# 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 700 airplane.

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

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

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

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## 4.2 - AIRSPEEDS FOR NORMAL OPERATION

CONDITIONS : - Takeoff weight : 6579 lbs (2984 kg)
- Landing weight : 6250 lbs (2835 kg)

1 Rotation airspeed ($V_R$)
- Flaps TO ..... Depending on weight
(See "Takeoff distances" Chapter 5.8)

2 Best rate of climb speed ($V_Y$)
- Landing gear UP, flaps UP ..... 123 KIAS

3 Best angle of climb speed ($V_X$) ..... 95 KIAS

4 Maximum speed : Flaps TO ..... 178 KIAS
Flaps LDG ..... 122 KIAS

5 Maximum speed with landing gear down ..... 178 KIAS

6 Maximum landing gear operating speed
- Extension ..... 178 KIAS
- Retraction ..... 128 KIAS

7 Approach speed
- Flaps LDG ..... 80 KIAS

8 Maximum operating speed ($V_{MO}$) ..... 266 KIAS

9 Glide speed (maximum L / D ratio)
- Landing gear UP, flaps UP ..... 110 KIAS

10 Maximum inertial separator operating speed ..... 200 KIAS

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# 4.3 - CHECK-LIST PROCEDURES

## PREFLIGHT INSPECTION

(See Figure 4.3.1)

**IMPORTANT**

* During outside inspection, visually check inspection doors and airplane general condition.
* In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces.
* In case of night flight, check good operation of all navigation lights, landing lights, strobe lights and make sure that an emergency lamp is on board.
* If icing conditions are foreseen, particularly check good functioning of all electrical and pneumatic ice protection systems
* Check that type and quantity of fuel used for refueling are correct.
* Remove covers on :
  - pitots (2)
  - static ports (3)
  - engine air inlet and propeller locking (1).
* Remove tie-downs.
* Refer to Section 8 for quantities, products and specifications of products and materials currently used.

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

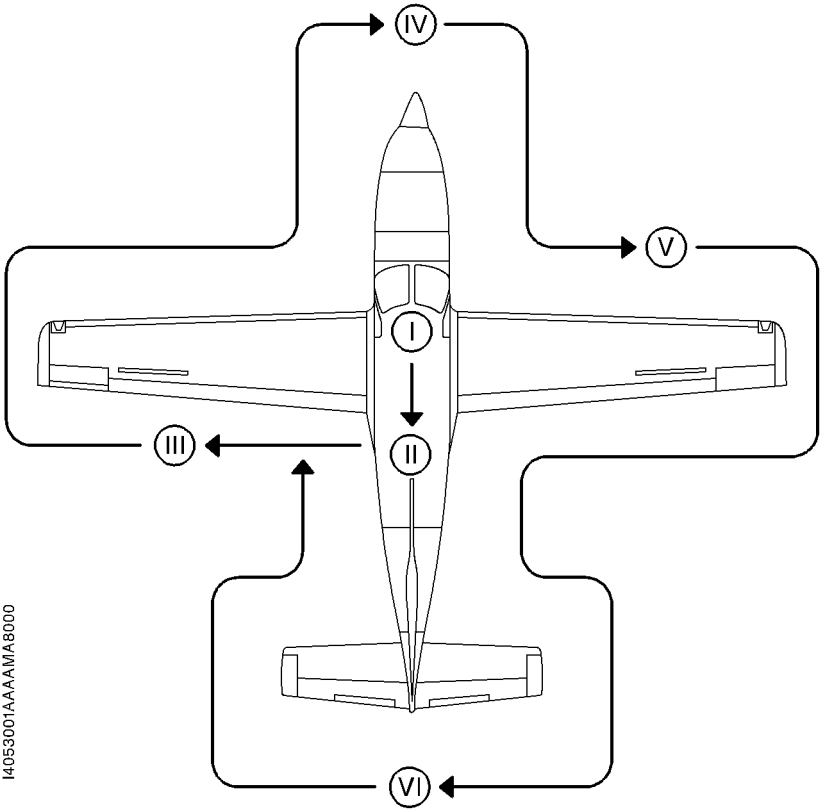



Figure 4.3.1 - PREFLIGHT INSPECTION

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

### A - INSIDE INSPECTIONS

***Cockpit*** (I)

- CRASH lever ..... **UP**

1 - ELECTRIC POWER panel
- "SOURCE" selector ..... **OFF**
- "GENERATOR" selector ..... **MAIN**

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

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

4 - GYRO INST panel
- All switches ..... **OFF**

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

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

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

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

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

10 - "RADIO MASTER" switch ..... **OFF**

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

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

13 - Fuel
- "FUEL SEL" selector ..... **MAN**
- "AUX BP" switch ..... **OFF**
- Tank selector ..... **L or R**

