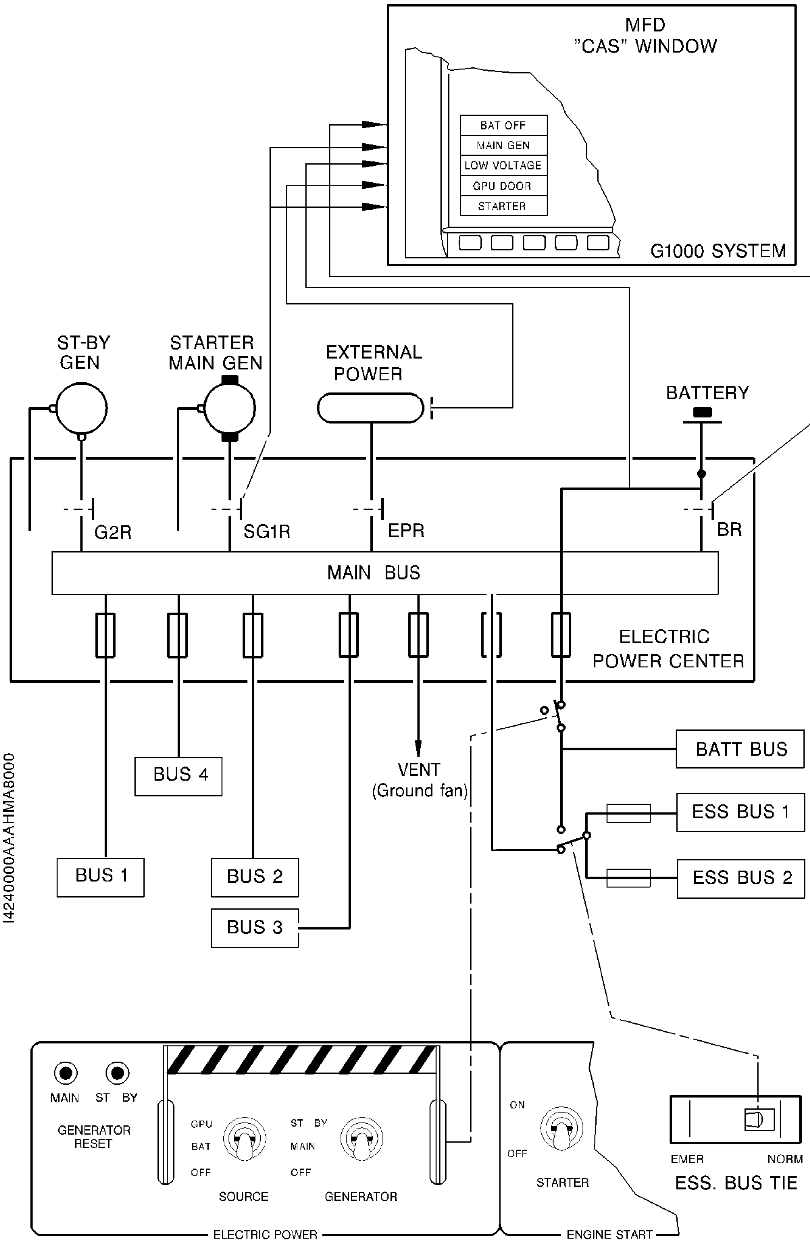


Figure 7.8.1 - ELECTRICAL DIAGRAM

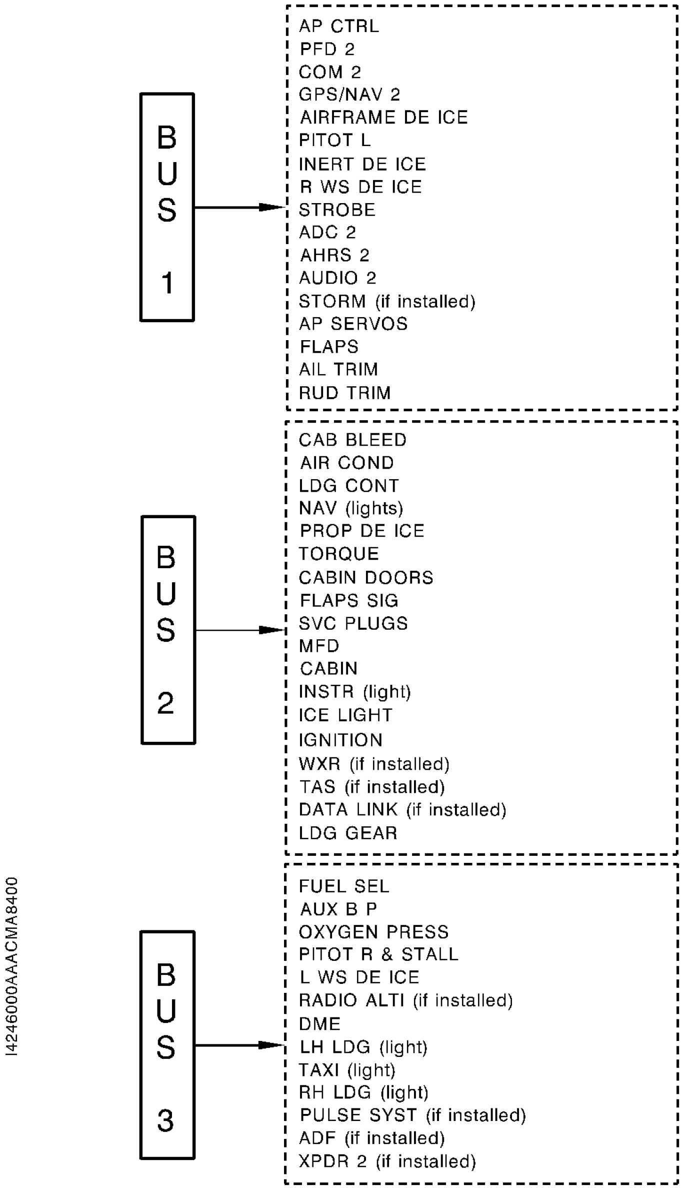
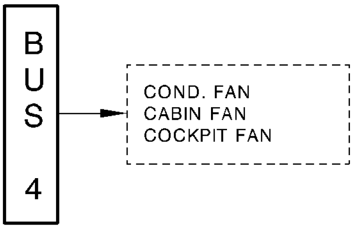
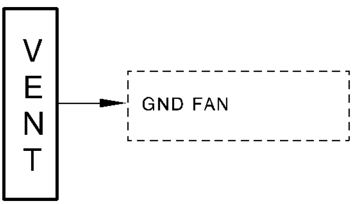


Figure 7.8.2 (1/3) - ELECTRICAL DISTRIBUTION OF BUS BARS



NOTE: CIRCUIT BREAKERS ON A1 SUPPORT PLATE



NOTE: CIRCUIT BREAKER ON A1 SUPPORT PLATE

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Figure 7.8.2 (2/3) - ELECTRICAL DISTRIBUTION OF BUS BARS

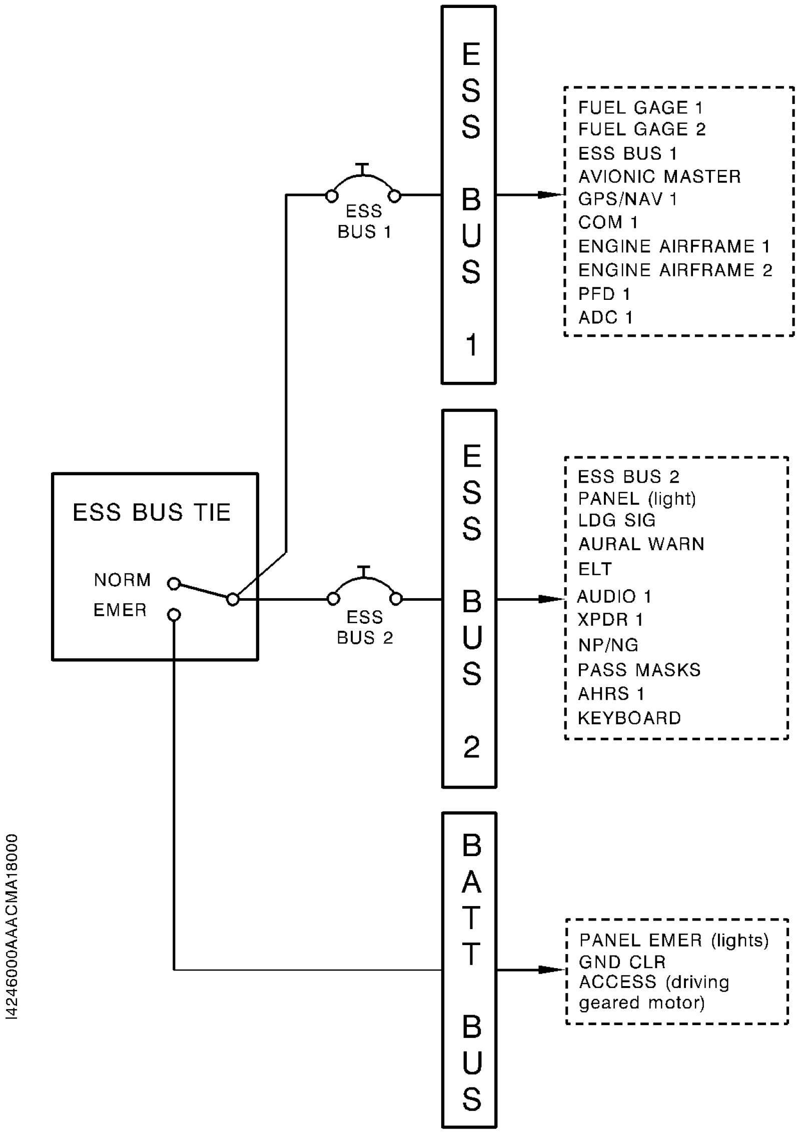

Figure 7.8.2 (3/3) - ELECTRICAL DISTRIBUTION OF BUS BARS

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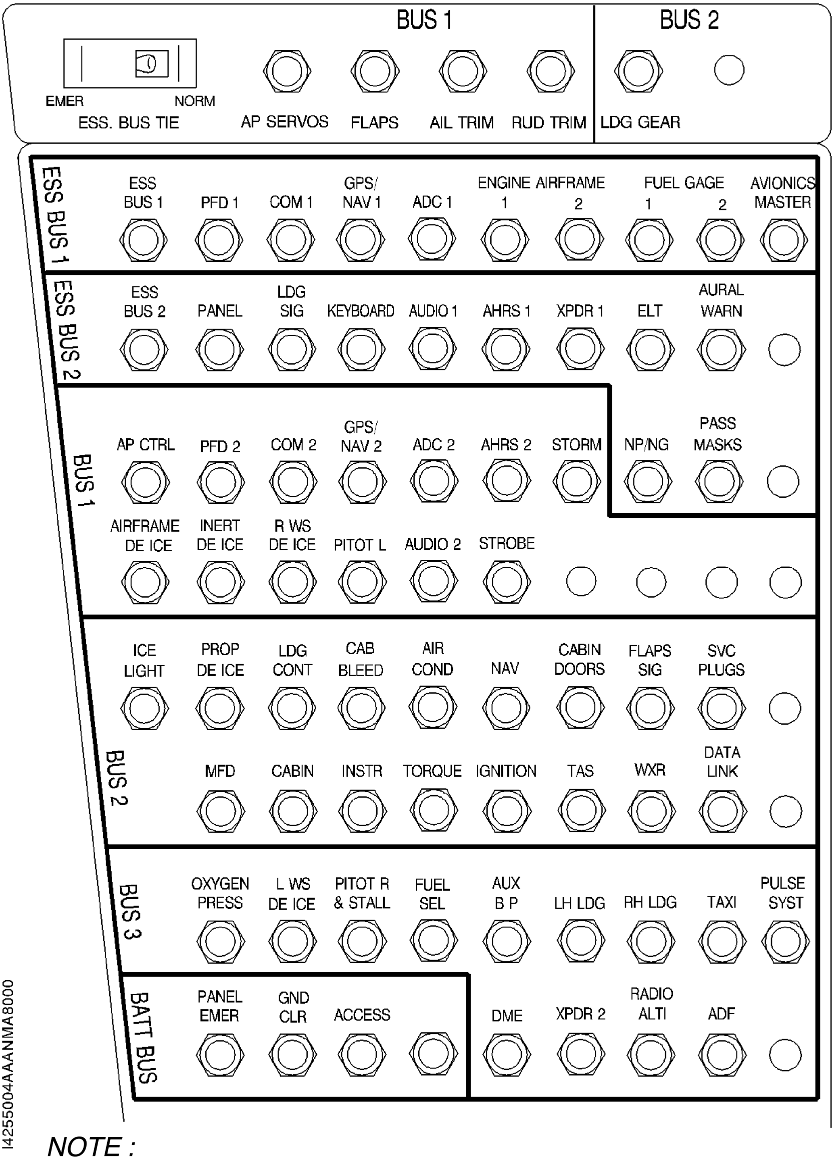
ESS BUS TIE	Essential bus NORM & EMER switch
BUS 1	
AP SERVOS	Autopilot servo protection
FLAPS	Flaps protection
AIL TRIM	Aileron trim protection
RUD TRIM	Pitch trim protection
BUS 2	
LDG GEAR	Landing gear general supply protection
ESS BUS 1	
ESS BUS 1	Essential bus 1 circuit protection
PFD 1	Primary Flight Display 1 protection
COM 1	VHF 1 protection
GPS/NAV 1	GPS NAV 1 protection
ADC 1	Air Data Computer 1 protection
ENGINE AIRFRAME 1	Powerplant cont. protec. : Oil temp. & pres., torque, propeller
ENGINE AIRFRAME 2	Powerplant cont. protection : Ng, flowmeter & ITT
FUEL GAGE 1	L.H. fuel gage protection
FUEL GAGE 2	R.H fuel gage protection
AVIONICS MASTER	"AVIONICS MASTER" switch protection
ESS BUS 2	
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 WARN	Aural warnings protection
NP/NG	Tachometer signal conditioner protection
PASS MASKS	Passengers' oxygen masks protection
BUS 1	
AP CTRL	Flight controller protection
PFD 2	Primary Flight Display 2 protection
COM 2	VHF 2 & radio protection
GPS/NAV 2	GPS NAV 2 protection
ADC 2	Air Data Computer 2 protection
AHRS 2	Attitude and Heading Reference System 2 protection
STORM	Stormscope protection (if installed)
AIRFRAME DE ICE	Empennage and wing leading edges deicing

(Continued on next page)

Figure 7.8.3 (1/3) – CIRCUIT BREAKER PANEL (Typical arrangement)

BUS 1 (Continued)	
INERT DE ICE	Inertial separator protection
R WS DE ICE	R.H. windshield deicing protection
PITOT L	Pitot L heating protection
AUDIO 2	Audio control panel 2 protection
STROBE	Strobe lights protection
BUS 2	
ICE LIGHT	L.H. wing leading edge lighting and lighting test protection
PROP DE ICE	Propeller deicing protection
LDG CONT	Landing gear control protection
CAB BLEED	Cabin pressurization protection
AIR COND	Cabin ventilation and vapor cycle system protection
NAV	Navigation lights protection
CABIN DOORS	Cabin doors opening protection
FLAPS SIG	Trim and flaps regulator protection
SVC PLUGS	28 VDC plugs (std) or 12 VDC plugs (optional) protection
MFD	Multifunction display protection
CABIN	Passenger's reading lamps protection
INSTR	Instruments lighting protection
TORQUE	Torque control protection
IGNITION	Powerplant ignition protection
TAS	TAS (if installed) protection
WXR	Weather radar (if installed) protection
DATA LINK	Data Link (if installed) protection
BUS 3	
OXYGEN PRESS	Oxygen/Pressure indication protection
L WS DE ICE	L.H. windshield deicing protection
PITOT R & STALL	Pitot R and stall warning heating protection
FUEL SEL	Tank selector timer protection
AUX BP	Electrical fuel pump protection
LH LDG	L.H. landing light protection
RH LDG	R.H. landing light protection
TAXI	Taxi light protection
PULSE SYST	Pulse lite system protection (if installed)
DME	DME protection (if installed)
XPDR 2	Transponder 2 (if installed) protection
RADIO ALTI	RADIO ALTI (if installed) protection
ADF	ADF protection (if installed)
BATT BUS	
PANEL EMER	Instrument panel emergency lighting protection
GND CLR	Ground clearance protection
ACCESS	Cabin access lighting protection

Figure 7.8.3 (2/3) - CIRCUIT BREAKER PANEL (Typical arrangement)



NOTE :
If an additional equipment is installed, its circuit breaker is installed on a free location.

Figure 7.8.3 (3/3) - 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

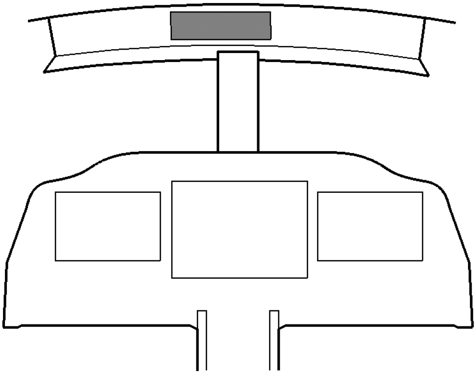
PROTECTION - SAFETY (Figure 7.8.4)

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 "BATT BUS" 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

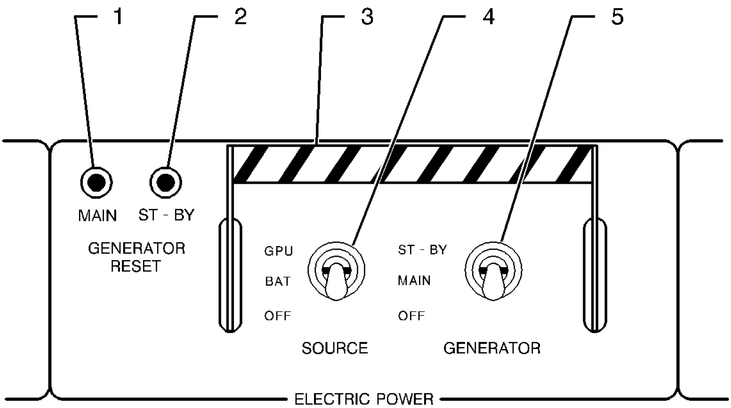


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Figure 7.8.4 - ELECTRICAL CONTROL

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.

The Pulse lite system (if installed) enables the pilot to control landing light flashing to be seen by the control tower or in heavy traffic areas.

Taxi 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).

FWD compartment light

The dome light of the FWD 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

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

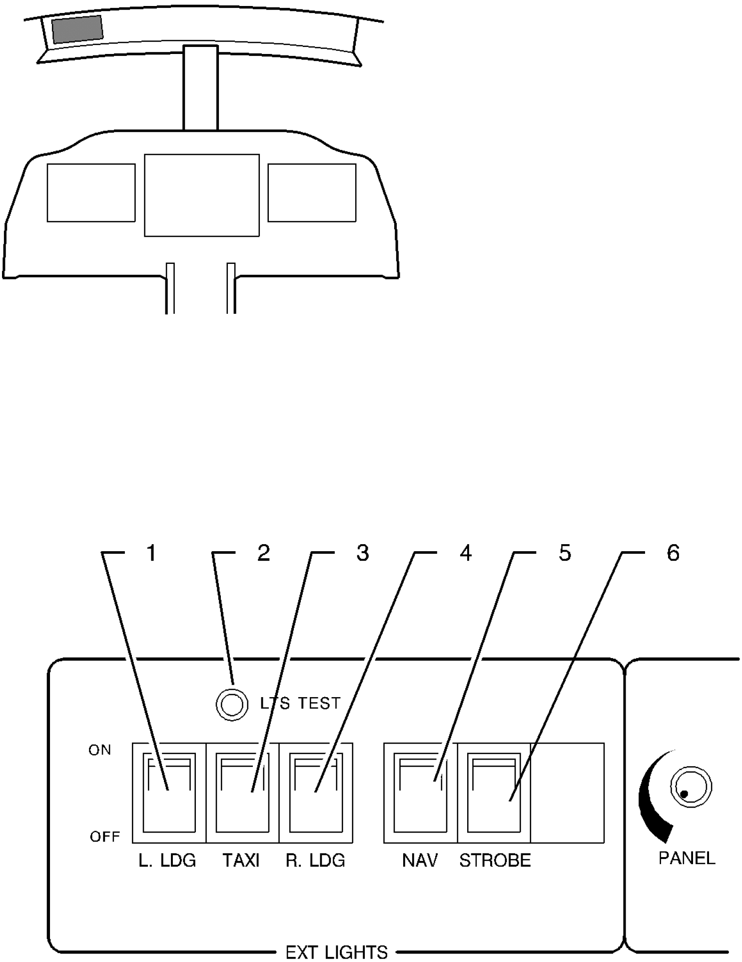

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Figure 7.8.5 (2/2) - EXTERNAL LIGHTING CONTROLS

INTERIOR LIGHTING (Figure 7.8.6)

Interior lighting consists of access, cabin, instrument panel, instruments, baggage compartment and emergency lighting.

Access lighting

Access lighting consists of two floodlights located on the ceiling upholstering (one at the level of the access door, the other at the level of the storage cabinet) and the L.H. dome light of baggage compartment. ”ACCESS” push-button on ”INT LIGHTS” panel and the push-button located on access door rear frame control these 3 lights via a delayed breaker.
If the CRASH lever is down, access lighting is automatically cut out after 3 minutes.
If the CRASH lever is up, there is no access lighting automatic cut out.

Cabin lighting

Cabin lighting consists of two swiveling floodlights for front seats, six individual floodlights for rear passenger seats and the baggage compartment R.H. dome light. Each floodlight is controlled by a push-button located near. The 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 baggage compartment dome light 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 visor lighting tubes.

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 both sides of the cockpit overhead panel above front seats. It illuminates instrument panel assembly in case of visor lighting tubes and / or instrument integrated lighting failure.

A rheostat located on the cockpit overhead panel controls emergency lighting operation and intensity. Forward rotation of control knob allows changing from OFF position to minimum lighting then increasing lighting to maximum brightness.

Map reading light illumination

The illumination of the map reading lights located on control wheels is controlled by the switch (rheostat) located on each light.

1) Instrument lighting switch (rheostat)
2) Instrument panel lighting switch (rheostat)
3) Cabin lighting switch (rear seats reading light)
4) Access door, baggage compartment and FWD dome light (delayed breaker) push-button
5) Emergency lighting switch

Figure 7.8.6 (1/2) - INTERNAL LIGHTING CONTROLS

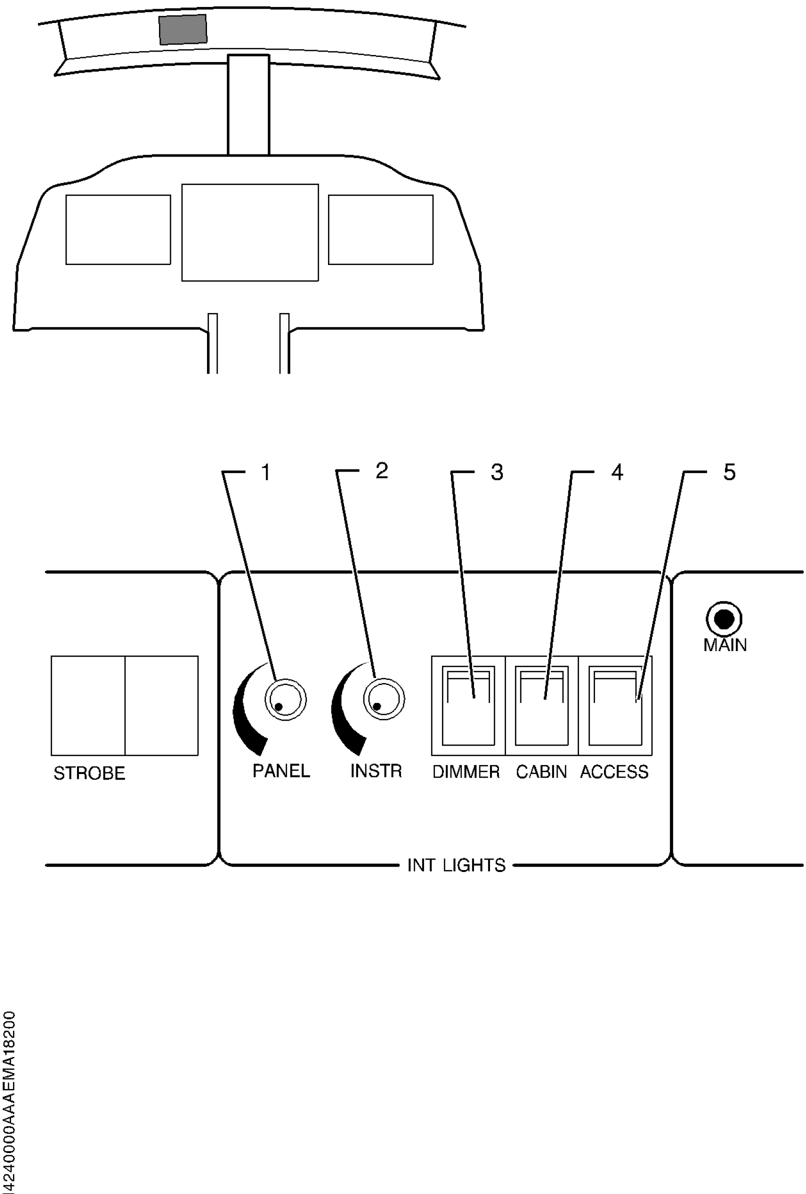

Figure 7.8.6 (2/2) - INTERNAL LIGHTING CONTROLS

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7.9 - AIR CONDITIONING AND PRESSURIZATION

The airplane is equipped with a Global Air System (GAS), which ensures air conditioning and pressurization (Figure 7.9.1).

GAS controls are located on "ECS" panel at the L.H. side of the R.H. side control wheel and above the arm rest of the L.H. passenger's seat (Figure 7.9.2).

The system is monitored through CAS messages appearing on the GDU 1500 MFD.

NOTE :
A list of abbreviations used in this chapter is given in Figure 7.9.1.

The GAS is composed of 3 main sub-systems :

- Engine Bleed Air System,
- Dual zones Environmental Control System, including heating and cooling functions,
- Cabin Pressurization Control System.

These 3 sub-systems are managed by a single digital controller (GASC), which receives informations coming from :
- the sensors set in the sub-systems,
- the human interfaces set in the airplane.

The GASC elaborates the proper commands to the sub-system actuators and indication or warning elements.

ENGINE BLEED AIR SYSTEM

The Engine Bleed Air System is designed to ensure the following functions :
- to bleed air from the engine,
- to ensure a controlled airflow in the cabin,
- to adjust the temperature of the bleed air at a compatible level, in order to control the cabin temperature in heating and cooling modes.

The "BLEED" switch allows to switch on the Engine Bleed Air System provided that the engine runs. The Ground Fan (GF) runs until takeoff.

The "BLEED" switch is fitted with a blocking device between AUTO and OFF/RST positions preventing the operator from a non expected setting of "BLEED" switch to OFF/RST position.

The “BLEED TEMP” warning message appears in the GDU 1500 MFD “CAS” window (in display normal conditions), when the Bleed Temperature switch (BTSW) or the Overheat Thermal Switch (OTSW) triggers on.

The “ BLEED OFF” caution message appears in the GDU 1500 MFD “CAS” window (in display normal conditions), when the Flow Control Shut Off Valve (FCSOV) and the Shut Off Valve (SOV) are closed.

To reactivate the system, set ”BLEED” switch to OFF/RST, then to AUTO.

<u>To bleed air from the engine</u>

The Engine Bleed Air System is based on 2 engine bleed ports operation. The normal operation is performed on P2.5 engine port as far as the pressure or temperature available at this port is able to comply with the needs. If one of these conditions are not fulfilled, the system automatically switches to P3 engine bleed port. The switching back to P2.5 supply is automatically performed as far as the conditions on P2.5 are restored to adapted values.

The sensor (IPPS) measures continuously the pressure at the P2.5 pressure port and sends the value to the Global Air System Controller (GASC) which manages the ports switching on condition with the Shut Off Valve (SOV). A Non Return Valve (NRV) secures the P2.5 pressure port when the P3 pressure port is opened.

<u>To ensure a controlled airflow in the cabin</u>

The bleed flow control operation, including bleed AUTO/bleed OFF controls, is ensured by the FCSOV driven by the GASC.

<u>To adjust the temperature of the bleed air</u>

The bleed air outlet temperature control is ensured by the By-Pass Valve (BPV) in association with the Main Heat Exchanger (MHX).

The temperature measurement loop given by the Inlet Temperature Sensor (ITS) and the 2 Ventilated Temperature Sensors (CKVTS, CBVTS) sends the value to the GASC which compares them with the set temperature and manages the BPV position. The BPV derives a part of the bleed air through the MHX to cool it and mix it to the remaining air.

The Engine Air Bleed System is supplied by “BUS 2” bar and protected by the “CAB BLEED” CB60 circuit breaker.

The system includes an automatic load shedding feature which operates when :

- "GENERATOR" selector is on "ST-BY",
- "AIRFRAME DE-ICE" switch is "ON",
- "PROP DE-ICE" switch is "ON",
- engine is started with electrical power supplied by a GPU.

DUAL ZONES ENVIRONMENTAL CONTROL SYSTEM

The Environmental Control System is based on two independent air circuits. The heating circuit uses the controlled temperature bleed air. The cooling circuit is based on a Vapor Cycle System (VCS).

The Environmental Control System is designed to ensure the following functions :
- Cockpit / Cabin Heating function
- Cockpit / Cabin Cooling function.

The Environmental Control System is supplied by "BUS 2" bar and protected by the "AIR COND" CB160 circuit breaker. Three fans are supplied by "BUS 4" bar and protected respectively by following circuit breakers : "COND FAN" CB114, "CABIN FAN" CB113 and "COCKPIT FAN" CB112. The ground fan is supplied by "VENT" bar and protected by "GND FAN" CB111 circuit breaker.

<u>Heating circuit</u>

Hot air coming from the bleed air system is mixed with the cabin recirculating air in the Mixing Ejector (MIXEJ) in order to lower the blown air temperature. The resultant air flow enters the Hot Air Distributor (HAD) and is distributed in the cockpit / cabin zones regarding the demand.

It is dispatched :
- in the cockpit through ports located on pedestal sides, under each seat or through the demisting outlets.
- in the cabin through ports located on the lower section of the L.H. and R.H. side cabin upholstery.

The "AIR FLOW" distributor allows to select the windshield defog / cabin heating functions.

When the "AIR COND" switch is set to OFF position, the temperature is set by default by the GASC to 23°C.

Cooling circuit

There are two separate circuits : one for the cockpit and the other for the cabin.

In each circuit, air is sucked by means of a variable speed electrical fan, then it is blown through an evaporator and ducted to the different zones :

- cockpit circuit : by passing into the upper panel equipped with 2 swivelling and adjustable air outlets, through air outlets located on arm rests of pilot and R.H. front passenger stations and through ports located under instrument panel,
- cabin circuit : by passing into the overhead duct equipped with 4 swivelling and adjustable air outlets and through ports located on the floor between the cabinets and the intermediate passenger's seats.

The VCS can be switched on, only if the fans are set at least to minimum speed. The compressor clutch and the condenser fan are controlled by the GASC.

In automatic mode, the temperature of each zone is controlled independently by the system according to the settings of the two "CABIN TEMP/°C" selectors, which can vary from 17°C to 27°C. In this mode, the speed of each fan is automatically controlled.

In manual mode, the blown air temperature is controlled by the system according to the settings of each temperature selector. In this mode, the speed of each fan is set manually from Off to maximum speed position.

The "AIR COND" switch allows to switch on or off the Vapor Cycle System.

- If set to AUTO position :
  . on "ECS" panel, the "CABIN TEMP/°C" selector enables to select requested temperature of the cockpit zone,
  . above arm rest of L.H. passenger's seat, the "CABIN TEMP/°C" selector enables to select requested temperature of the cabin zone.

- If set to MANUAL position :
  . on "ECS" panel, the "CABIN TEMP/°C" selector enables to select requested temperature and the "FAN SPEED" selector enables to choose blown air speed in the cockpit zone,
  . above arm rest of L.H. passenger's seat, the "CABIN TEMP/°C" selector enables to select requested temperature and the "FAN SPEED" selector enables to choose blown air speed in the cabin zone.

The "CABIN CTRL" switch set to OVERRIDE position inhibits the operation of the controls located in the cabin zone ; only the cockpit controls settings are taken into account. If set to CABIN position, each zone controls its proper values.

"ECS - Service required" advisory message appears on the MFD, when the GASC detects a faulty operation of ECS system.

NOTE :
"ECS - Service required" advisory message appearance : Inform maintenance service.

Emergency air control ("RAM AIR" control knob), located under R.H. area instrument panel facing control wheel, enables outside air to enter the cabin through a valve. In NORMAL position, the valve is closed and the control is locked. To open emergency ventilation valve, press on locking knob and move control rearwards.

CABIN PRESSURIZATION CONTROL SYSTEM

The cabin altitude check is automatically ensured by the pressurization control system through a monitoring of the cabin pressure. The opening of the Outflow Valve (OFV) is controlled by the GASC through a torque motor fitted on the valve.

The cabin altitude is selected by the pilot through the Cabin Pressurization Control Panel (CPCP) (Figure 7.9.2).

The GDU 1500 MFD shows cabin altitude, cabin climb speed and cabin-atmosphere differential pressure.

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).

In flight, the GASC controls the opening of the OFV in order to reach the selected cabin altitude. The cabin altitude rates during climbing or descent phases are set by default to +/- 525 ft/mn.

Overpressure and negative relief safety are managed by both OFV and SFV. The safety functions are ensured by independent pneumatic modules fitted on both valves, which override the GASC control when necessary.

The "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).

The "DUMP" switch allows the pilot to open the OFV in order to de-pressurize the cabin. The OFV is fitted with a cabin altitude limitation device which overrides the "DUMP" function and forces the closure of the OFV if the cabin altitude reaches 14500 ft.

1 - Demisting outlets

2 - Front vents

3 - Cockpit ventilated temperature sensor (CKVTS)

4 - Cabin ventilated temperature sensor (CBVTS)

5 - Air ports

6 - Cabin control panel

7 - Global air system controller (GASC)

8 - Out-flow valve (OFV)

9 - Safety valve (SFV)

10 - Condenser fan

11 - Condenser

12 - High pressure switch

13 - Drier filter

14 - Cabin fan

15 - Cabin evaporator

16 - Cabin blown temperature sensor (CBBTS)

17 - Cabin thermostatic valve

18 - Low pressure switch

19 - Cabin pressurization control panel (CPCP)

20 - ECS panel

21 - Cockpit thermostatic valve

22 - Cockpit fan

23 - Cockpit evaporator

24 - Cockpit blown temperature sensor (CKBTS)

Figure 7.9.1 (1/3) - Global Air System items list and Abbreviations

25 - Demisting microswitch

26 - Hot air distributor (HAD)

27 - (Cabin) Inlet temperature Sensor (ITS)

28 - (Cabin) Bleed temperature switch (BTSW)

29 - Mixing ejector (MIXEJ)

30 - Check valve

31 - MFD unit

32 - Ground safety microswitch

33 - Differential pressure switch

34 - By-pass valve (BPV)

35 - Cabin altitude alarm switch

36 - Emergency air supply system (RAM AIR)

37 - Main heat exchanger (MHX)

38 - Ground fan (GF)

39 - Flow control shut off valve (FCSOV)

40 - Bleed differential pressure sensor

41 - Compressor

42 - Shut-off valve (SOV)

43 - Overheat thermal switch (OTSW)

44 - Non return valve (NRV)

45 - Intermediate port pressure sensor (IPPS)