14 - ELT ..... **ARM**

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

16 - Flight controls ..... **Deflections checked**

17 - Parking brake ..... **SET**

18 - 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**

19 - BAT BUS power supply
- Stop watch ..... **CHECKED**
- Access lighting ..... **CHECKED**
- Emergency lighting ..... **CHECKED**

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

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

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

**22 - Landing gear control ..... DN**

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

24 - Voltage ..... **CHECK**
- BAT ..... **> 25 Volts**
- GPU ..... **≃ 28 Volts**

25 - EXT LIGHTS panel
- "LTS TEST" push button ..... **PRESS**
  **(3 green lamps "L.LDG / TAXI / R.LDG" ON)**
- "L.LDG / TAXI / R.LDG" switches ..... **ON**
  **(3 green lamps ON)**
- "L.LDG / TAXI / R.LDG" switches ..... **OFF**

26 - Fuel gages
- Operation / quantity ..... **CHECK**

27 - ADVISORY PANEL
- Test 1 ..... **ALL WARNING LIGHTS ON**
- Test 2 ..... **ALL WARNING LIGHTS ON**

28 - Oxygen emergency

system ..... **WARNING LIGHT** **OXYGEN** **OFF**

29 - INT LIGHTS panel ..... **CHECK**

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

30 - ECS panel
- "LT TEST" push button ..... **PRESS**
**(amber indicator light ON)**

31 - Flaps ..... **LDG**

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

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

**WARNING LIGHT** | **PITOT 1** | **OFF**

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

**WARNING LIGHTS** | **PITOT 2** | **OFF**
**STALL HTR**

"PITOT 1 HTR" switch ..... **OFF**
"PITOT 2 & STALL HTR" switch ..... **OFF**

35 - DE ICE SYSTEM panel
- "LTS TEST" push button ..... **PRESS**
**(All green lights ON)**

**WARNING**

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

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

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

37 - Reentering the airplane
- EXT LIGHTS panel ..... **ALL SWITCHES OFF**
- DE ICE SYSTEM panel ..... **ALL SWITCHES OFF**

38 - "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 - External pitot (IAS) ..... **Condition - CHECK**

9 - Internal pitot ($V_{MO}$) ..... **Condition - CHECK**

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

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

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

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

***Fuselage forward section*** (IV)

1 - 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 :
- 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**

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

8 - Propeller and spinner ..... **CHECK**
**(No nicks, cracks or oil leaks / Attachment)**

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

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

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

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

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

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

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

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

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

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

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

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

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

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

12 - Rear R.H. karman ..... **Oxygen cylinder open**

13 - Oxygen pressure ..... **CHECK**

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

1 - ELT ..... **OFF**

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

3 - Ventral fin ..... **CHECK**
**(Attachment condition)**

4 - Inspection door under fuselage ..... **CLOSED - CHECK**
**(Attachments)**

5 - Horizontal stabilizer
deicer boots (R.H. side) ..... **CHECK**
**(Condition / Attachments)**

6 - Elevator and trim ..... **CHECK**
**(Condition / Deflection free movement / Trim position)**

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

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

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

## CHECK-LIST PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

11 - Tail cone ..... **Condition - CHECK**

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

13 - Rear baggage compartment
- Inside ..... **CONTROLLED**
- Door ..... **CLOSED / LOCKED**

CHECK-LIST PROCEDURES

## BEFORE STARTING ENGINE

**CAUTION**

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

**CAUTION**

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

1 - Preflight inspection ..... **COMPLETED**

2 - Cabin access door ..... **CLOSED / LOCKED**

3 - "Pilot" door (if installed) ..... **CLOSED / LOCKED**

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

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

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

7 - Seats
- Pilot ..... **ADJUSTED**
- R.H. front station ..... **If not occupied by a second pilot : adjust seat so as not to hinder full travel of flight controls**

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

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

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

## CHECK-LIST PROCEDURES

BEFORE STARTING ENGINE (Cont'd)

11 - "OXYGEN" switch ..... **ON**

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

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

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

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

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

17 - Landing gear control ..... **DN**

18 - "RADIO MASTER" switch ..... **ON**

19 - RADIO VHF1 ..... **ON - ADJUSTED**

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

21 - ETM
- Fuel remaining ..... **Check**
- Added fuel ..... **Insert**
- Fuel flow page ..... **Select**

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

23 - "BAT TEMP TEST" push-button
(Cadmium-Nickel battery, if installed) ..... **PRESS**

24 - Passengers briefing ..... **AS REQUIRED**

25 - Access door and

(if installed) "pilot" door **WARNING LIGHT** **DOOR** **OFF**

## CHECK-LIST PROCEDURES

BEFORE STARTING ENGINE (Cont'd)