46 - Cabin pressure sensor

Figure 7.9.1 (2/3) - Global Air System items list and Abbreviations

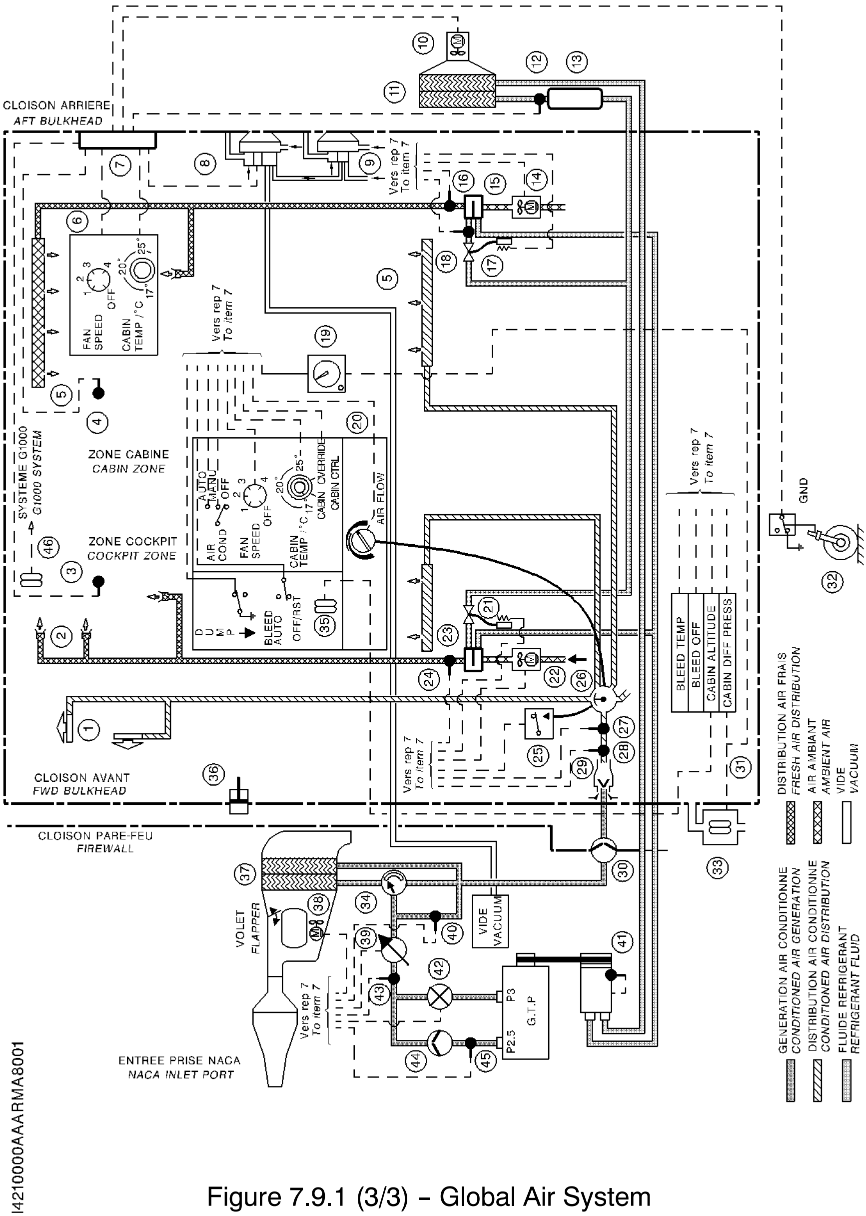

Figure 7.9.1 (3/3) - Global Air System

1) ”DUMP” switch
2) “AIR COND” switch
3) “FAN SPEED” selector (cockpit)
4) “CABIN CTRL” selector
5) ”CABIN TEMP/°C” selector (cockpit)
6) ”BLEED” switch
7) “AIR FLOW” distributor
8) “FAN SPEED” selector (cabin)
9) ”CABIN TEMP/°C” selector (cabin)
10) Cabin pressurization control panel

Figure 7.9.2 (1/2) - GAS controls

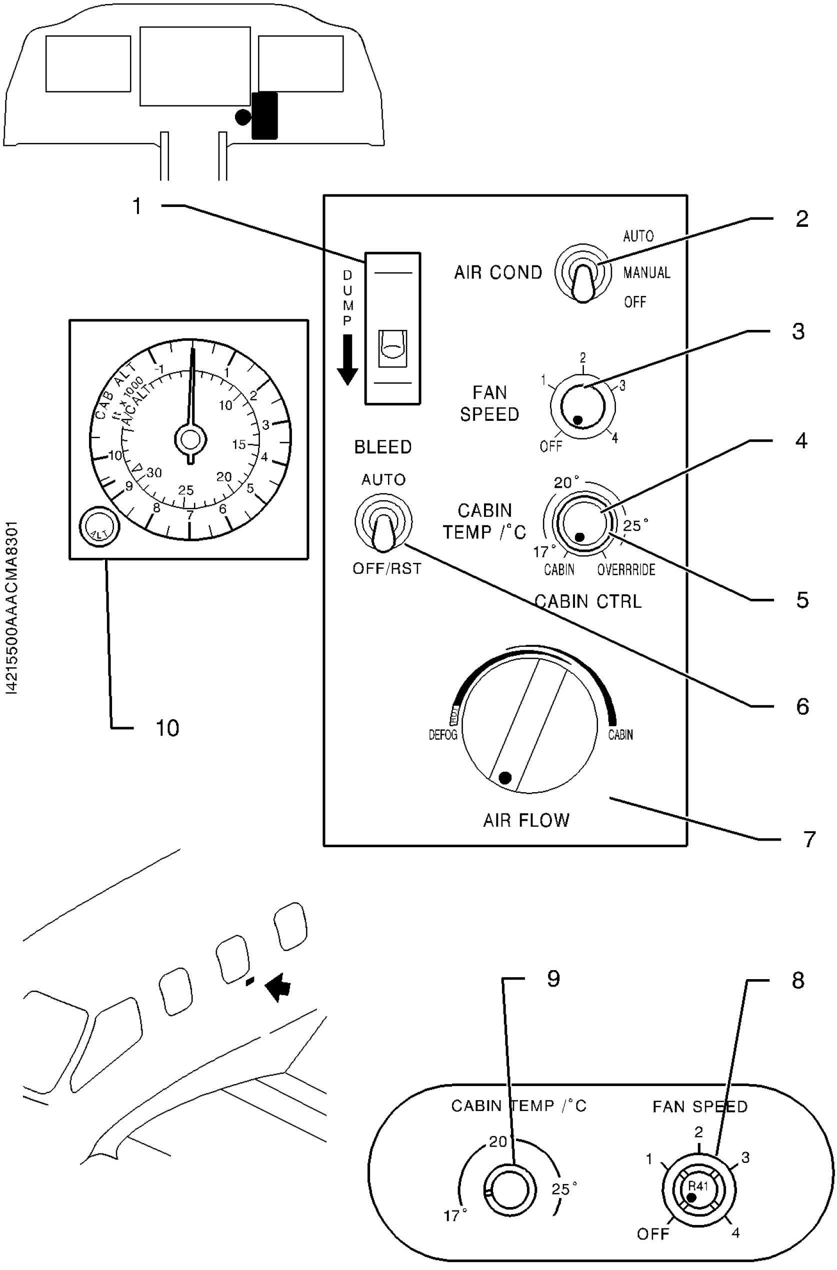

Figure 7.9.2 (2/2) - GAS controls

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7.10 - EMERGENCY OXYGEN SYSTEM (Figure 7.10.1)

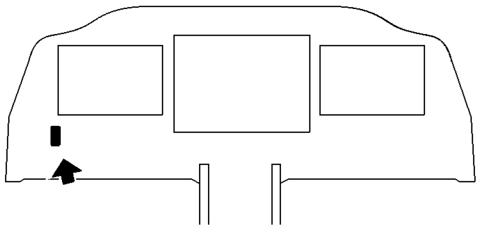
The gaseous oxygen system will be used by the crew and the passengers, when the cabin altitude is greater than 10000 ft following a loss of pressurization or in case of cabin air contamination.

The oxygen reserve is contained in an oxygen cylinder made of composite material and located outside of the pressurized cabin into the R.H. karman. Its capacity is 50.3 cu.ft (1425 litres) "STPD" (Standard Temperature Pressure Dry) and use limit pressures are :

- maximum pressure 1850 PSIG (127 bars) at 70°F (21°C).
  Evolution of this pressure according to the outside temperature is given in Section 8, Figure 8.7.4, as well as on a placard on the inside of the cylinder service door,
- minimum pressure 217 PSIG (15 bars).

The oxygen cylinder head is equipped with :

- a hand-controlled isolation valve to permit cylinder installation and removal,
- a microswitch causing the "OXYGEN" CAS message to light on. This message lights on, when the isolation valve is closed,
- a graduated pressure gage,
- a charging valve - refer to the replenishment procedure in Section 8,
- an overpressure system consisting of a safety disc. This disc is designed to rupture between 2500 and 2775 PSIG (172 and 191 bars) discharging the cylinder contents outboard,
- a pressure reducing valve adjusting utilization pressure to a value comprised between 64 and 85 PSIG (4.4 and 5.9 bars),
- a low pressure safety valve calibrated to 116 PSIG (8 bars).



1) Microphone switch

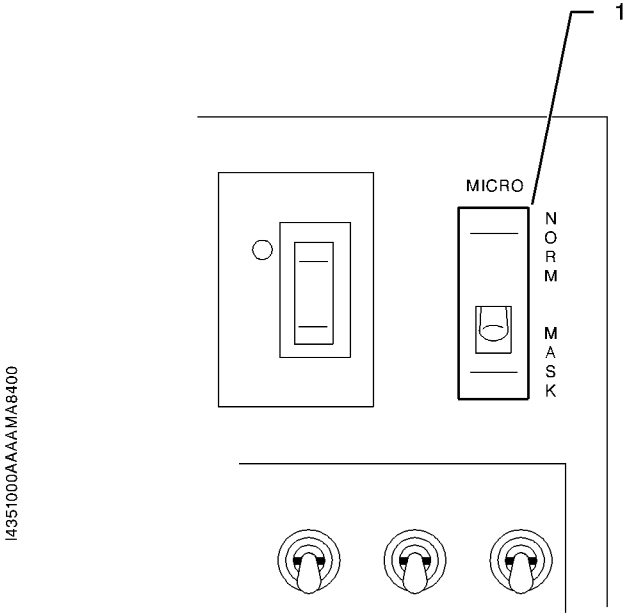


Figure 7.10.1 – EMERGENCY OXYGEN SYSTEM

A control panel located in the cockpit overhead panel at the disposal of the pilot includes :

- a two-position valve ON/OFF ("OXYGEN" switch) to permit the supply of the front seats occupiers masks,
- a two-position valve ON/OFF ("PASSENGERS OXYGEN" switch) with guard to permit the supply of the passengers four masks, when the first valve is open.

Oxygen pressure is displayed on the GDU 1500 MFD.

An altimetric valve provides an automatic passengers masks actuation function at a cabin altitude between 13000 and 14000 ft when "OXYGEN" switch is set to ON.

Two pressure-demand type masks allowing quick donning with only one hand, covering the nose and the mouth, as well as two pairs of smoke goggles are at disposal of the pilot and of the R.H. front seat occupier. Masks are installed in cups on the cabin walls aft of the front seats. Permanently connected to the oxygen system, they are equipped with a micro controlled by the 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 13000 and 14000 ft with the "OXYGEN" switch set to ON. The oxygen flow is obtained by pulling on the mask bounded by a lanyard cord to a pin. A proper flow is signaled by the filling of the green bag located on each passenger mask.

WARNING

DO NOT SMOKE DURING OXYGEN SYSTEM USE.

OIL, GREASE, SOAP, MAKE UP, LIPSTICK AND ANY OTHER GREASY SUBSTANCES CONSTITUTE A SERIOUS FIRE OR BURNING HAZARD, WHEN ON CONTACT WITH OXYGEN

FLIGHT ABOVE 15000 FT WITH EMERGENCY DESCENT

Number of occupants		OUTSIDE TEMPERATURE						
Cockpit	Cabin	110°F/ 43°C	90°F/ 32°C	**70°F/ 21°C**	50°F/ 10°C	30°F/ -1°C	10°F/ -12°C	-10°F/ -23°C
1	0	631	614	**597**	580	563	546	529
1	1	759	736	**713**	691	668	646	623
1	2	885	856	**828**	799	771	743	715
1	3	1010	976	**941**	907	873	839	806
1	4	1137	1096	**1056**	1015	975	935	897
2	0	1037	1001	**965**	930	894	859	825
2	1	1164	1122	**1080**	1038	997	956	916
2	2	1289	1241	**1192**	1144	1097	1050	1004
2	3	1416	1361	**1306**	1252	1198	1145	1093
2	4	1541	1480	**1418**	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	**585**	569	552	536	520
1	1	842	816	**789**	763	736	710	685
1	2	1067	1029	**992**	955	918	882	846
1	3	1513	1240	**1192**	1144	1097	1050	1004
1	4	1513	1452	**1392**	1333	1275	1217	1161
2	0	992	958	**925**	891	858	825	793
2	1	1215	1170	**1125**	1081	1037	994	952
2	2	1439	1382	**1326**	1270	1215	1161	1108
2	3	1662	1593	**1525**	1457	1391	1326	1262
2	4	1888	1807	**1725**	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	**585**	569	552	536	520
1	1	961	929	**896**	864	833	801	770
1	2	961	929	**896**	864	833	801	770
1	3	961	929	**896**	864	833	801	770
1	4	961	929	**896**	864	833	801	770
2	0	992	958	**925**	891	858	825	793
2	1	1333	1282	**1231**	1181	1131	1083	1035
2	2	1333	1282	**1231**	1181	1131	1083	1035
2	3	1333	1282	**1231**	1181	1131	1083	1035
2	4	1333	1282	**1231**	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 %.

7.11 - AIR DATA SYSTEM AND INSTRUMENTS (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 ΔP 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 L
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 R
16) Rear pressure bulkhead
17) Static port
18) Emergency static port
19) Static port

Figure 7.11.1 (1/2) - AIR DATA SYSTEM

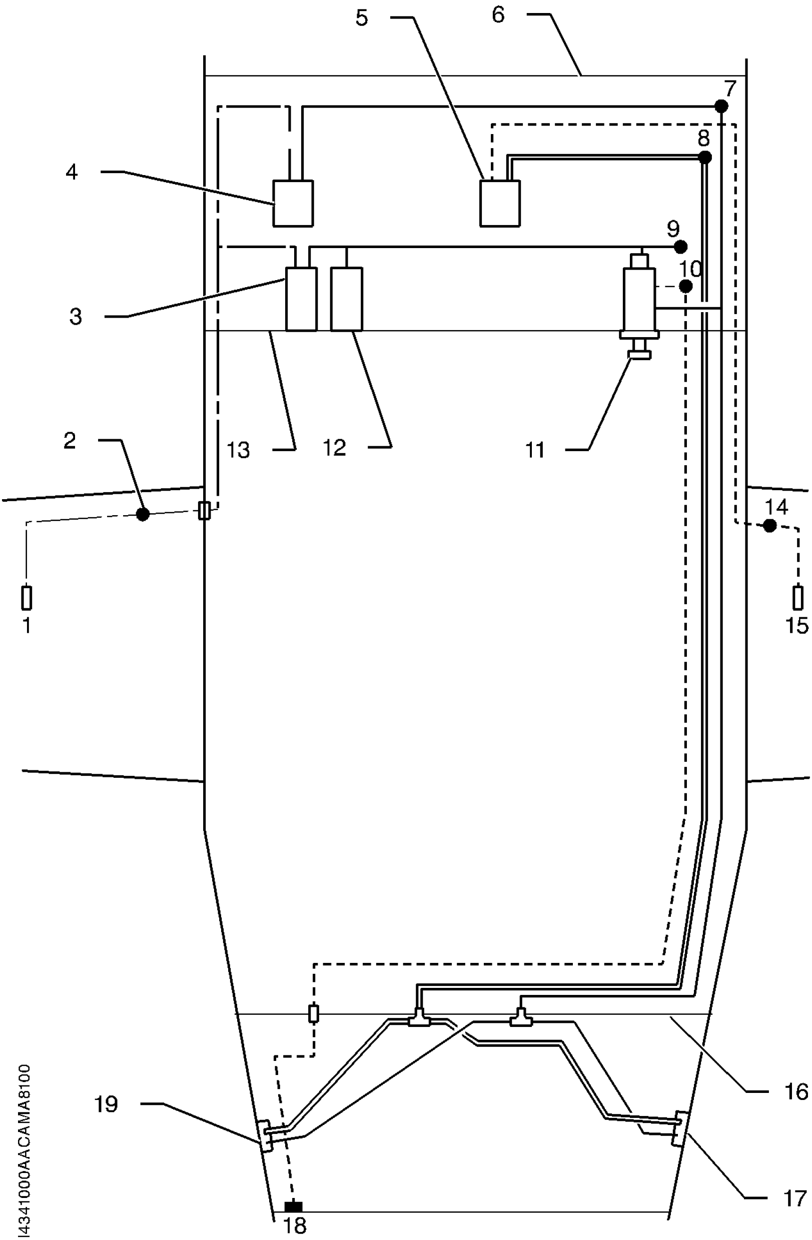


Figure 7.11.1 (2/2) - AIR DATA SYSTEM

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

One heated pitot probe is installed under the L.H. wing. The second one is installed under the R.H. wing. The first one supplies the airspeed indicator and one ADC.

The second one supplies the other ADC.

Both lines incorporate a drain plug located in the root of L.H. and R.H. wings.

Pitot heating

Pitot heating is controlled by ”PITOT L HTR” and ”PITOT R & STALL HTR” switches, installed on ”DE-ICE SYSTEM” panel. Refer to Chapter 7.13 for further details.

NOTE :
Do not use heating during prolonged periods on ground to avoid pitot overheat.

7.12 - VACUUM SYSTEM AND INSTRUMENTS (Figure 7.12.1)

The airplane is fitted with a vacuum system providing the suction necessary to operate the stand-by attitude indicator, the cabin pressurization and the leading edge deicing.

Vacuum system includes :

- A pressure regulator
- An ejector
- A regulating and relief valve
- A signalization microswitch
- A suction gage indicator

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 and instrument systems. In case of pressure drop, a microswitch, 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

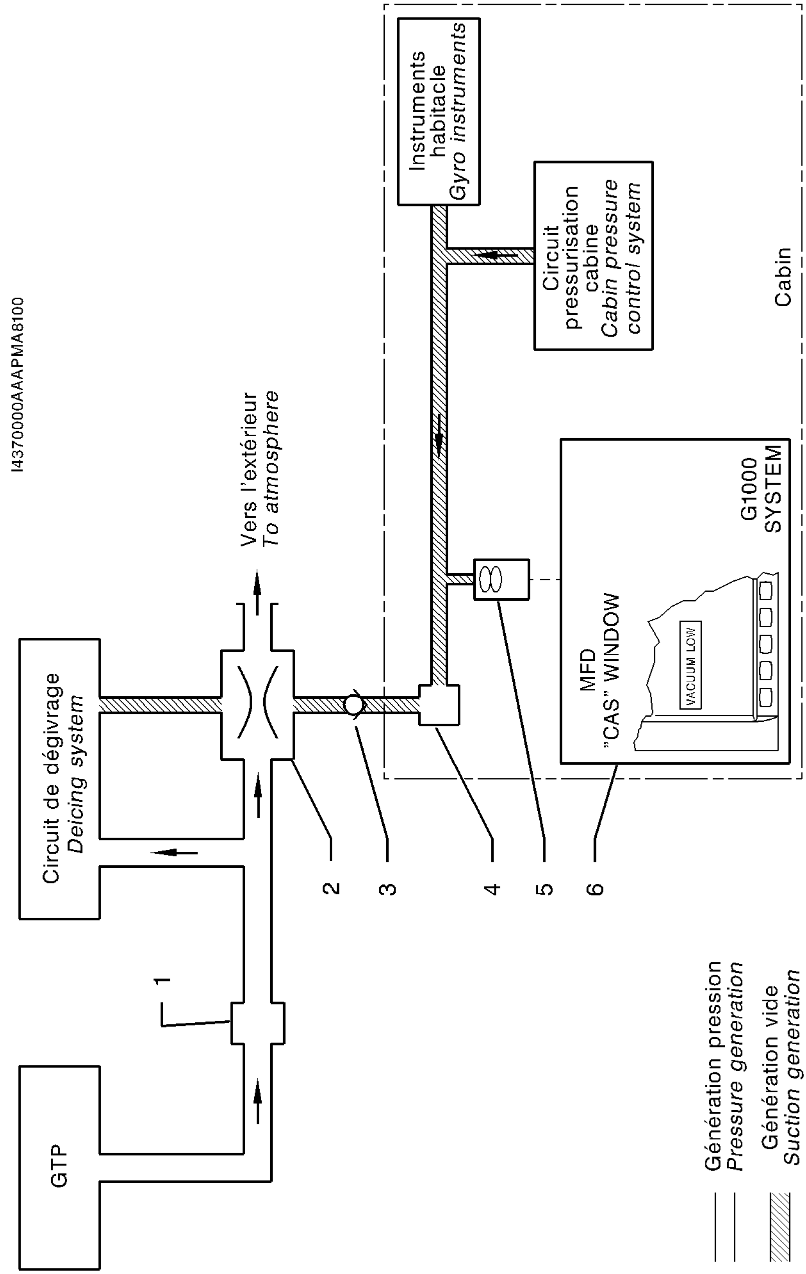


Figure 7.12.1 (2/2) - VACUUM SYSTEM

SUCTION GAGE

The suction gage is calibrated in inches of mercury and indicates the suction available for operation of the stand-by 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, the stand-by attitude indicator should be considered unreliable.

The suction gage is located on L.H. pilot's instrument panel strip.

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"
- Electrical heating system for both pitots and for the stall warning sensor : "PITOT L HTR" and "PITOT R & STALL HTR"
- Turbine air inlet deice systems : "INERT SEP"

Deicing check and control panel is located on the lower L.H. side of the instrument panel.

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 windshields are deiced electrically by integrated heating resistors. The system includes a controller and two heat probes embedded in each windshield. They are operated by the ”WINDSHIELD” switch.

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 of probe # 1, the controller receives the temperature data from probe # 2. The electrical supply to the heating resistors is cut when the windshield temperature reaches 56°C (133°F). In that case, the windshield is no longer heated, the pilot can reset the system by setting the switch to OFF, then to ON.

Two green lights located above the ”WINDSHIELD” switch go on when the corresponding heating resistors are being supplied.

HEATING OF PITOTS AND STALL WARNING SENSOR ("PITOT L HTR" AND "PITOT R & STALL HTR")

The two pitots, which supply ADCs, the airspeed indicator and the stall warning sensor are electrically heated. This deice equipment must be used even during flight into non-icing conditions.

The system condition messages ("PITOT NO HT L" or ...R", "PITOT HT ON L" or ...R", "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.

NOTE :
Correct operation of the audible stall warning may be altered by severe or prolonged icing.

TURBINE AIR INLET PROTECTION

Operation and description are set forth in Chapter 7.6 Paragraph "ENGINE AIR INLET".

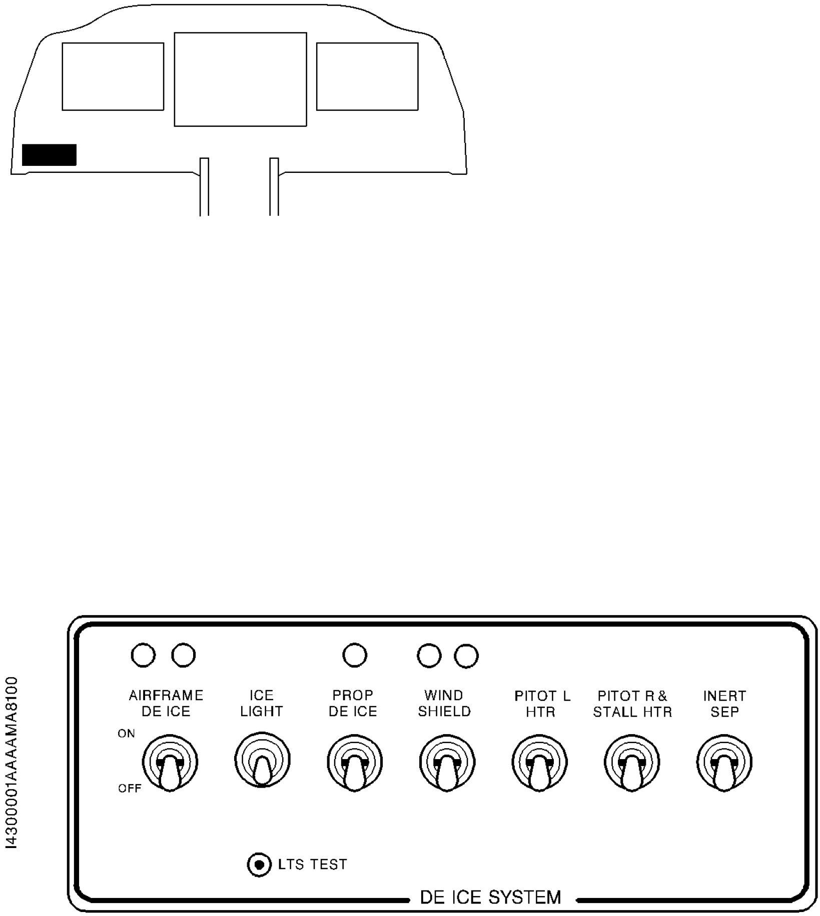


Figure 7.13.1 - DEICING CONTROL AND CHECK PANEL

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.

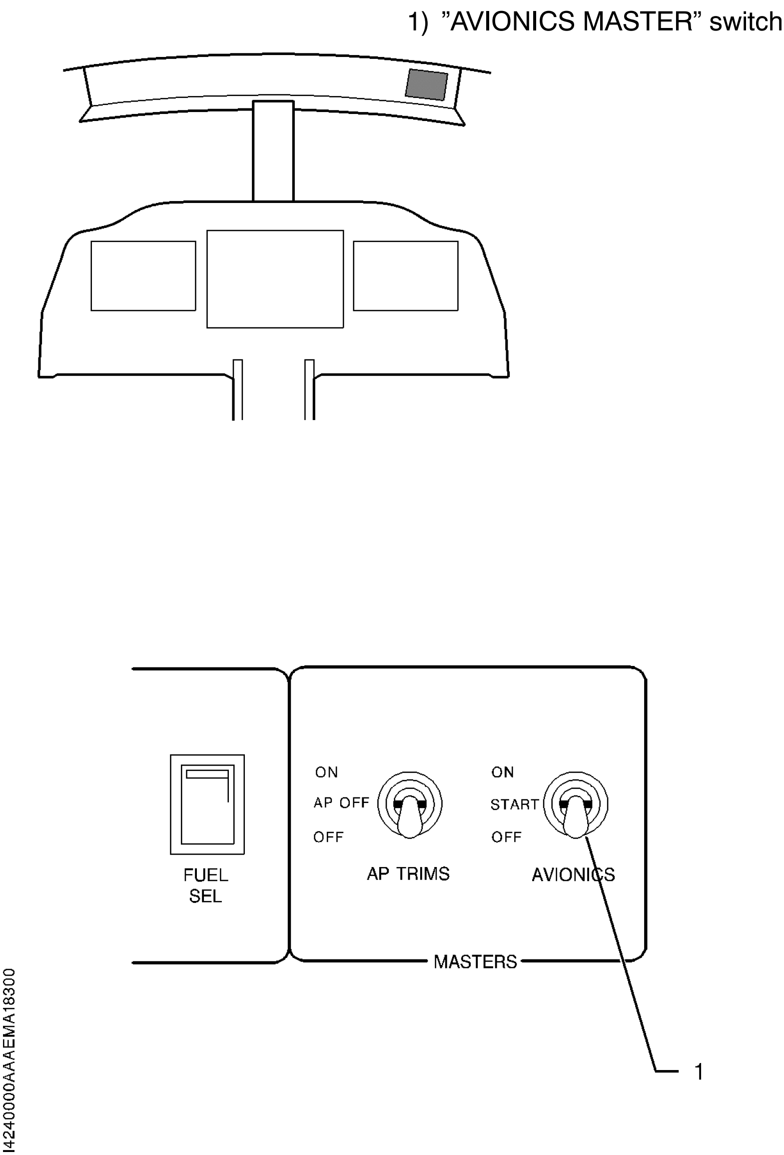


Figure 7.14.1 - "AVIONICS MASTER"

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

The fire extinguisher is located behind FWD R.H. seat. 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.

AUTOPILOT

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 equipement 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.

EMERGENCY LOCATOR TRANSMITTER

The airplane is equipped with an emergency locator transmitter which enables to locate it in case of distress. It is located in fuselage rear section with a service door on fuselage R.H. side.

The emergency locator transmitter assembly is constituted of a transmitter supplied by a battery, of an antenna attached on upper fuselage and of a remote control located on R.H. instrument panel.

NOTE :
For test sequences, refer to manufacturer manual.

ELT ARTEX ME 406

Operation of the emergency locator transmitter is obtained as follows :

- from the instrument panel by setting ”ON/ARM” remote control switch to ON (locator transmitter ”ON/ARM” switch set to ARM),
- from the locator transmitter by setting its ”ON/ARM” control switch to ON,
- automatically in case of shock, when remote control switch is set to ARM 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 on R.H. side of locator transmitter switch and a buzzer located in the fuselage rear section indicate the emergency locator transmitter is transmitting.

Reset after an inadvertent activation

1) Set remote control switch or ELT switch to ON.	a) The ELT keeps on transmitting emergency signal. b) On remote control box, red indicator light flashes. c) On ELT, red indicator light flashes. d) Near ELT, the buzzer sounds.
2) Wait approximately for 1 second.	
3) Set remote control switch to ARM or ELT switch to ARM.	a) The ELT does not transmit emergency signal any longer. b) On remote control box, red indicator light illuminates for about 1 second, then goes off. or c) On ELT, red indicator light goes off. d) Near ELT, the buzzer does no more sound.

ELT ARTEX C406-1

Operation of the emergency locator transmitter is obtained as follows :

- from the instrument panel by setting "ON/ARM" remote control switch to "ON" (locator transmitter "ON/OFF" switch set to "OFF"),
- from the locator transmitter by setting its "ON/OFF" control switch to "ON",
- automatically in case of shock, when remote control switch is set to "ARM" and locator transmitter switch is set to "OFF".

A red indicator light located on "ELT" remote control switch in the cockpit indicates to the pilot the emergency locator transmitter is transmitting.

A red indicator light located above locator transmitter switch and a buzzer located in the fuselage rear section indicate the emergency locator transmitter is transmitting.

Reset after an inadvertent activation

1) Set remote control switch or ELT switch to "ON".	a) The ELT keeps on transmitting emergency signal. b) On remote control box, red indicator light flashes. c) On ELT, red indicator light flashes. d) Near ELT, the buzzer sounds.
2) Wait approximately for 1 second.	
3) Set remote control switch to "ARM" or ELT switch to "OFF".	a) The ELT does not transmit emergency signal any longer. b) On remote control box, red indicator light illuminates for about 1 second, then goes off. or (see page here after)

3) (Cont'd)

c) On ELT, red indicator light goes off.

d) Near ELT, the buzzer does no more sound.

SECTION 8

HANDLING, SERVICING AND MAINTENANCE

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TABLE OF CONTENTS
(Continued)

8.1 - GENERAL

This section contains the procedures recommended by the manufacturer for the proper ground handling and routine care and servicing of TBM 850 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.

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.

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 850", P/N 190-00708-00, or any later version as applicable, and supplemental data covering optional equipment installed in the airplane (refer to Section 9 "Supplements" and 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

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.

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.

8.6 - GROUND HANDLING

CAUTION

ONLY MOVE OR TOW THE AIRPLANE WITH SOMEONE IN THE COCKPIT

TOWING

CAUTION

USING THE PROPELLER FOR GROUND HANDLING COULD RESULT IN SERIOUS DAMAGE, ESPECIALLY IF PRESSURE OR PULL IS EXERTED ON BLADE TIPS

The airplane should be moved on the ground with a towing bar and a suitable vehicle in order not to damage the nose gear steering mechanism. Nose gear fork is equipped with an integrated towing fitting.

CAUTION

DO NOT TOW THE AIRPLANE WHEN CONTROLS ARE SECURED

WHEN TOWING WITH A VEHICLE, DO NOT EXCEED THE NOSE GEAR TURNING ANGLE, AS THIS MAY RESULT IN DAMAGE TO THE GEAR AND STEERING MECHANISM
(see Figure 8.6.1)

PARKING

When parking the airplane, head it into the wind. Do not set the parking brake when brakes are overheated or during cold weather when accumulated moisture may freeze the brakes. Care should be taken when using the parking brake for an extended period of time during which an air temperature rise or drop could cause difficulty in releasing the parking brake or damage the brake system.

Make sure that the fuel selector is set to "OFF".

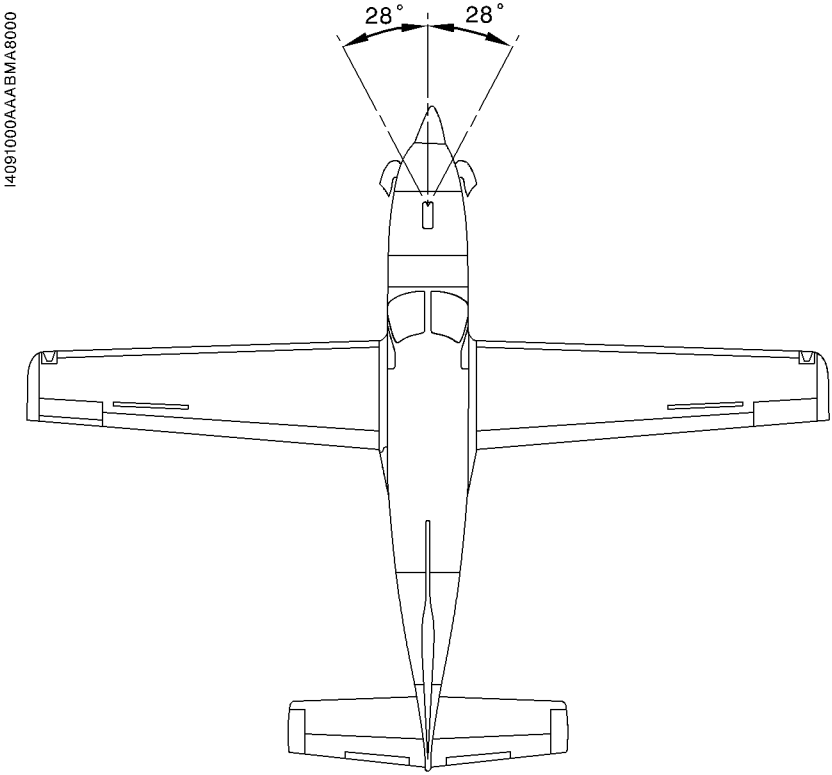

Figure 8.6.1 - TURNING ANGLE LIMITS

NOTE :
Do not use solar screens or shields installed on the airplane inside, or leave sun visors down against windshield when airplane on ground. The reflected heat from these items causes a temperature increase which accelerates the crack growth or crazing and may cause the formation of bubbles in the inner layer of multilayer windshields.

Beyond 24 hours parking, use windshield protection screen provided with lateral and underside straps.

For long term parking, blanking covers (static ports, pitot, engine air inlet), 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 and in rear tie-down fitting, located under horizontal stabilizer ; 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.