26 - Fuel
- Gages ..... **CHECKED**
- Tank selector ..... **L or R - CHECKED**
- "FUEL SEL" switch ..... **AUTO**

| WARNING LIGHT | AUTO SEL | OFF |
|---|---|---|

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

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

27 - ETM fuel flowmeter totalizer ..... **CHECKED - ADJUSTED**

28 - Engine instruments ..... **CHECK**

29 - ITT TEST ..... **CARRY OUT**

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

31 - 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

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

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

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

**3 - Landing gear control ..... DN**

4 - ELECTRIC POWER panel
- "SOURCE" selector ..... **BAT**
- Voltage ..... **CHECKED**
  **> 25 Volts**

5 - 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 (Cont'd)

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

**WARNING LIGHT** — **AUX BP ON** — **ON**

**WARNING LIGHT** — **FUEL PRESS** — **OFF**

- Fuel pressure indicator ..... **Green sector**

7 - Propeller ..... **AREA CLEAR**

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

**WARNING LIGHTS** — **STARTER** — **FLASHING**

**WARNING LIGHTS** — **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 : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
- Ng
- Oil pressure .... **WARNING LIGHT** — **OIL PRESS** — **OFF**

## CHECK-LIST PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (Cont'd)

**CAUTION**

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

### INTERRUPT STARTING PROCEDURE :

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

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

**Wait ITT < 800°C, then :**

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

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

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

**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 (Cont'd)

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

WARNING LIGHTS — STARTER — **FLASHING**
WARNING LIGHTS — IGNITION — **ON**

Ng ≃ 13 %

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

Monitor increase of :
- ITT ..... **(max. ITT : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
- Ng
- Oil pressure ..... WARNING LIGHT — OIL PRESS — **OFF**

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

WARNING LIGHTS — STARTER — **OFF**
WARNING LIGHTS — IGNITION — **OFF**

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

*NOTE :*
*This behaviour should only be observed with outside low temperature (IOAT < 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 (Cont'd)

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

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

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

| | | | |
|---|---|---|---|
| | **WARNING LIGHT** | **AUX BP ON** | **OFF** |

12 - Generator ..... | **WARNING LIGHT** | **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 - GPU ..... **CONNECTED**

2 - "SOURCE" selector ..... **GPU**

| | | |
|---|---|---|
| **WARNING LIGHT** | **GPU** | **ON** |
| **WARNING LIGHT** | **BAT OFF** | **ON** |

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

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

**CAUTION**

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

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

## CHECK-LIST PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

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

| | | |
|---|---|---|
| **WARNING LIGHTS** | **AUX BP ON** | **ON** |
| | **FUEL PRESS** | **OFF** |

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

5 - Propeller ..... **AREA CLEAR**

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

| | | |
|---|---|---|
| **WARNING LIGHTS** | **STARTER** | **FLASHING** |
| | **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 : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
- Ng
- Oil pressure .... **WARNING LIGHT** **OIL PRESS** **OFF**

## CHECK-LIST PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

**CAUTION**

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

### INTERRUPT STARTING PROCEDURE :

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

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

**Wait ITT < 800°C, then :**

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

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

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

**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) (Cont'd)

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

WARNING LIGHTS — STARTER — **FLASHING**
WARNING LIGHTS — IGNITION — **ON**

Ng ≃ 13 %

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

Monitor increase of :
- ITT ..... **(max. ITT : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
- Ng
- Oil pressure ..... WARNING LIGHT — OIL PRESS — OFF

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

WARNING LIGHTS — STARTER — OFF
WARNING LIGHTS — IGNITION — OFF

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

*NOTE :*
*This behaviour should only be observed with outside low temperature (IOAT < 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) (Cont'd)

7 - "SOURCE" selector ..... **BAT**

**WARNING LIGHT** **BAT OFF** **OFF**

8 - Propeller governor lever ..... **FEATHER**

9 - GPU ..... **HAVE IT DISCONNECTED**

**WARNING LIGHT** **GPU** **OFF**

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

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

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

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

**WARNING LIGHT** **AUX BP ON** **OFF**

14 - Generator ..... **WARNING LIGHT** **MAIN GEN** **OFF**

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

CHECK-LIST PROCEDURES

# MOTORING

**CAUTION**

**AFTER ANY STARTING INTERRUPT PROCEDURE :**

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

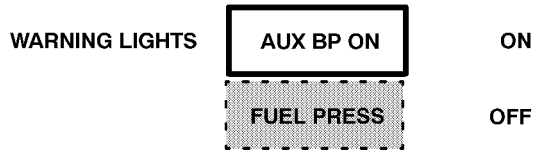
1 - Engine controls
- "MAN OVRD" control ..... **OFF (Notched)**

**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**



## CHECK-LIST PROCEDURES

MOTORING (Cont'd)