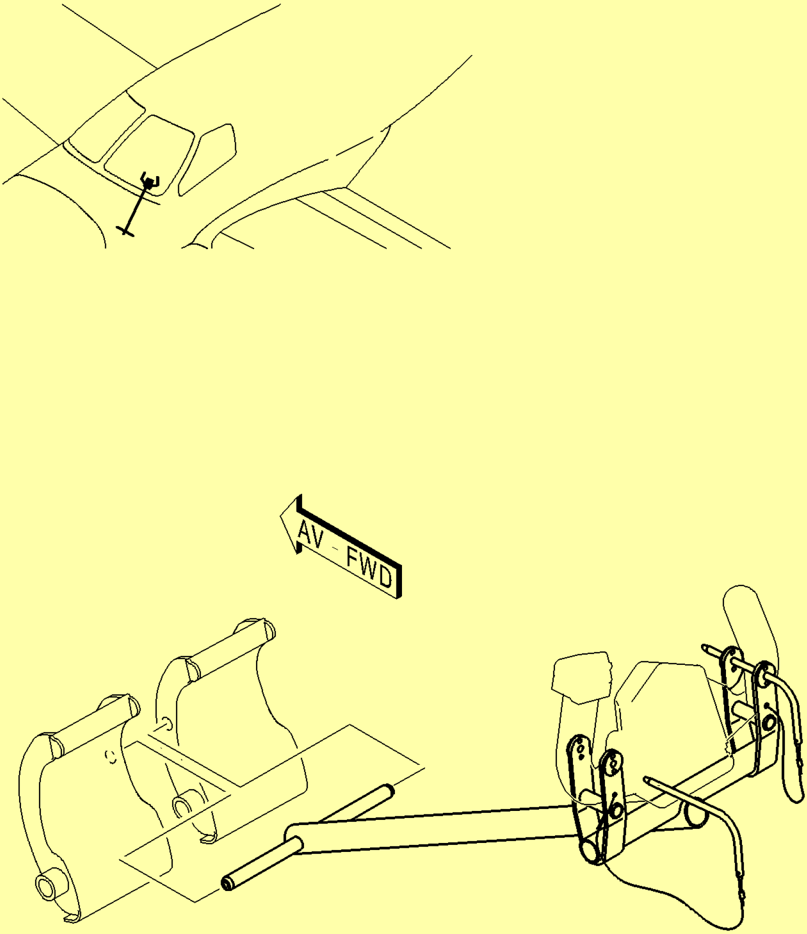

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Figure 8.6.2 - CONTROL LOCK DEVICE
Pre-MOD70-0279-00

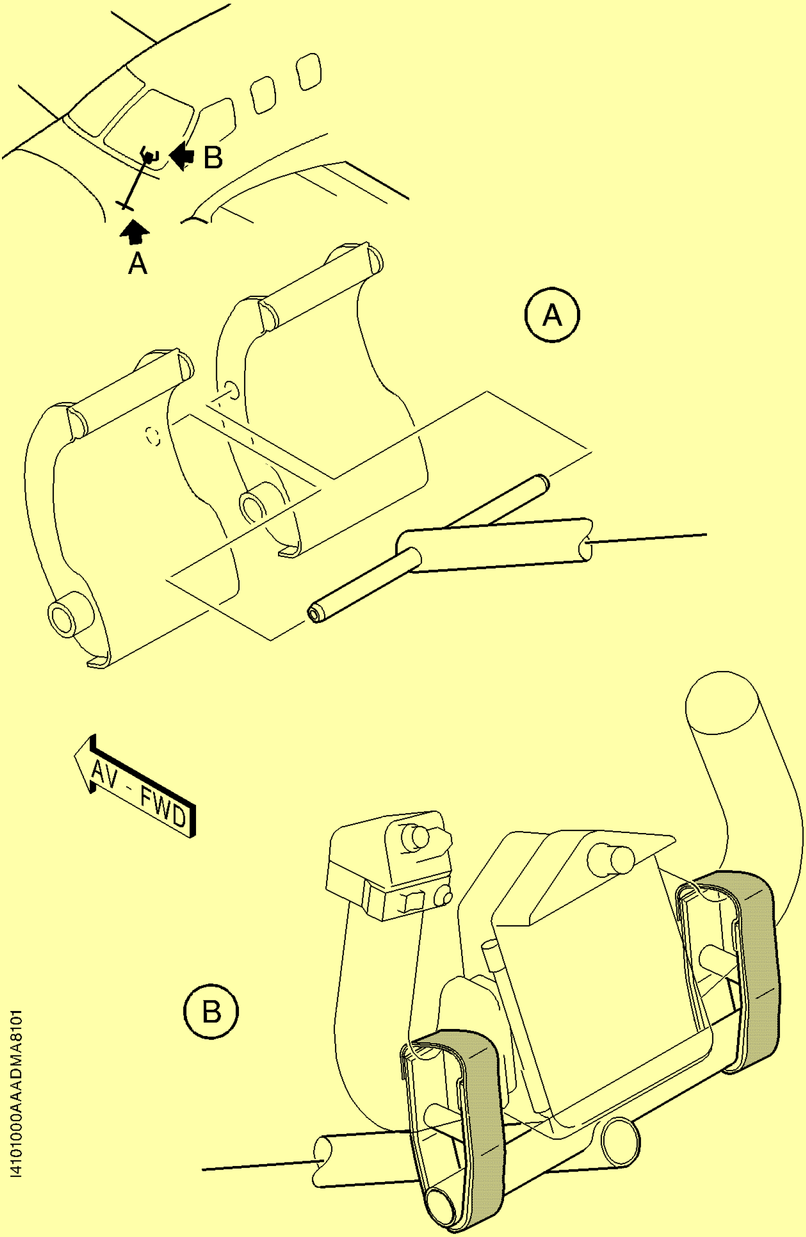


Figure 8.6.2A – CONTROL LOCK DEVICE
Post-MOD70-0279-00

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.
  Close oxygen cylinder isolation valve.

Storage from 8 to 28 days :

- Engine : according to Maintenance Manual P & W C.

Airplane fueling :

- Keep fuel tanks full to minimize condensation in the tanks. Keep the battery fully charged to prevent the electrolyte from freezing in cold weather.
  Close oxygen cylinder isolation valve.

Battery (remaining in the airplane or removed) :

- Disconnect battery and check its charge level at regular intervals.

LONG TERM STORAGE WITHOUT FLYING

Refer to Maintenance Manual for the procedures to follow.

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 attention at 100, 300 and 600 hour intervals (for airframe), 100 and 300 hour intervals (for GTP) plus those items which require servicing, inspection or testing at special intervals, first 100 flight hours and yearly inspection.

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 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 : 150.5 us gal (570 l).

NOTE :
To minimize condensation, it is recommended that airplane be refueled after each flight, respecting weight and balance limits.

CAUTION

NEVER FLY THE AIRPLANE WITH CONTAMINATED (WATER, SAND, RUST, DUST...) OR UNAPPROVED FUEL

Before each flight and after each fueling, using 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 there is contamination 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 :

- liquid "И" - GOST 8313-88

Above-mentioned liquid is added in the quantity equal to 0.3 percent per volume.

CAUTION

REFER TO SERVICE BULLETIN P & WC No. 14004 AT ITS LATEST REVISION FOR APPROPRIATE QUANTITIES

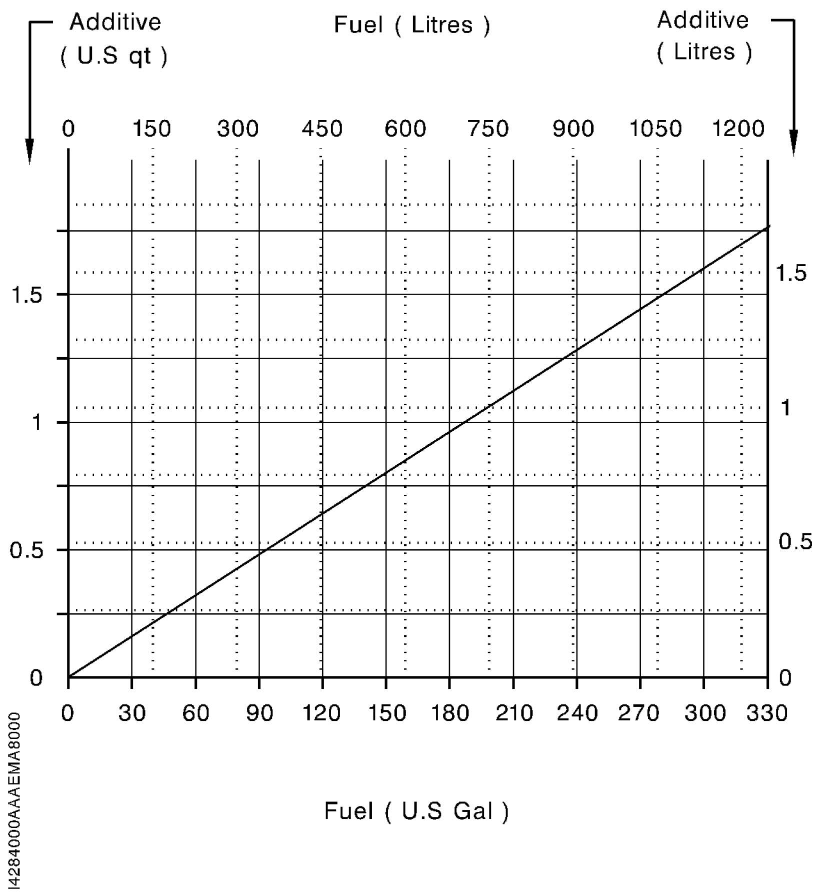


Figure 8.7.3 - ADDITIVE MIXING RATIO (EGME or DIEGME)

LANDING GEAR

Nose gear tire :
5.00-5 10 PR - Inflation pressure : 98 psi (6.7 bars) *

Main gear tires :
18 5.5 10 PR - Inflating pressure : 135 psi (9.32 bars) *

Nose gear shock absorber :
Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 87 psi (6 bars).

Main gear shock absorbers :
Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 160 psi (11 bars).

Hydraulic system :
Check every 100 hours and service with AIR 3520 B (MIL.H5606E) hydraulic fluid.

Brakes :
Service as required with AIR 3520 B (MIL.H5606E) hydraulic fluid.

NOTE :
A higher inflation pressure has to be applied to tires and shock absorbers when in very cold conditions (refer to Chapter 8.9).

(*) Tire inflation pressures are given for an <u>airplane on ground</u> at 21 °C. An ambient temperature change of 3 °C produces approximately 1 % pressure change.

OXYGEN

The replenishment device of the oxygen cylinder is installed directly on the cylinder head. It consists of a charging valve and of a pressure gage graduated from 0 to 2000 PSIG. A chart - see Figure 8.7.4, located on the inside of the cylinder service door, gives the cylinder charge maximum pressure according to the environment temperature.

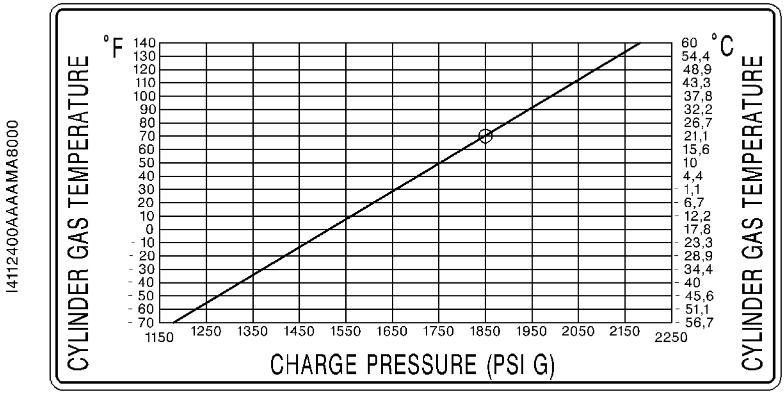


Figure 8.7.4 - Charge pressure chart

Replenishment procedure

WARNING

MAKE SURE THAT THE AIRPLANE IS FITTED WITH A GROUDING CABLE AND IS PROPERLY GROUNDED.
THE OXYGEN CART MUST BE ELECTRICALLY BONDED TO THE AIRPLANE.

DO NOT OPERATE THE AIRPLANE ELECTRICAL SWITCHES OR CONNECT/DISCONNECT GROUND POWER DURING OXYGEN SYSTEM REPLENISHMENT.

DO NOT OPERATE THE OXYGEN SYSTEM DURING REFUELING/DEFUELING OR PERFORM ANY OTHER SERVICING PROCEDURE THAT COULD CAUSE IGNITION.

INTRODUCTION OF PETROLEUM BASED SUBSTANCES SUCH AS GREASE OR OIL TO OXYGEN CREATES A SERIOUS FIRE HAZARD. USE NO OIL OR GREASE WITH THE OXYGEN REPLENISHMENT EQUIPMENT.

ALWAYS OPEN SHUT-OFF VALVE SLOWLY TO AVOID GENERATING HEAT AND REPLENISH THE SYSTEM SLOWLY AT A RATE NOT EXCEEDING 200 PSIG (13.7 BARS) PER MINUTE

CAUTION

REPLENISHMENT OF THE OXYGEN SYSTEM SHOULD ONLY BE CARRIED OUT BY QUALIFIED PERSONNEL

NOTE :
The cylinder full charge is assured for a pressure of 1850 PSIG (127 bars) at a temperature of 70°F (21°C). If the cylinder temperature differs from 70°F (21°C), refer to Figure 8.7.4 which lists the required pressures according to the cylinder temperature.

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.

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.

Passengers' 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

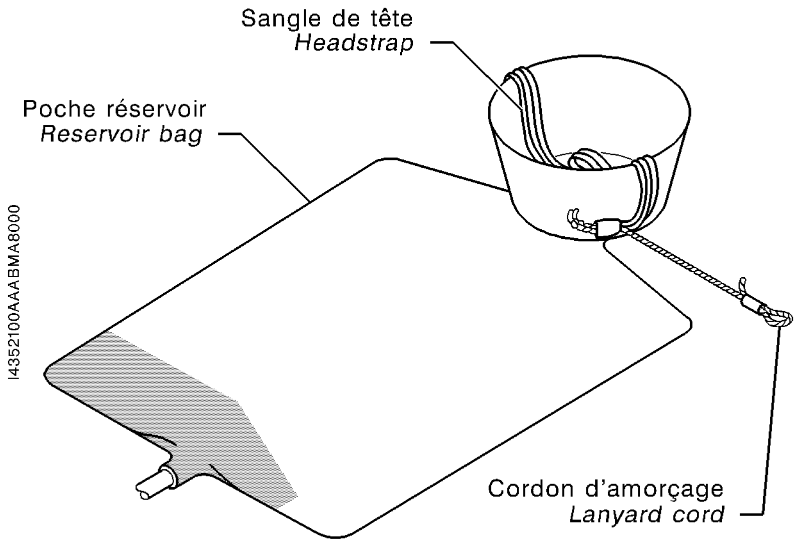
WARNING

MASKS SHALL BE REPACKED IN AN AREA FREE OF OIL, GREASE, FLAMMABLE SOLVENTS OR OTHER CONTAMINANTS

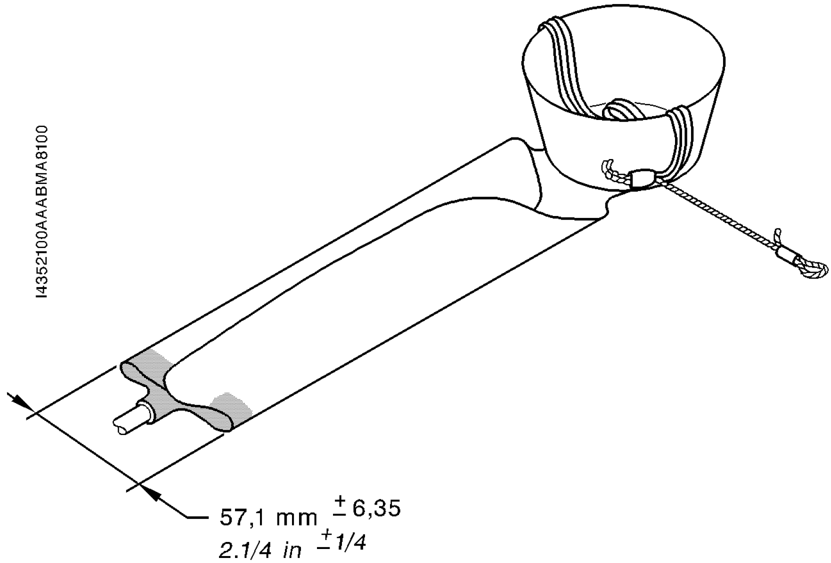
Inspect and disinfect mask and deployment container with an aqueous solution of Zephiran Chloride ("Scott Aviation" P/N 00-2572) or with disinfection cleaners ("EROS" P/N SAN50). After disinfecting and thoroughly drying the mask, lightly dust the outside of the facepiece with Neo-Novacite powder ("Scott 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.

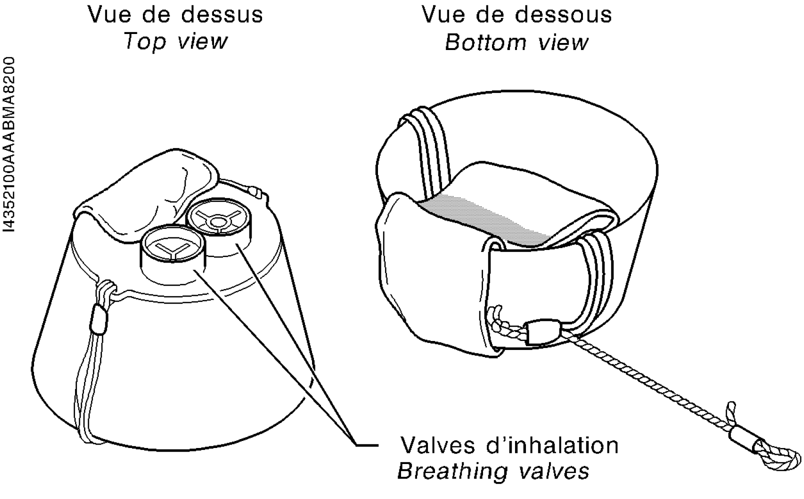
Lay reservoir bag on flat surface and smooth out wrinkles.



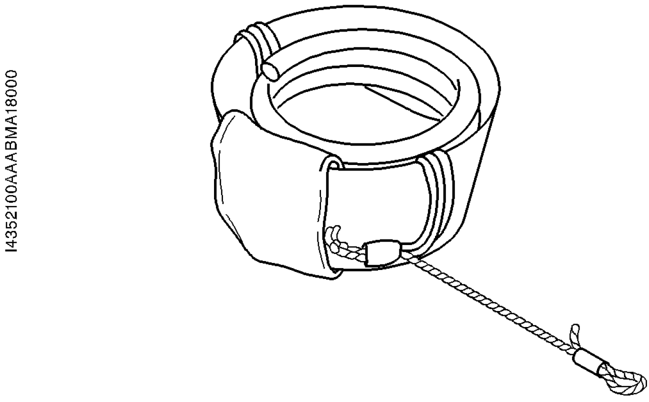
Gently fold reservoir bag lengthwise into thirds (outside edges folded inward over center of bag). Do not crease bag.



Fold reservoir bag away from breathing valves and into facepiece. Make sure bag does not cover breathing valves.



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.

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.

ADHESIF 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)

NOTE :
Check pressure values in a hangar heated at about 15°C with control equipment at room temperature.

If a landing is foreseen by cold or very cold weather or in case of airplane prolonged operation in such conditions, it is recommended to prepare the airplane as follows :

1 - Smear with silicone grease the door and engine cowlings seals, as well as the leading edge deicers.

2 - Apply engine oil on the engine cowling latches.

3 - Inflate main landing gear shock absorbers to 247 psi (17 bars) at a room temperature of 15°C.

4 - Position a 0.59 in (15 mm) shim at the bottom of the piston tube and against forward landing gear half-fork to reduce shock absorber travel. Refill with hydraulic liquid. Remove the shim and inflate shock absorber to 138 psi (9.5 bars) at a room temperature of 15°C.

5 - Inflate main landing gear tires to 130 psi (8.96 bars) and nose tire to 102 psi (7 bars) at a room temperature of 15°C.

NOTE :
See Table 1 hereafter to check pressure values and to inflate tires and shock absorbers.

Check pressure values and inflate, if necessary, according to following table 1 during operation in cold weather only :

	OAT (°C)	**- 40°**	**- 30°**	**- 20°**	**- 10°**	**+ 15°**
PRESSURES psi (bars)	Main landing gear shock absorber	189 (13)	196 (13.5)	203 (14)	218 (15)	247 (17)
	Nose gear shock absorber	102 (7)	109 (7.5)	116 (8)	123 (8.5)	138 (9.5)
	Main landing gear tire	144 (9.96)	144 (9.96)	130 (8.96)	130 (8.96)	130 (8.96)
	Nose gear tire	94 (6.5)	94 (6.5)	102 (7)	102 (7)	102 (7)

Table 1

LIST OF SUPPLEMENTS AND VALIDITIES

Supp. No.		Edition Date
A -	General All S / N 269 and from S / N 434	22.06.07
6 -	"BFG" WX-500 or WX-950 or WX-1000 or 1000+ or 1000E stormscope All From S / N 1	30.11.90
18 -	"L'HOTELLIER" Engine fire detection system All From S / N 1	31.01.96
44 -	Chip detection system All From S / N 1	10.02.05
47 -	"AIRBORNE" GWX 68 color weather radar All S / N 269 and from S / N 434	22.06.07
48 -	"HONEYWELL" KTA 870 TAS system All S / N 269 and from S / N 434	22.06.07
49 -	"GARMIN" G1000 TAWS SYSTEM All S / N 269 and from S / N 434	22.06.07
50 -	"GARMIN" G1000 SYNTHETIC VISION SYSTEM All S / N 269 and from S / N 434	26.06.08

The Supplement Revision 2 is approved under authority of DOA EASA.21J.013.
Approval Number : EASA.21J.013 09005 DAG/N DOA

Date : May 20, 2009

SUPPLEMENT

”BFG” WX–500 OR WX–950 OR WX–1000 OR 1000+ OR 1000E STORMSCOPE

TABLE OF CONTENTS

SECTION 1

GENERAL

This supplement supplies information to the pilot about limitations, normal and emergency procedures when the optional "BFG" WX-500 or WX-950 or WX-1000 or 1000+ or 1000E 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.

WX-1000 or 1000+ or 1000E

The "BFG" stormscope checklist functions are for reference only.

All

CAUTION

THE STORMSCOPE MUST NOT BE USED FOR THUNDERSTORM PENETRATION

- The Stormscope "BFG" Pilot's Handbook, Series II, No. 75-0299-7690-1 (WX-1000 or 1000+ or 1000E),
  or
- The WX-950 Pilot's guide, Series II, No. 009-10951-001,
  or
- The WX-500 Pilot's guide, Series II, No. 009-11501-001 and the "GARMIN" GNS 530 Pilot's Guide, No. 190-00181-00,
  or
- The WX-500 Pilot's guide, Series II, No. 009-11501-001 and the "HONEYWELL" KMD 550/850 Pilot's Guide P/N 006-18222-0000,
  or
- The WX-500 Pilot's guide, Series II, No. 009-11501-001 and the "GARMIN" GMX 200 Pilot's Guide, No. 190-00607-02,
  or
  Post-MOD70-0176-00
- The WX-500 Pilot's guide, Series II, No. 009-11501-001 and the "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 850, No. 190-00708-00,

at their last 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 Pilot's Handbook, Series II, No. 75-0299-7690-1 at its last revision for "BFG" stormscope model WX-1000 or 1000+ or 1000E
  or
- the WX-950 Pilot's Guide, Series II, No. 009-10951-001 at its last revision for "BFG" stormscope model WX-950
  or
- 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)
	34 - NAVIGATION			
A	Stormscope WX-1000+ (OPT 70 34009A)	BFG	16.535 (7.500)	228.35 (5.800)
A	Stormscope WX-1000 (OPT 70 34009B)	BFG	15.432 (7.000)	230.71 (5.860)
A	Stormscope WX-1000+ EFIS coupled (OPT 70 34009C)	BFG	15.432 (7.000)	230.71 (5.860)
A	Stormscope WX-1000E EFIS coupled - Remote installed control (OPT 70 34009D)	BFG	9.502 (4.310)	269.09 (6.835)
A	Stormscope WX-1000E EFIS coupled (OPT 70 34009E)	BFG	15.939 (7.230)	230.94 (5.866)
A	Stormscope WX-1000E shared with the SKYWATCH (OPT 70 34009F)	BFG	15.939 (7.230)	230.94 (5.866)
A	Stormscope WX-1000+ shared with the SKYWATCH (OPT 70 34009G)	BFG	16.535 (7.500)	228.35 (5.800)
A	Stormscope WX-950 (OPT 70 34041)	BFG	4.696 (2.130)	191.85 (4.873)

A or O	OPTIONAL EQUIPMENT	EQUIPMENT SUPPLIER	WEIGHT per unit lb (kg)	ARM in. (m)
A	Stormscope WX-500 - shared with the GNS 530 GPS or with the KMD 850 or GMX 200 MFD (OPT 70 34056A)	BFG	4.94 (2.240)	232.28 (5.900)
A	Stormscope WX-500 - shared with the GARMIN G1000 system (OPT 70 34056B)	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 wiews : 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.

Post-MOD70-125-23 and Pre-MOD70-0176-00

Stormscope setting to ON or OFF is performed by using the “RADIO MASTER” switch.

SUPPLEMENT

ENGINE FIRE DETECTION SYSTEM

TABLE OF CONTENTS

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 . . . . **IDLE**

2 – Condition lever . . . . **CUT OFF**

3 – ”BLEED VALVE” or “BLEED” switch . . . . **OFF**

4 – ”FREON” or “AIR COND” switch (if installed) . . . . **OFF**

5 – Brakes . . . . **AS REQUIRED**

6 – Tank selector . . . . **OFF**

7 – Ask for ground assistance, if necessary

8 – CRASH lever . . . . **PULL DOWN**

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 governer 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)
	34 - FIRE PROTECTION			
A	Engine fire detection system (OPT70 26002A) <u>TBM 700A & 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 & 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 & 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

<u>Pre-MOD70-0176-00 or Pre-MOD70-276-00 ”G1000 Integrated Flight Deck”</u>

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

CHIP DETECTION SYSTEM

TABLE OF CONTENTS

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”.

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”.

OIL CONTAMINATION CHIP

Indication : **“CHIP”** amber warning 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”.

When “CHIP” amber warning goes 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)
	79 - LUBRICATION			
A	Chip detection system (2 detectors) (MOD70-0169-79A)		Negligible	/
A	Chip detection system (1 detector) (MOD70-0169-79B)		Negligible	/
A	Chip detection system (2 detectors) with G1000 system (MOD70-0169-79C)		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, amber warning light “CHIP” on advisory panel or amber CAS message “CHIP” on G1000 system screen goes on.

SUPPLEMENT

”AIRBORNE” GWX 68
COLOR WEATHER RADAR

TABLE OF CONTENTS

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 personel 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**

BEFORE LANDING

- Radar Mode Softkey .... **STANDBY**

ENGINE SHUT-DOWN

- Radar Mode Softkey .... **OFF**

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)
	34 - NAVIGATION				
A	Weather radar (MOD70-0176-00 Version C) (MOD70-0276-00 Version C)	GWX 68	AIRBORNE	9.36 (4.246)	173.46 (4.406)

SECTION 7

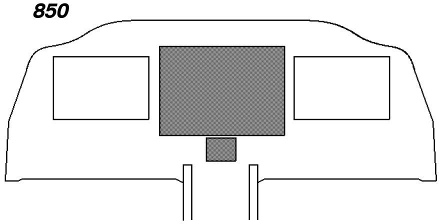
DESCRITION

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



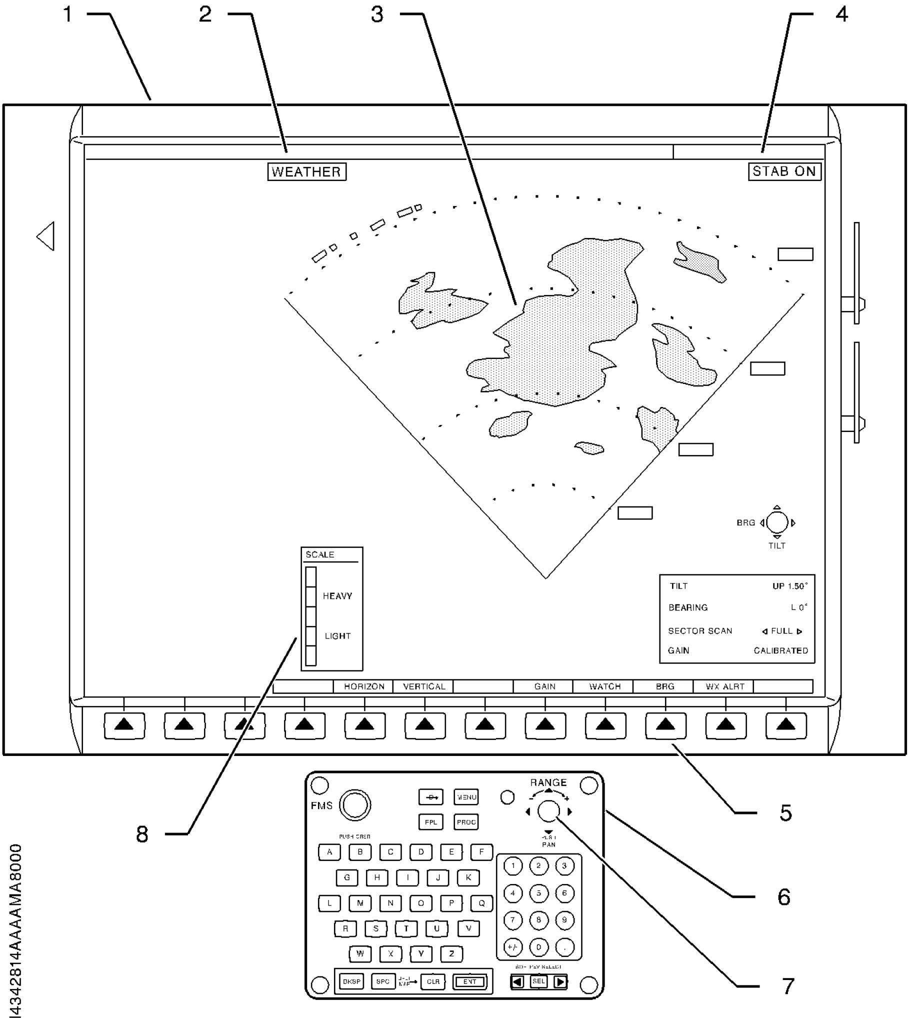


Figure 9.47.1 (2/2) - GWX 68 weather radar display and controls

SUPPLEMENT

”HONEYWELL” KTA 870
TAS SYSTEM

TABLE OF CONTENTS

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 850 airplane is equipped with the option ”HONEYWELL” KTA 870 TAS SYSTEM.

The KTA 870 TAS function enables to monitor the traffic by relying on information obtained from nearby airplane transponders. This function does neither detect, nor track airplanes which are not equipped with an operating ATCRBS transponder.

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 850 airplane is equipped with the option ”HONEYWELL” KTA 870 TAS SYSTEM.

REMARK :
The KTA 870 TAS function is an advisory means, not a TCAS.

Following documents or any further edition applicable to the latter, shall be readily available to the pilot, each time the KTA 870 system is used :

- KTA 870/KMH 880 Traffic Advisory System/Multi-Hazard Awareness System Pilot’s Guide, P/N 006-18265-0000 Revision 0 dated 03/01,

and

- ”GARMIN” G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 850 No. 190-00708-00.

SECTION 3

EMERGENCY PROCEDURES

The installation and the operation of ”HONEYWELL” KTA 870 TAS system 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

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 850 airplane is equipped with the option ”HONEYWELL” KTA 870 TAS SYSTEM.

BEFORE TAKEOFF

- Traffic Page TEST Softkey . . . . **PUSH**
- “TAS system test OK” voice alert . . . . **HEARD**

WARNING

DO NOT ATTEMPT EVASIVE MANEUVERS BASED SOLELY ON TRAFFIC INFORMATION SHOWN ON DISPLAY ASSOCIATED TO THE KTA 870 TAS FUNCTION. INFORMATION ON THE DISPLAY IS PROVIDED TO THE FLIGHT CREW AS AN AID IN VISUALLY ACQUIRING TRAFFIC; IT IS NOT A REPLACEMENT FOR ATC AND SEE & AVOID TECHNIQUES

When the KTA 870 TAS function issues a Traffic Alert (aural or visual), look outside for the intruder airplane. When you spot an intruder airplane, use normal right-of-way procedures to maintain separation.

SECTION 5

PERFORMANCE

The installation and the operation of the ”HONEYWELL” KTA 870 TAS 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)
	34 - NAVIGATION			
A	TAS system KTA 870 coupled with GARMIN G1000 system (OPT70-034-061D)	HONEYWELL	9.17 (4.160)	133.07 (3.380)

SECTION 7
DESCRIPTION

7.1 COMPONENTS OF THE OPTION

The KTA 870 option is constituted of the following components :

- a KTA 810 computer,
- two KA 815 antennas.

Traffic information can be displayed on a dedicated screen (GDU 1500 MFD) and traffic annunciation is displayed on both GDU 1500 MFD and GDU 1040 PFD.

7.2 KTA 870 TAS FUNCTION

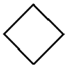
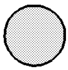
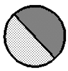
Traffic detected is displayed, when the vertical separation between your own airplane altitude and the intruder altitude ranges :

MODE	From	Up to
ABOVE (Look up)	– 2700 ft	+ 9000 ft
NORMAL (Normal)	– 2700 ft	+ 2700 ft
Below (Below)	– 9000 ft	+ 2700 ft
UNREST (Unrestricted)	– 9000 ft	+ 9000 ft

Traffic Advisory (TA) criteria, which initiate a visual and/or an aural alert, are (sensitivity level B) :

- detection of an intruder airplane within a 0.55 NM horizontal radius and a ± 800 ft relative altitude,
- approach of an intruder airplane on a course that will intercept your course within 20 to 30 seconds.

Traffic is displayed according to TCAS symbology, however track vector information is not displayed. The KTA 870 TAS system uses the following symbols :

TAS symbol	Description
	Non-Threat Traffic
	Proximity Advisory (PA)
	Traffic Advisory (TA)
	Traffic Advisory Off Scale

I4342814AAAAMA8200

Airplanes equipped with the radio altimeter

When the airplane is at a ground height lower than 2000 ft, Traffic Advisory (TA) criteria, which initiate a visual and/or an aural alert, are (sensitivity level A) :

- detection of an intruder airplane within a 0.2 NM horizontal radius and a ± 600 ft relative altitude,
- approach of an intruder airplane on a course that will intercept your course within 15 to 20 seconds.

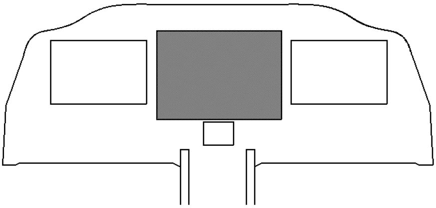
The aural traffic alert is inhibited when the height detected by the radio altimeter is below 600 ft.

TAS function will be automatically activated, if one of the following conditions is met (G1000 system logic) :

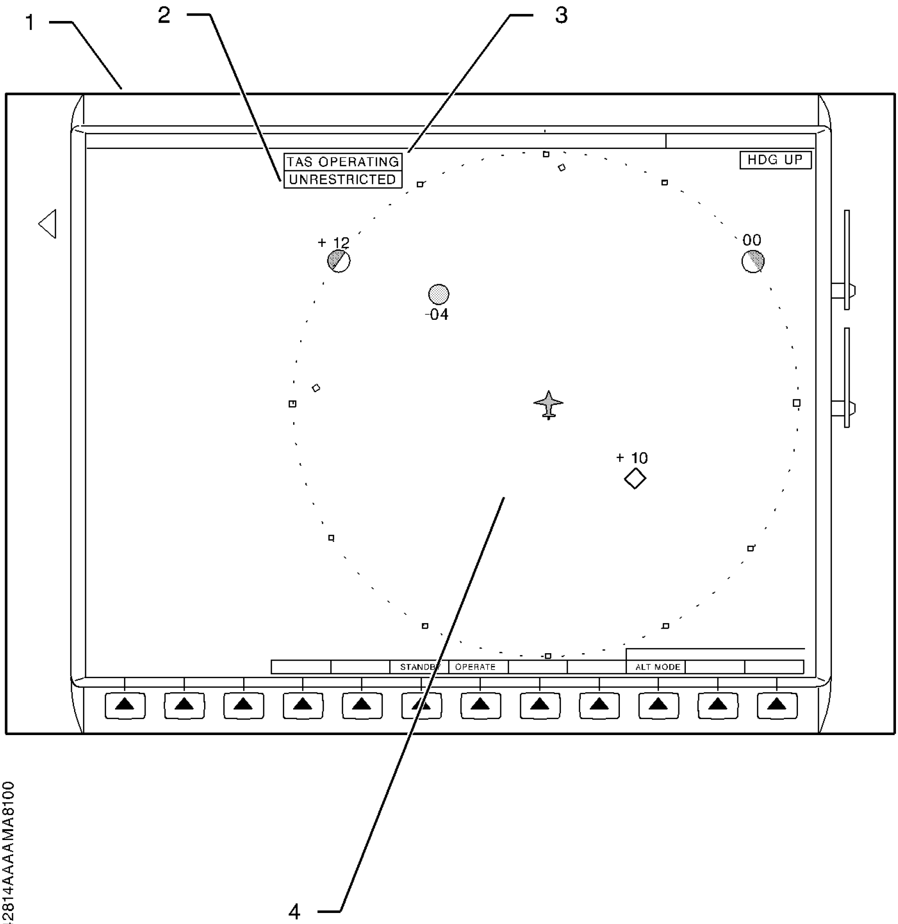
- radio altimeter height is greater than 50 ft,

or

- airplane is in air.



1) GDU 1500 MFD
2) TAS altitude mode
3) TAS operating mode
4) Aera of TAS display



I4342814AAAAMA8100

Figure 9.48.1 - KTA 870 System display and controls

SUPPLEMENT

"GARMIN" G1000 TAWS SYSTEM

TABLE OF CONTENTS

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.

<u>AC 2318 recommendation</u> : 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 :

<u>Airplanes equipped with MOD70-0176-00</u>

- "GARMIN" G1000 Integrated Flight Deck Cockpit Reference Guide for the Socata TBM 850 No. 190-00708-00.

<u>Airplanes equipped with MOD70-0276-00</u>

- "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)
	34 - NAVIGATION			
A	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 whithin 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 whithin 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 Annunciation	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.