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

| | | |
|---|---|---|
| **WARNING LIGHT** | **IGNITION** | **OFF** |

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

| | | |
|---|---|---|
| **WARNING LIGHT** | **STARTER** | **FLASHING** |

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

| | | |
|---|---|---|
| **WARNING LIGHT** | **STARTER** | **OFF** |

6 - FUEL panel
- "AUX BP" switch ..... **OFF**

| | | |
|---|---|---|
| **WARNING LIGHTS** | **AUX BP ON** | **OFF** |
| | **FUEL PRESS** | **ON** |

CHECK-LIST PROCEDURES

## MOTORING FOLLOWED BY AN ENGINE START

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

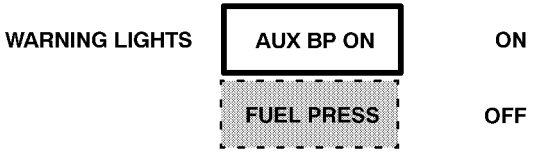
1 - Engine controls
- "MAN OVRD" control ..... **OFF (Notched)**

**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**




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

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

## CHECK-LIST PROCEDURES

MOTORING FOLLOWED BY AN ENGINE START (Cont'd)

5 - After 15 seconds :
- "IGNITION" switch ..... **AUTO**
- Ng ..... **Check at 13 % minimum**
- 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 LIGHT** OIL PRESS **OFF**

Ng ≃ 50 % stable
- "STARTER" switch ..... **OFF**

**WARNING LIGHTS** STARTER / 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 LIGHT** AUX BP ON **OFF**

11 - Generator ..... **WARNING LIGHT** MAIN GEN **OFF**

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

CHECK-LIST PROCEDURES

## AFTER STARTING ENGINE

1 - GYRO INST panel
- All switches ..... **ON**

Pull on the caging knobs when starting the ADI(s).

2 - Gyroscopic suction gage indicator ..... **GREEN SECTOR**

**WARNING LIGHT** **VACUUM LO** **OFF**

3 - GYRO SLAVING selector ..... **SLAVE**

4 - DE ICE SYSTEM panel
- "PROP DE ICE" switch ..... **ON**

**Check illumination of the green light located above the switch**

- "PROP DE ICE" switch ..... **OFF**
- "L.WINDSHIELD" switch ..... **ON**
- "R.WINDSHIELD" switch ..... **ON**

**Check illumination of the green light located above the switch (except if hot conditions)**

- "L.WINDSHIELD" switch ..... **OFF**
- "R.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 LIGHT** **INERT SEP** **ON**

**after 30 seconds**

## CHECK-LIST PROCEDURES

AFTER STARTING ENGINE (Cont'd)

5 - "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"

6 - Flaps ..... **UP**

7 - ECS panel
- "BLEED" switch ..... **ON**
- "FAN FLOW" switch ..... **As required**
- "AIR COND" switch ..... **ON**
- "CABIN TEMP/°C" selector ..... **ADJUST**
- "AIR FLOW" distributor ..... **AS REQUIRED**

Cabin altitude selector ..... **Airfield altitude - 500 feet**
Cabin rate selector ..... **ARROW UPWARDS (at the halfway post)**

8 - "RADIO MASTER" switch ..... **ON**
- VHF/VOR/GPS/TAS/ EGPWS/WX means (if installed) .... **ADJUSTED - TESTED**

9 - "EFIS MASTER" switch ..... **ON**
- "TEST / CMPST" button ..... **PRESS**
- "TST / REF" button ..... **PRESS at least 3 seconds**

10 - "AP / TRIMS MASTER" switch ..... **ON**
- Preflight test button ..... **PRESS**
- "AP / TRIMS MASTER" operation ..... **CHECK**
- Pitch trim ..... **UP / DN, then ADJUSTED**
- Yaw trim ..... **L / R, then ADJUSTED**
- Roll trim ..... **L / R, then ADJUSTED**

CHECK-LIST PROCEDURES

## TAXIING

1 - "TAXI" light ..... **ON**

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

**CHECK WARNING LIGHT** | **INERT SEP** | **ON**

3 - Passenger briefing ..... **AS REQUIRED**

4 - Parking brake ..... **RELEASED**

**WARNING LIGHT** | **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 - Advisory panel ..... **CHECK**

CHECK-LIST PROCEDURES

## BEFORE TAKEOFF

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

**WARNING LIGHT** | **PARK BRAKE** | **ON**

2 - Condition lever ..... **HI / IDLE**
**[Ng : 68 % (± 2 %)]**

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

4 - Fuel
- Gages ..... **CHECK (Quantity / Symmetry)**
- "FUEL SEL" ..... **CHECK AUTO**
- "AUX BP" ..... **CHECK AUTO**

5 - Flaps ..... **TO**

6 - 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 LIGHT** | **INERT SEP** | **OFF**

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

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

**WARNING LIGHT** | **INERT SEP** | **ON**

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

## CHECK-LIST PROCEDURES

BEFORE TAKEOFF (Cont'd)