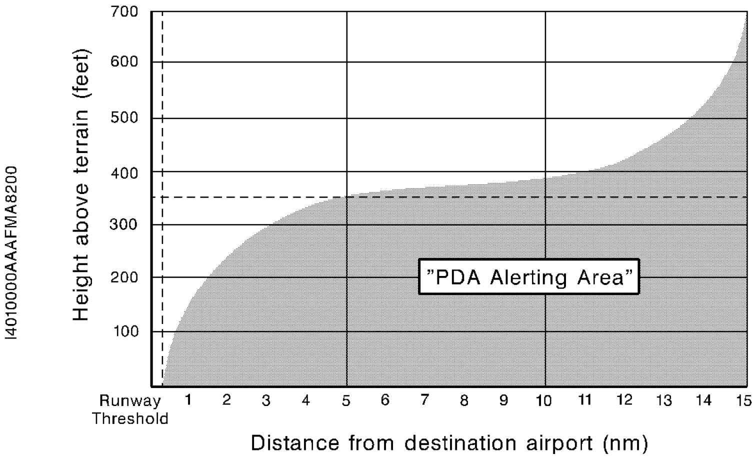


Figure 9.49.1 – PDA alerting threshold

The aural/displayed messages associated with the PDA function are described in the table 7.3.

Alert Type	PFD/MFD TAWS Page Annuncia-tion	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.

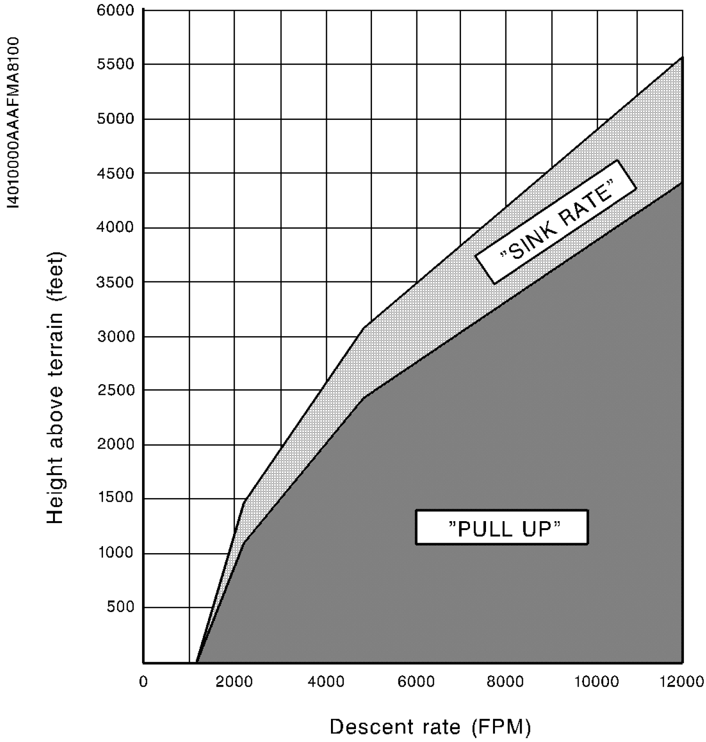


Figure 9.49.2 - Excessive Descent Rate Alert Criteria

The aural/displayed messages associated with the EDR function are described in the table 7.4.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Excessive Descent Rate Warning (EDR) (Red)	PULL UP	PULL-UP	"Pull up"
Excessive Descent Rate Caution (EDR) (Amber)	TERRAIN	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.

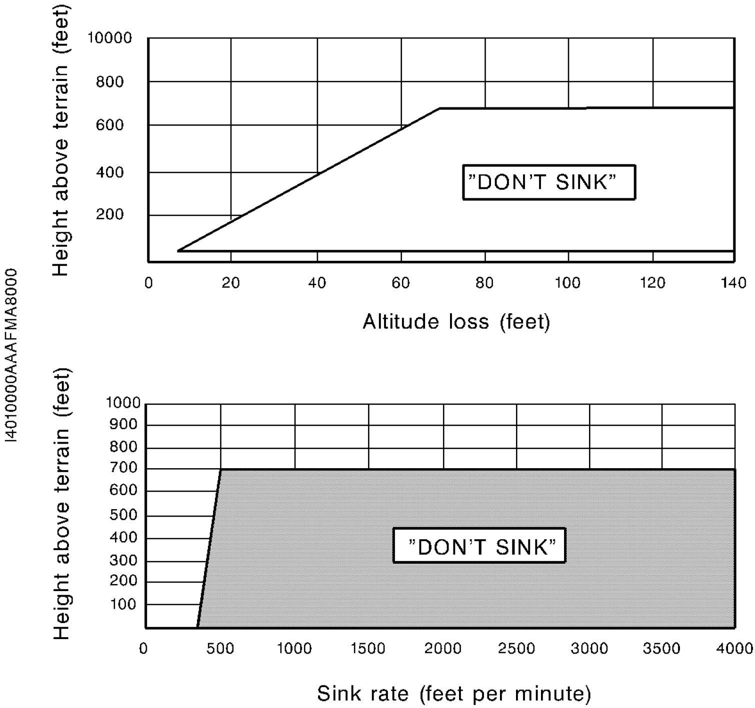


Figure 9.49.3 - Negative Climb Rate (NCR) Alert Criteria

The aural/displayed messages associated with the NCR function are described in the table 7.5.

Alert Type	PFD/MFD TAWS Page Annunciation	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, tne 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.

SUPPLEMENT

”GARMIN” G1000
SYNTHETIC VISION SYSTEM

TABLE OF CONTENTS

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 :

<u>Airplanes equipped with MOD70-0176-00</u>

- "GARMIN" G1000 Integrated Flight Deck Cockpit Pilot's Guide for the Socata TBM 850 No. 190-00709-01 or any later revision as applicable.

<u>Airplanes equipped with MOD70-0276-00</u>

- "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 instrment 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.

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)
	34 - NAVIGATION			
A	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.

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.

GARMIN GSR 56 WEATHER DATALINK AND SATELLITE PHONE

MOD70-0331-23 Version A

This supplement includes the general, limitations, emergency procedures, normal procedures, performance, weight and balance and description in addition to those of TBM 850 airplane in its standard version.

This Supplement includes information to be furnished to the pilot as required by the certification conditions.

EASA Approval Number : EASA 10037423 - MOD70-0331-23

Date : November 25, 2011

THIS DOCUMENT MUST BE EMBODIED IN SECTION 9 OF THE PILOT'S OPERATING HANDBOOK AND BE PERMANENTLY KEPT IN THE AIRPLANE WHEN THE OPTIONAL "GARMIN" GSR 56 WEATHER DATALINK AND SATELLITE PHONE SYSTEM IS INSTALLED

LIST OF EFFECTIVE PAGES AND VALIDITIES

ORIGINAL ISSUE OF NOVEMBER 15, 2011

S / N 269 and from S / N 434

P/N Z00.DMNFM56EE0R0EN

Page No.	Revision No.	Page No.	Revision No.
9.56A	0		
9.56B	0		
9.56C	0		
9.56D	0		
9.56.1	0		
9.56.2	0		
9.56.3	0		
9.56.4	0		
9.56.5	0		
9.56.6	0		

EASA Approval Number : EASA 10037423 - MOD70-0331-23

Date : November 25, 2011

LIST OF AMENDMENTS

Revision ... of ....

Pages	Description

SUPPLEMENT

"GARMIN" GSR 56 WEATHER DATALINK AND SATELLITE PHONE

TABLE OF CONTENTS

SECTION 1

GENERAL

This supplement supplies information necessary for the operation of the airplane when the optional ”GARMIN” GSR 56 weather datalink and satellite phone system is installed in the TBM 850 airplane.

SECTION 2

LIMITATIONS

These limitations supplement those of standard airplane described in Section 2 ”Limitations” of the basic Pilot’s Operating Handbook.

<u>SATELLITE PHONE functions</u>

- It is forbidden to activate Pilot In Command On-side GMA TEL button as long as the airplane is in the air or moving on the ground.
- Only the Pilot In Command cross side GMA TEL input can be activated at all time of flight for the front passenger and passengers to have the GSR 56 telephone audio functions.

USE OF PHONE BY PIC PROHIBITED DURING ALL AIRCRAFT OPERATIONS

<u>WEATHER DATALINK functions</u>

- The GSR 56 weather datalink is only an advisory weather source, it does not relieve the pilot to comply with the applicable operational regulation in terms of flight preparation especially with regard to the use of an approved weather and NOTAM sources during flight planning.

The ”GARMIN” G1000 Integrated Flight Deck Pilot’s Guide for the Socata TBM 850 No. 190-00709-04 at its latest revision shall be readily available to the pilot whenever the operation of the GSR 56 weather datalink and satellite phone system is predicted.

INTERNATIONAL TELECOMMUNICATION REGULATION

The GSR 56 is a telecommunication device approved under FCC ID Q639522B and registered by the ITU (International Telecommunication Union) for international use according to the GMPCS-MoU.

The receiver transmitter RF module embedded in the GSR 56 is a 9522 B manufactured by Iridium Satellite LLC.

Terms of use are subject to changes and are available from the ITU website.

2.1 - PLACARDS

Under L.H. front side window, under instruction plate

I4113207AAAAMA4200

USE OF PHONE BY PIC PROHIBITED DURING ALL AIRCRAFT OPERATIONS

SECTION 3

EMERGENCY PROCEDURES

Installation and operation of "GARMIN" GSR 56 weather datalink and satellite phone system 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 "GARMIN" GSR 56 weather datalink and satellite phone system are outlined in the Pilot's Guide, the references of which are given in Section 2 "Limitations" of this Supplement.

BEFORE STARTING ENGINE

On L.H. GMA 1347 audio panel

1 – "TEL" button . . . . **OFF**

BEFORE STARTING A PHONE CALL IN FLIGHT

On L.H. GMA 1347 audio panel

1 – "TEL" button . . . . **OFF**

If passengers intend to take part into a phone call :

2 – "CABIN" button . . . . **OFF**

If front passenger intends to take part into a phone call :

3 – "INTRCOM" button . . . . **OFF**

On R.H. GMA 1347 audio panel

4 – "TEL" button . . . . **ON**

If passengers intend to take part into a phone call :

5 – "CABIN" button . . . . **ON**

SECTION 5

PERFORMANCE

Installation and operation of "GARMIN" GSR 56 weather datalink and satellite phone 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)
	23 - COMMUNICATIONS			
A	Weather datalink and satellite phone system GSR 56 coupled with "GARMIN" G1000 system MOD70-0331-23	GARMIN	3.82 (1.736)	58.03 (1.474)

SECTION 7

DESCRIPTION

"GARMIN" GSR 56 weather datalink and satellite phone system provides airborne low speed datalink and voice communication capability to "GARMIN" G1000 system excluding any voice mail function. GSR 56 weather datalink and satellite phone system contains a transceiver that operates on the Iridium Satellite network.

The weather information are displayed on the MFD (GDU 1500) maps and on the PFD (GDU 1040) inset map.

The satellite phone interface is embedded in the MFD : Phone communication and SMS can be received and sent through the dedicated pages on the MFD.

Although it is possible to leave a message when calling the aircraft, as voice mail communication is not supported by the GSR 56 :

- it is not possible to access the GSR 56 voice mail from the aircraft
- there is no indication on the G1000 system when a new message has been left on the GSR 56 voice mail.

The controls for the MFD are located on both the MFD bezel and the MFD control unit (keyboard GCU 475).

The telephone audio including the incoming call ringing is controlled by the TEL button on the GMA 1347 audio panels and can be played in the pilot, front passenger and passengers headphones.

DAHER-SOCATA

TBM 850

LIST OF EQUIPMENT

Report NAV No. 34/90–RJ–App1

From S/N 434, plus S/N 269

SOCATA
DIRECTION DES SERVICES
65921 TARBES CEDEX 9
FRANCE

TELEPHONE : 33 (0)5.62.41.73.00
TELEFAX : 33 (0)5.62.41.76.54

Printed in France

TABLE OF CONTENTS

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 011-01110-00 P/N 011-00916-00 or P/N 011-01108-00
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 011-01105-00 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	WEIGHT per unit lb (kg)	ARM in. (m)
		01 - SPECIFIC OPTIONAL EQUIPMENT		
S		Flight ceiling at 31000 ft	/	/

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)
		21 - ENVIRONMENTAL SYSTEM			
S		General air system controller	82024A020101	1.98 (0.900)	311.02 (7.900)
		21-20 - Distribution			
S		Mixing unit	9723A010001	0.53 (0.240)	151.57 (3.850)
S		Hot Air Distributor	6044A010001	4.06 (1.840)	153.54 (3.900)
S		Bleed temperature switch	92244A010002	0.13 (0.060)	153.54 (3.900)
		21-30 - Pressurization control			
S		Cabin altitude warn switch	214 C40.3.261	0.08 (0.035)	153.94 (3.910)
S		Cabin pressure control panel	22297A010001	0.66 (0.300)	167.32 (4.250)
S		Cabin differential pressure switch	17-600-01	0.14 (0.065)	139.76 (3.550)
S		Outflow valve	81146A010101	3.97 (1.800)	317.32 (8.060)
S		Safety valve	81147A010101	3.31 (1.500)	317.32 (8.060)
A	0176-00I	Selected cabin altitude repeater potentiometer interface		/	/
		21-50 - Temperature conditioning system			
S		Flow control shut-off valve	6784A010001	4.74 (2.150)	114.17 (2.900)
S		Non-return valve	7085A010002	0.11 (0.050)	102.36 (2.600)
S		Shut-off valve	4589A010001	2.37 (1.075)	114.17 (2.900)

S/R/A/O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT		WEIGHT per unit lb (kg)	ARM in. (m)
S		Intermediate pressure sensor	93557A010001	0.33 (0.150)	110.24 (2.800)
S		Overheat thermal switch	A042010300-5	0.18 (0.080)	110.24 (2.800)
S		Main heat exchanger	81249A010001	7.72 (3.500)	108.27 (2.750)
S		Ground Fan	8031A010001	3.95 (1.790)	90.55 (2.300)
		21-55 - Vapor cycle system			
S		Compressor	1377A010001	14.77 (6.700)	98.43 (2.500)
S		Cockpit Evaporator Assembly	14720A010001	9.06 (4.111)	200.79 (5.100)
S		Cabin Evaporator Assembly	14719A010001	12.90 (5.850)	311.02 (7.900)
S		Condenser Assembly	81250A010001	24.80 (11.250)	330.71 (8.400)
		21-60 - Temperature regulation			
S		By-pass valve	6043A010001	3.31 (1.500)	106.30 (2.700)
S		Bleed differential pressure sensor	93558A010001	0.44 (0.200)	114.17 (2.900)
S		Inlet temperature sensor	93276A010001	0.11 (0.050)	153.54 (3.900)
S		Cockpit ventilated sensor	92279A010002	0.18 (0.080)	182.09 (4.625)
S		Cabin ventilated sensor	92279A010002	0.18 (0.080)	250.00 (6.350)

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)
		22 - AUTO FLIGHT			
S	0176-00A	G1000 AFCS composed of :	GFC 700		
		. Pitch servo and Servo mount	GSA 81 GMS 85	3.86 (1.75)	247.40 (6.284)
		. Roll servo and Servo mount	GSA 81 GMS 85	3.86 (1.75)	231.10 (5.870)
		. Yaw servo and Servo mount	GSA 81 GMS 85	3.86 (1.75)	253.70 (6.444)
		. Pitch trim servo and Servo mount	GSA 81 GMS 85	4.04 (1.83)	157.87 (4.010)
		. Trim adapter	GTA 82	1.30 (0.59)	240.87 (6.118)
		. AFCS Control Unit	GMC 710	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	WEIGHT per unit lb (kg)	ARM in. (m)
		23 - COMMUNICATIONS		
S		Cockpit loud-speaker (Qty 2) AB 100 SC	0.77 (0.350)	181.10 (4.600)
S	0176-00A	G1000 dual audio system with integrated Marker Beacon Receiver # 1 GMA 1347C	2.59 (1.71)	153.35 (3.895)
S	0176-00A	G1000 dual audio system with integrated Marker Beacon Receiver # 2 GMA 1347C	2.59 (1.71)	153.35 (3.895)
S	0176-00A	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	0.86 (0.390)	271.65 (6.900)
S	0176-00A	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	0.86 (0.390)	271.65 (6.900)
S	23011G	Radio stereo-headset HMEC 25-6A	/	/
S		Static dischargers Type 2-16SC-1	Neglig.	/
A	23009A	Additional equipment for electrostatic dischargers	Neglig.	/
A	0176-00B	Data link XM Radio GDL 69A interfaced with G1000 system	2.55 (1.16)	150.67 (3.827)

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)
		24 - ELECTRICAL POWER			
		24-30 - DC generation			
R		Electric power center	160GC02Y05	11.02 (5.000)	127.95 (3.250)
R		Stand-by generator	T700A243008000601	12.13 (5.500)	102.36 (2.600)
R		Starter generator	8012F	24.47 (11.100)	110.24 (2.800)
S	24002	Lead-Acid battery	RG-380E/44	85.98 (39.000)	112.20 (2.850)
		24-40 - External power supply			
S		Ground power receptacle	MS 3506-1	0.79 (0.360)	114.17 (2.900)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	WEIGHT per unit lb (kg)	ARM in. (m)
		25 - EQUIPMENT AND FURNISHINGS		
S		Map holder	0.46 (0.210)	167.72 (4.260)
S		28 V plugs	/	/
S	25026B	Partition net between the cabin and the baggage compartment	3.64 (1.650)	289.53 (7.354)
A	171-25	Cabinets		
		- Vers. A : L.H. low cabinet	9.48 (4.300)	203.74 (5.175)
		- Vers. B : R.H. low cabinet	9.48 (4.300)	203.74 (5.175)
		- Vers. C : Removable (low) insulated picnic bag	9.48 (4.300)	203.74 (5.175)
		- Vers. D : L.H. tall storage cabinet	7.72 (3.500)	203.74 (5.175)
		- Vers. E : R.H. tall storage cabinet	7.72 (3.500)	203.74 (5.175)
		- Vers. F : R.H. tall storage cabinet + audio	7.94 (3.600)	203.74 (5.175)
		- Vers. G : L.H. tall baggage cabinet	3.09 (1.400)	203.74 (5.175)
		- Vers. H : R.H. tall baggage cabinet	3.09 (1.400)	203.74 (5.175)
S	0207-00	- Carpet	35.27 (16.000)	211.42 (5.370)
		- Cabin furnishings	302.45 (137.19)	211.42 (5.370)
A	0207-00	2nd Carpet	35.27 (16.000)	211.42 (5.370)
A	25032	Front seats ease covers	2.76 (1.250)	183.78 (4.668)
A	0151-25	CD reader PCD 7100	2.20 (1.00)	205.04 (5.208)
A	174-25B	Optional 12 V plugs	3.31 (1.500)	195.28 (4.960)