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

7 - Advisory panel ..... **CHECK**
**All warning lights OFF,**
**except** PARK BRAKE **ON**
**and, if used** INERT SEP **ON**

8 - Electronic equipment / Flight instruments / Radar ..... **CHECK / ADJUST**

9 - Engine instruments ..... **CHECK**

10 - Pilot's / Passengers' belts ..... **CHECK**

11 - Flight controls ..... **DEFLECTIONS CHECKED**

12 - Trims
- Pitch ..... **ADJUSTED**
- Yaw ..... **ADJUSTED**
- Roll ..... **ADJUSTED**

13 - Parking brake ..... **RELEASED**
**WARNING LIGHT** PARK BRAKE **OFF**

14 - "STROBE" switch ..... **ON**

**CAUTION**

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

CHECK-LIST PROCEDURES

# TAKEOFF

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 - Heading - HSI - Stand-by compass ..... **CHECK**
- Altimeter setting ..... **CHECK**

2 - Horizon ..... **Attitude + 2° - CHECK**

3 - Lights
- "L.LDG / TAXI / R.LDG" ..... **ON**

4 - Engine instruments ..... **CHECK**
**(ITT = green sector)**

5 - Advisory panel ..... **CHECK**
**All warning lights OFF,**
**except** [INERT SEP] **if used**
**except** [IGNITION] **if used**

6 - Radar switch ..... **As required**

7 - PROP O' SPEED GOVERNOR TEST
- Increase power until propeller RPM reaches 1900 RPM
- PROP O' SPEED ..... **TEST : Maintain engaged**
- Observe that propeller RPM decreases of 50 to 150 RPM
- PROP O' SPEED ..... **TEST : Release**
- Check that propeller RPM increases again up to 1900 RPM

## CHECK-LIST PROCEDURES

TAKEOFF (Cont'd)

8 - Brakes ..... **RELEASED**

9 - Power lever ..... **TRQ = 100 %**

10 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**
- Normal takeoff ..... **ATTITUDE : 7°5**
- Short takeoff ..... **ATTITUDE : 15°**

11 - Vertical speed indicator ..... **POSITIVE**

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

13 - Landing gear control ..... (IAS < 128 KIAS) ..... **UP**
**At sequence end, check : All warning lights OFF**

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

15 - Initial climb speed ..... **110 KIAS**

16 - Flaps ..... **UP**

17 - Climb speed (recommended) ..... **130 KIAS**

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

CHECK-LIST PROCEDURES

## IN-FLIGHT AVAILABLE OXYGEN QUANTITY

Oxygen pressure ..... **Read**

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

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

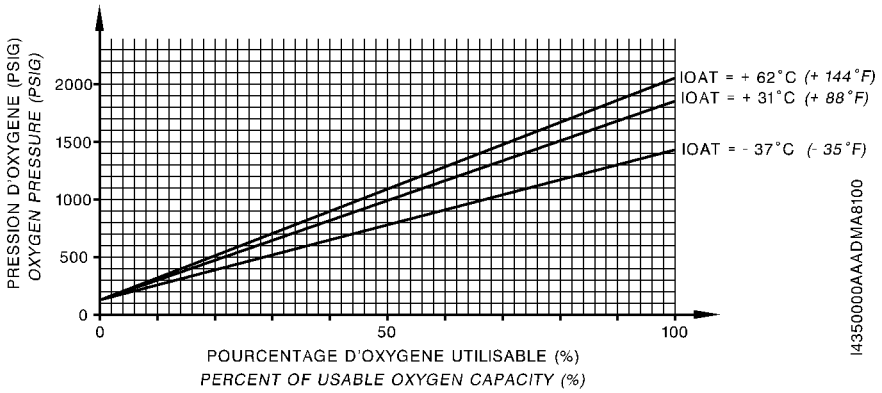



Figure 4.3.2

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 passen-gers | 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

## CLIMB

1 - Power lever ..... **ADJUST according to engine operation table - Chapter 5.7**

**CAUTION**

**OBSERVE TRQ / Ng / Np / ITT / T°**
**AND OIL PRESSURE LIMITATIONS**
**(Refer to tables in Chapter 5.7)**

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

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

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

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

**CAUTION**

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

CHECK-LIST PROCEDURES

## CRUISE

1 - Power lever . . . . . **ADJUST according to engine operation table - Chapter 5.7**

**CAUTION**

**OBSERVE TRQ / Ng / Np / ITT / T°**
**AND OIL PRESSURE LIMITATIONS**
**(Refer to tables in Chapter 5.7)**

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

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

**REGULARLY CHECK :**
- **consumption**
- **tank automatic change (every 10 minutes)**
- **symmetry [max. dissymmetry 25 us gal (95 Litres)]**

4 - ETM
When the cruise parameters are fully established :
RECORD . . . . . **Push**

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

## DESCENT

1 - Altimeter settings ..... **COMPLETE**

2 - ECS panel
- Cabin altitude selector ..... **Airfield altitude + 500 feet**
- Cabin rate selector ..... **Adjusted**

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

**CAUTION**

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

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

5 - Fuel
- Gages ..... **CHECK**
**(Quantity / Symmetry)**

6 - Passengers briefing ..... **As required**

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

CHECK-LIST PROCEDURES

## BEFORE LANDING

***Long final***

1 - Altimeters ..... **CHECK**

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

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

4 - Propeller lever ..... **MAX RPM**

5 - Landing gear control ..... (IAS ≤ 178 KIAS) ..... **DN**
- Green warning lights ..... **ON**

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

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

8 - Autopilot ..... **OFF**

9 - Radar switch ..... **SBY**

***Short final***

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

11 - Approach speed (Flaps LDG) ..... **80 KIAS**

12 - "YAW DAMPER" push-button ..... **OFF**

CHECK-LIST PROCEDURES

## LANDING

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

***After wheel touch***

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

**CAUTION**

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

**CAUTION**

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

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

CHECK-LIST PROCEDURES

## GO-AROUND

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

2 - Flaps ..... **TO**

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

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

*If IAS is at or above 110 KIAS :*

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

5 - Climb speed ..... **AS REQUIRED**

CHECK-LIST PROCEDURES

## TOUCH AND GO

***After wheel touch***

1 - Flaps ..... **TO**

2 - Elevator trim ..... **Green sector**

3 - Power lever ..... **Display TRQ = 100 %**

4 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**
- Normal takeoff ..... **ATTITUDE : 7°5**
- Short takeoff ..... **ATTITUDE : 15°**

## 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**
- "L.WINDSHIELD" switch ..... **As required**
- "R.WINDSHIELD" switch ..... **As required**
- "PITOT 1 HTR" switch ..... **OFF**
- "PITOT 2 & STALL HTR" switch ..... **OFF**

2 - Radar switch ..... **CHECKED SBY**

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

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

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

6 - "STROBE" switch ..... **OFF**

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

CHECK-LIST PROCEDURES

## SHUT-DOWN

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

**WARNING LIGHT** | **PARK BRAKE** | **ON**

2 - "TAXI" light ..... **OFF**

3 - Pressurization
- "BLEED" switch ..... **OFF**
- Check for cabin depressurization

4 - "FAN FLOW" switch ..... **As required**

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

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

7 - GYRO INST panel
- All switches ..... **OFF**

8 - "EFIS MASTER" switch ..... **OFF**

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

10 - "RADIO MASTER" switch ..... **OFF**

11 - Propeller governor lever ..... **FEATHER**

12 - Condition lever ..... **CUT OFF**

**CAUTION**

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

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

## CHECK-LIST PROCEDURES

SHUT-DOWN (Cont'd)

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

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

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

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

17 - "GENERATOR" selector ..... **MAIN**

18 - "SOURCE" selector ..... **OFF**

# 4.4 - AMPLIFIED PROCEDURES

## PREFLIGHT INSPECTION

### A - INSIDE INSPECTIONS

***Cockpit*** (I)

- CRASH lever ..... **UP**

1 - ELECTRIC POWER panel
- "SOURCE" selector ..... **OFF**
- "GENERATOR" selector ..... **MAIN**

2 - 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).

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

4 - GYRO INST panel
- All switches ..... **OFF**

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

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

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

## AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

8 - Landing gear emergency control
Open door of emergency landing gear compartment.
- Lever ..... **PULLED DOWN**
- By-pass selector ..... **PUSHED**
- Door ..... **IN PLACE**

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

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

10 - "RADIO MASTER" switch ..... **OFF**

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

12 - RAM AIR control ..... **PUSHED**

13 - Fuel
- "FUEL SEL" selector ..... **MAN**
- "AUX BP" switch ..... **OFF**
- Tank selector ..... **L or R**

14 - ELT ..... **ARM**

15 - 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.

16 - Flight controls ..... **Deflections checked**

17 - Parking brake ..... **SET**

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

## AMPLIFIED PROCEDURES



**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**

19 - BAT BUS power supply
- Stop watch ..... **CHECKED**
- Access lighting ..... **CHECKED**
- Emergency lighting ..... **CHECKED**

This check allows to ensure that the fuse of the "BAT BUS" operates correctly.

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

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

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

**22 - Landing gear control ..... DN**

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

## AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

24 - Voltage . . . . . **CHECK**
- BAT . . . . . **> 25 Volts**

  If not, use a GPU or charge battery. This minimum voltage is not an absolute guarantee for a correctly charged battery, particularly with a cadmium nickel technology. It is recommended to use a GPU in cold weather, when airplane has been stopped more than 3 hours at a temperature below - 10°C (+14°F).
- GPU . . . . . **≃ 28 Volts**

  If using a GPU, ensure that it provides a 28-volt regulated voltage, with negative on earth, as well as it supplies 800 amperes minimum and 1400 amperes maximum. See placard located near ground power receptacle door.