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)
		Leather seats - Belts			
S		. Pilot's seat	T700C2500002000	55.12 (25.00)	183.90 (4.671)
S		. Front R.H. seat	T700C2500002001	55.12 (25.00)	183.90 (4.671)
S		. L.H. Intermediate seat (back to flight direction)	T700C2500003002	35.27 (16.00)	220.94 (5.612)
		R.H. Intermediate seat (back to flight direction)	T700C2500003003	35.27 (16.00)	220.94 (5.612)
S		. Double chair			
		. L.H. seat	T700C2500005002	52.91 (24.00)	278.19 (7.066)
		. R.H. seat	T700C2500005003	52.91 (24.00)	278.19 (7.066)
S		Reels		1.79 (0.810)	192.91 or 287.40 (4.900 or 7.300)
		25-61 - Emergency locator transmitter			
S	0208-25B	Emergency Locator Transmitter (installed in tail area)	ME-406	4.10 (1.86)	336.46 (8.546)
O	25030C	Emergency Locator Transmitter (with base)	C406-1	4.46 (2.021)	354.72 (9.010)
		. ELT/NAV interface box	453-6500	2.69 (1.220)	353.15 (8.970)
		. Antenna	21-41	0.31 (0.140)	318.70 (8.095)
O	25030D	Emergency Locator Transmitter (with base)	C406-1	4.46 (2.021)	354.72 (9.010)
		. Antenna	21-41	0.31 (0.140)	318.70 (8.095)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT		WEIGHT per unit lb (kg)	ARM in. (m)
		26 - FIRE PROTECTION			
S	26001B	Portable fire extinguisher unit	863520-00	3.64 (1.650)	194.17 (4.932)
A	26002C	Engine fire detection system		1.45 (0.660)	96.06 (2.440)

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)
		27 - FLIGHT CONTROLS			
		27-10 - Roll control			
R		Roll trim actuator	145700.02	1.54 (0.700)	212.60 (5.400)
		27-20 - Yaw control			
R		Rudder trim actuator	145700.02	1.54 (0.700)	395.27 (10.040)
R		Trim and flap indicator	4724	1.10 (0.500)	159.45 (4.050)
S		AFC and electric trim control on R.H. control wheel		0.88 (0.400)	157.48 (4.000)
		27-30 - Pitch control			
S		Pitch trim actuator	145400-02	1.21 (0.550)	425.20 (10.800)
		27-50 - Wing flaps (control)			
R		Flap control including :		15.52 (7.040)	218.50 (5.550)
		. Flap motor	6157-1	2.87 (1.300)	216.54 (5.500)
		. Flap actuator	1-5295/2-5295	1.92 (0.870)	216.54 (5.500)
			or 1-5297/2-5297	1.83 (0.830)	220.47 (5.600)

S/R/A/O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT		WEIGHT per unit lb (kg)	ARM in. (m)
		28 - FUEL SYSTEM			
		28-20 - Fuel supply			
R		Electric boost pump	2022-B	3.48 (1.580)	129.92 (3.300)
R		Electric boost pump	1B9-5	4.41 (2.000)	129.92 (3.300)
R		Engine driven fuel pump	1127-01A	1.54 (0.700)	110.24 (2.800)
R		Fuel sequencer unit		1.10 (0.500)	125.98 (3.200)
R		Fuel unit	L88A15-651	4.59 (2.080)	133.07 (3.380)
		28-40 - Fuel indication			
R	0158-28	Fuel gage amplifier (in us gal)		1.08 (0.49)	278.74 (7.080)
R		Inboard L.H. probe	768-403 or 762 438.1.0	0.33 (0.150)	183.07 (4.650)
R		Inboard R.H. probe	768-404 or 762 439.1.0	0.33 (0.150)	183.07 (4.650)
R		Intermediate probe	766-976-1 or 762 440.1.0	0.22 (0.100)	190.94 (4.850)
R		Low level probe	722-447	0.11 (0.050)	183.07 (4.650)
R		Outboard probe	766-977-1 or 762 441.1.0	0.22 (0.100)	190.94 (4.850)

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)
		30 - ICE AND RAIN PROTECTION		
S		Deicer, L.H. horizontal stabilizer T700A3013003000	4.19 (1.900)	398.42 (10.120)
S		Deicer, R.H. horizontal stabilizer T700A3013003001	4.19 (1.900)	398.42 (10.120)
S		Deicer, vertical stabilizer T700A3014003000	3.97 (1.800)	374.02 (9.500)
S		Deicer, inboard L.H. wing T700A3010001002	5.73 (2.600)	173.23 (4.400)
S		Deicer, inboard R.H. wing T700A3010001003	5.73 (2.600)	173.23 (4.400)
S		Deicer, middle L.H. wing T700A3010001004	3.75 (1.700)	173.23 (4.400)
S		Deicer, middle R.H. wing T700A3010001005	3.75 (1.700)	173.23 (4.400)
S		Deicer, outboard L.H. wing T700A3010012000	2.65 (1.200)	173.23 (4.400)
S		Deicer, outboard R.H. wing T700A3010001007	3.31 (1.500)	173.23 (4.400)
S		Dual port distribution valve 1532-10C	2.43 (1.100)	125.98 (3.200)
S		Timer 42E25-2A	0.77 (0.350)	177.17 (4.500)
S		Water separator and filter 44E21-2A	1.10 (0.500)	125.98 (3.200)
		30-40 - Windshield deicing		
S		Windshield heater controller (Qty 2) TWH 93-01	0.99 (0.450)	149.61 (3.800)

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)
		30-60 - Propeller deicing			
S		Modular brush assy	3E2044-2	0.44 (0.200)	47.05 (1.195)
S		Timer	3E2311-4	0.44 (0.200)	200.79 (5.100)

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)
		31 - INDICATING/RECORDING SYSTEMS			
		31-20 - Independent instruments			
S	31002B	Hourmeter (flying time)	56457-3	0.55 (0.250)	156.30 (3.970)
O	31002A	Hourmeter (engine running time)	56457-3	0.55 (0.250)	156.30 (3.970)
		31-50 - Aural warning			
R		Aural warning system	T700A3155011000	0.66 (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		WEIGHT per unit lb (kg)	ARM in. (m)
		32 - LANDING GEARS			
		32-10 - Main landing gear			
R		L.H. main landing gear	D23767000	51.59 (23.400)	200.39 (5.090)
R		R.H. main landing gear	D23768000	51.59 (23.400)	200.39 (5.090)
		32-20 - Nose landing gear			
R		Nose gear	D23766000	53.57 (24.300)	93.70 (2.380)
		32-30 - Extension and retraction			
R		Door actuator	EC 6230	1.35 (0.610)	192.91 (4.900)
R		Main locking actuator	08-1480	13.23 (6.000)	208.07 (5.285)
R		Nose locking actuator	08-1480	13.23 (6.000)	110.24 (2.800)
R		Hand pump	914-8D27	2.33 (1.055)	181.10 (4.600)
		32-35 - Hydraulic generation			
R		Hydraulic power pack assy	1118-04	10.36 (4.700)	84.65 (2.150)
		32-40 - Wheels and brakes			
R		Brake assembly	030-19100	14.99 (6.800)	204.33 (5.190)
R		Main tire P/N 033-631-1 or P/N 033-631-0	18x5.5-10PR 18x5.5-10PR	13.50 (6.123)	204.33 (5.190)
R		Master cylinder	010-07801	0.88 (0.400)	145.67 (3.700)

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)
R		Master cylinder	010-07802	0.88 (0.400)	145.67 (3.700)
R		Nose tire P/N 071-311-1	5.00-5-10PR TL	5.60 (2.540)	89.57 (2.275)
R		Nose tire P/N 505T01-1	5.00-5-10PR TL	6.30 (2.858)	89.57 (2.275)
R		Nose wheel	40-262A	2.98 (1.350)	89.57 (2.275)
R		Main wheel	(Model 40-434)	11.28 (5.120)	204.33 (5.190)
R		Parking brake valve	T700A3240010 or T700B3240001	0.33 (0.150)	157.48 (4.000)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT		WEIGHT per unit lb (kg)	ARM in. (m)
		33 - LIGHTS			
		33-10 - Instrument panel lighting			
S		L.H. tube	67135 U290 C62S	Neglig.	/
S		R.H. tube	67135 U290 C63S	Neglig.	/
S		DC/AC inverter	T700A3310021	0.33 (0.150)	153.54 (3.900)
S		Intensity control	T700A3310022	0.22 (0.100)	157.48 (4.000)
S		Instruments emergency lighting	2240-3	0.11 (0.050)	181.10 (4.600)
A	33001B	PULSELITE control		1.27 (0.574)	202.60 (5.146)
		33-40 - External lighting			
S		L.H. wing inspection light (icing detection)	T700A3340012	0.20 (0.090)	151.57 (3.850)
S		Landing lights	4596	0.79 (0.360)	179.13 (4.550)
S		Taxi light assy	T700A3340006	1.10 (0.500)	93.70 (2.380)
S		NAV/Anticollision system :			
S		- Anticollision power supply	A413A HDA-CF-14/28	3.00 (1.360)	204.72 (5.200)
S		- R.H. or L.H. navigation light assy	T700A3341019	0.51 (0.230)	185.04 (4.700)
A	33002	Halogen landing lights	Q5596	0.79 (0.360)	179.13 (4.550)
		Halogen taxi lights	Q5587	1.10 (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		WEIGHT per unit lb (kg)	ARM in. (m)
		34 - NAVIGATION			
		34-11 - Air data systems			
R		Lift transducer	799-8	0.88 (0.400)	173.23 (4.400)
S		Pitot L heated probe	AN 5812-1	0.75 (0.340)	200.79 (5.100)
S		Pitot R heated probe	AN 5812-1	0.75 (0.340)	200.79 (5.100)
S		Static reference selector	TB30 77010000	0.22 (0.100)	157.48 (4.000)
R		Stand-by altimeter	3A43.22.35F.28.1	1.10 (0.500)	154.45 (3.923)
R		Stand-by airspeed indicator	5A58.22.30K.28.1	0.57 (0.260)	155.20 (3.942)
		34-21 - Heading reference system			
S	0176-00A	Attitude and Heading Reference System # 1	GRS 77	3.46 (1.57)	171.77 (4.363)
S	0176-00A	Attitude and Heading Reference System # 2	GRS 77	3.46 (1.57)	171.77 (4.363)
S	0176-00A	Magnetometer # 1	GMU 44	0.48 (0.22)	180.98 (4.597)
S	0176-00A	Magnetometer # 2	GMU 44	0.48 (0.22)	180.98 (4.597)
		34-23 - Magnetic compass			
R		Stand-by compass	C2350 L4CM23	0.55 (0.250)	163.39 (4.150)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT		WEIGHT per unit lb (kg)	ARM in. (m)
		34-24 - ADI and standby horizon			
S		Stand-by ADI	1U149-019-19	4.19 (1.900)	152.56 (3.875)
		34-28 - Electronic flight instrumentation system			
S	0176-00A	Integrated Flight Deck System composed of :	G1000		
		. PFD1	GDU 1040A	6.53 (2.96)	155.71 (3.955)
		. PFD2	GDU 1040A	6.53 (2.96)	155.71 (3.955)
		. MFD	GDU 1500A	8.66 (3.93)	155.20 (3.942)
		. Engine/Airframe Interface Unit # 1	GEA 71	2.53 (1.15)	150.63 (3.826)
		. Engine/Airframe Interface Unit # 2	GEA 71	2.53 (1.15)	150.63 (3.826)
		. Integrated Avionics Unit # 1	GIA 63W	7.21 (3.27)	149.37 (3.794)
		. Integrated Avionics Unit # 2	GIA 63W	7.21 (3.27)	149.37 (3.794)
		. MFD remote controller	GCU 475	0.82 (0.37)	157.83 (4.009)
		34-31 - Marker			
S		MARKER antenna	DM N27-3	0.75 (0.340)	129.92 (3.300)
S		Receiver (integrated in the GMA 1347C dual audio systems : refer to ATA 23-11)		/	/

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)
		34-41 - Stormscope			
A	34056B	Stormscope, G1000 coupled		4.94 (2.240)	232.28 (5.900)
		. Antenna	NY163	0.84 (0.380)	311.02 (7.900)
		. Processor	WX500	2.27 (1.030)	255.91 (6.500)
		34-42 - Weather radar			
A	0176-00C	Weather radar, G1000 coupled	GWX 68	9.36 (4.25)	173.46 (4.406)
		34-43 - Radioaltimeter			
A	34037L	Radioaltimeter, EFIS coupled :			
		. Transceiver	KRA 405B	2.80 (1.270)	231.18 (5.872)
		. Antenna	DM 19-2-1	0.20 (0.090)	181.10 and 204.72 (4.600 and 5.200)
A	0270-34	Radioaltimeter			
		. Transceiver	RA 4500	1.90 (0.862)	228.00 (5.812)
		. Antenna		0.30 (0.136)	182.00 (4.625)
		. Antenna		0.30 (0.136)	205.00 (5.228)

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)
		34-44 - Traffic advisory system			
A	34061D	TAS system KTA 870, G1000 coupled, of which :		11.40 (5.170)	132.16 (3.357)
		. Processor	KA 810	9.06 (4.110)	133.07 (3.380)
		. Antenna (upper fuselage)	KA 815	0.95 (0.430)	230.67 (5.859)
		. Antenna (under fuselage)	KA 815	0.95 (0.430)	256.69 (6.520)
A	0176-00F	G1000 TAWS system		/	/
A	0258-00	TAS system GTS 820, G1000 coupled, of which :		22.05 (10.220)	177.00 (4.513)
		. Processor	GTS 820	9.90 (4.500)	143.00 (3.635)
		. Power amplifier / low noise amplifier	GPA 65	1.89 (0.860)	221.00 (5.624)
		. Antenna (upper fuselage)	GA 58	0.79 (0.360)	230.00 (5.860)
		. Antenna (under fuselage)	GA 58	0.79 (0.360)	260.00 (6.620)
		34-51 - NAV 1 installation			
S		GS-NAV VHF antenna	DM N4-17N	3.31 (1.500)	401.57 (10.200)
S		Receiver (integrated in the GIA 63W Integrated Avionics Unit # 1 : refer to ATA 34-28)		/	/
		34-52 - NAV 2 installation			
S		Receiver (integrated in the GIA 63W Integrated Avionics Unit # 2 : refer to ATA 34-28)		/	/

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)
		34-53 - Transponder			
S	0176-00A	Transponder # 1 Mode S non diversity	GTX 33	3.87 (1.75)	149.65 (3.801)
		Antenna	KA 61	0.40 (0.18)	193.22 (4.908)
A	0176-00D	Transponder # 1 Mode S diversity	GTX 33D	4.12 (1.87)	149.65 (3.801)
		Antenna (under fuselage)	KA 61	0.40 (0.18)	150.08 (3.812)
		Antenna (upper fuselage)	KA 61	0.40 (0.18)	193.22 (4.908)
A	0176-00E	Transponder # 2 Mode S non diversity	GTX 33	3.87 (1.75)	149.65 (3.801)
		Antenna	KA 61	0.40 (0.18)	193.22 (4.908)
		34-54 - Automatic Direction Finder (ADF)			
A	0176-00H	ADF RA 3500 system (European countries only)		7.61 (3.45)	214.65 (5.452)
		34-55 - DME installation			
A	34014E	DME KN63, G1000 coupled		2.80 (1.27)	232.28 (5.900)
		Antenna	KA 61	0.40 (0.18)	238.82 (6.066)
		34-57 - Global Positioning System (GPS)			
S	0176-00A	GPS/WAAS antenna GA 36		0.50 (0.210)	204.84 (5.203)
		GPS/WAAS antenna GA 37		0.54 (0.230)	204.84 (5.203)
		34-62 - Multifunction display			
A	0176-00G	G1000 Chartwiew 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)
		35 - OXYGEN		
S	0207-00	Gaseous oxygen system	22.73 (10.310)	226.77 (5.760)

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)
		37 - VACUUM			
S		Air ejector valve	19E17-5A	0.66 (0.300)	116.14 (2.950)
S		Gyro suction gage	3-310-5	0.14 (0.065)	157.48 (4.000)
S		Gyro vacuum air filter	1J7-2	0.38 (0.170)	139.76 (3.550)
S		Regulator and relief valve	38E-96-2D	1.32 (0.600)	116.14 (2.950)
S		Vacuum relief valve	691-21A	0.33 (0.150)	139.76 (3.550)
S		Valve	557-18 E	0.35 (0.160)	118.11 (3.000)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	WEIGHT per unit lb (kg)	ARM in. (m)
		52 - DOORS		
A	52002A	”Pilot” door	44.092 (20.000)	171.26 (4.350)

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT		WEIGHT per unit lb (kg)	ARM in. (m)
		61 - PROPELLER			
		61-10 - Propeller assembly			
S		Propeller HC-E4N.3 / E 9083 S (K)		153.22 (69.500)	43.11 (1.095)
		61-20 - Controls			
R		Overspeed governor	A210632	2.73 (1.240)	59.06 (1.500)
S		Propeller governor	8210.007	2.65 (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		WEIGHT per unit lb (kg)	ARM in. (m)
		71 - POWERPLANT			
R		Turboprop engine	PT6 A-66D	497.30 (226.000)	79.72 (2.025)
S		Silentblocks	95007-16	2.92 (1.325)	79.72 (2.025)
		71-60 - Air inlet			
R		Inertial separator actuator	148600-09A	1.72 (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	WEIGHT per unit lb (kg)	ARM in. (m)
		77 - ENGINE INDICATING		
R		Compressor turbine tacho-generator (Ng) MIL-G-26611C GEU-7/A	0.981 (0.445)	108.27 (2.750)
R		Power turbine tacho-generator MIL-G-26611C GEU-7/A	0.981 (0.445)	55.12 (1.400)
R		Torque transducer 8107.200.00.10 or CZ52E8-G	0.463 (0.210)	53.54 (1.360)
		77-12 - Fuel management		
S		Fuel transmitter 660 526A	1.000 (0.454)	110.20 (2.799)

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)
		79 - LUBRICATION			
		79-20 - Distribution			
R		Oil cooler	L8538233	10.472 (4.750)	90.55 (2.300)
		79-30 - Indicating			
R		Oil pressure transmitter	8107-400-00-10	0.441 (0.200)	106.30 (2.700)