25 - EXT LIGHTS panel
- "LTS TEST" push button . . . . . **PRESS**
  **(3 green lamps "L.LDG / TAXI / R.LDG" ON)**
- "L.LDG / TAXI / R.LDG" switches . . . . . **ON**
  **(3 green lamps ON)**

  An outside inspection is not necessary ; the illuminated three green lamps located on switches prove the correct operation of the three landing lights.
- "L.LDG / TAXI / R.LDG" switches . . . . . **OFF**

26 - Fuel gages
- Operation / quantity . . . . . **CHECK**

27 - ADVISORY PANEL
- Test 1 . . . . . **ALL WARNING LIGHTS ON**
- Test 2 . . . . . **ALL WARNING LIGHTS ON**

  "Test 1" and "2" correspond to BUS bars 1 or 2, which feed them respectively.

## AMPLIFIED PROCEDURES



28 - Oxygen emergency system ..... **WARNING LIGHT** **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.

29 - INT LIGHTS panel ..... **CHECK**

30 - ECS panel
- "LT TEST" push button ..... **PRESS**
**(amber indicator light ON)**

31 - Flaps ..... **LDG**

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

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

**WARNING LIGHT** **PITOT 1** **OFF**

Correct operation of pitot (PITOT 1 and 2) tube heating elements and of stall aural warning system (STALL HTR) is indicated by extinction of corresponding lights on the advisory panel, when control switches are ON.

## AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

**WARNING LIGHTS** **PITOT 2** **OFF**

**STALL HTR**

- "PITOT 1 HTR" switch ..... **OFF**
- "PITOT 2 & STALL HTR" switch ..... **OFF**

35 - DE ICE SYSTEM panel
- "LTS TEST" push button ..... **PRESS**
**(All green lights ON)**

**WARNING**

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

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

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

37 - Reentering the airplane
- EXT LIGHTS panel ..... **ALL SWITCHES OFF**
- DE ICE SYSTEM panel ..... **ALL SWITCHES OFF**

38 - "SOURCE" selector ..... **OFF**

## AMPLIFIED PROCEDURES



***Cabin*** (II)

1 - Cabin fire extinguisher ..... **CHECK**
**(Pressure / Attachment)**
The fire extinguisher is provided with a pressure gage.

2 - Seats / belts ..... **CHECK**

3 - Windows ..... **CHECK**
**(General condition / No cracks)**

4 - Emergency exit ..... **CLOSED / LOCKED**
- Anti-theft safety ..... **REMOVE / STOW**

5 - Baggage compartment ..... **STRAPS IN PLACE**

6 - Partition net ..... **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 - External pitot (IAS) ..... **Condition - CHECK**

9 - Internal pitot ($V_{MO}$) ..... **Condition - CHECK**

10 - Wing lower surface ..... **CHECK**
- Check fuel tank access doors for leaks
- Check for surface damage.

11 - Wing deicer boots ..... **CHECK (Condition / Attachment)**
Care must be taken when refuelling the airplane to avoid damaging the wing deicer boots. A protective apron should be used if possible.

## AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

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

A long term storage of the airplane causes water accumulation in fuel, which absorbs additive. This phenomenon occurs when an excessive quantity of water accumulates in fuel tank sumps. Refer to Section 8 for servicing operations relative to fuel additives.

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

If airplane has been used from muddy airfields or in snow, check wheel wells to make sure they are clean and not obstructed.

Check frequently all landing gear retraction mechanism components, shock-absorbers, tires and brakes. This is particularly important for airplanes used from hilly fields.

Improperly serviced or worn shock-absorbers may result in excessive loads being transmitted to the airplane structure during ground operations. Without passengers and baggages on board, the unpainted surface of the main gear shock absorber tube must be visible about :

- 55 mm (2.17 in.) of minimum height with half tank,
- 40 mm (1.57 in.) of minimum height with full tanks.

## AMPLIFIED PROCEDURES



### *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)**
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 :
- Engine oil level ..... **CHECK**
- Fuel pipes ..... **CHECK**
**(No leak, deterioration, wear)**

6 - Engine cowls ..... **Condition - CHECK**
**CLOSED / LOCKED**

## AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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).

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)**

## AMPLIFIED PROCEDURES



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

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

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

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

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

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

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

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

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

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

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

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

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

12 - Rear R.H. karman ..... **Oxygen cylinder open**

13 - 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**
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)**

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

## AMPLIFIED PROCEDURES

PREFLIGHT INSPECTION (Cont'd)

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

11 - Tail cone ..... **Condition - CHECK**

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

13 - Rear baggage compartment
- Inside ..... **CONTROLLED**
- Door ..... **CLOSED / LOCKED**

AMPLIFIED PROCEDURES

## BEFORE STARTING ENGINE

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 "ON" MAY CAUSE OVERTEMPERATURE OR ABNORMAL ACCELERATION AT START**

**CAUTION**

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

1 - Preflight inspection ..... **COMPLETED**

2 - Cabin access door ..... **CLOSED / LOCKED**

3 - "Pilot" door (if installed) ..... **CLOSED / LOCKED**

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

5 - Parking brake ..... **SET**
"PARK BRAKE" warning light located on advisory panel 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**

7 - Seats
- Pilot ..... **ADJUSTED**
- R.H. front station ..... **If not occupied by a second pilot : adjust seat so as not to hinder full travel of flight controls**

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.

## AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (Cont'd)

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

11 - "OXYGEN" switch ..... **ON**

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

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

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

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

16 - "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.

17 - Landing gear control ..... **DN**

18 - "RADIO MASTER" switch ..... **ON**

19 - RADIO VHF1 ..... **ON / ADJUSTED**
An electric relay automatically cuts off radio equipment during starter operation.
The function "GND CLR" (ground clearance) enables, when "RADIO MASTER" switch is ON, to obtain VHF1 supply without having selected battery contact.

## AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (Cont'd)

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

21 - ETM
- Fuel remaining ..... **Check**
- Added fuel ..... **Insert**
- Fuel flow page ..... **Select**

The "SHADIN" ETM operation normal procedures are described in the Operation Manual, at the latest revision.

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

23 - "BAT TEMP TEST" push-button
(if installed - with a Cadmium-Nickel battery) ..... **PRESS**
Check illumination of the "BAT OVHT" warning light on the advisory panel, check increase of the temperature indicated on the battery temperature indicator.

24 - Passengers briefing ..... **AS REQUIRED**

25 - Access door and

(if installed) "pilot" door **WARNING LIGHT** **DOOR** **OFF**

If "DOOR" warning light 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" warning light ON on the advisory panel.

26 - Fuel
- Gages ..... **CHECKED**
- Tank selector ..... **L or R - CHECKED**
- "FUEL SEL" switch ..... **AUTO**

**WARNING LIGHT** **AUTO SEL** **OFF**

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

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

## AMPLIFIED PROCEDURES

BEFORE STARTING ENGINE (Cont'd)

27 - ETM fuel flowmeter totalizer ..... **CHECKED - ADJUSTED**
Total fuel quantity on board may be set on flowmeter totalizer - see instruction in Section 7.

28 - Engine instruments ..... **CHECK**

29 - ITT TEST ..... **CARRY OUT**
Check 1888 number appearance in digital readout window, as well as ITT red warning light illumination on advisory panel.

30 - EXT LIGHTS panel
- "STROBE" ..... **AS REQUIRED**
The use of strobe lights may generate discomfort to personnel on ground, particularly by night.

31 - 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 "RADIO MASTER" switch to ON. A correct operation is provided by the "GND CLR" green light illuminating above the "RADIO MASTER" switch. If battery voltage is low (near 25 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

**CAUTION**

**BEFORE SELECTING SOURCE, CHECK :**

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

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

**3 - Landing gear control ..... DN**

4 - ELECTRIC POWER panel
- "SOURCE" selector ..... **BAT**
- Mains voltage ..... **CHECKED > 25 Volts**

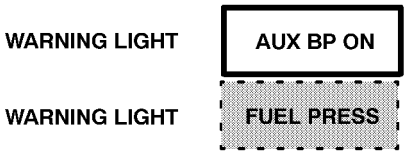
5 - Engine controls
- "MAN OVRD" control ..... **OFF (Notched)**

**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**

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



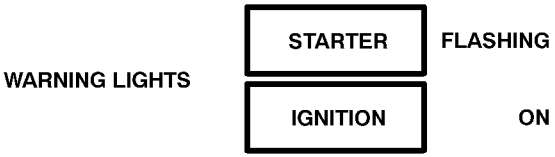

- Fuel pressure indicator ..... **Green sector**

## AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (Cont'd)

7 - Propeller ..... **AREA CLEAR**

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

Monitor increase of :
- ITT ..... **(max. ITT : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
  The absolute limit read on the indicator is 1090°C during the starting sequence (red triangle). However, the ITT limits during the starting sequence are :
  . 870°C for 20 seconds max.
  . 1000°C for 5 seconds max.

In case of 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.

## AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (Cont'd)

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 800 °C to 870 °C limited to 20 seconds,*

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

**CAUTION**

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

**INTERRUPT STARTING PROCEDURE :**

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

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

## AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (Cont'd)

**Wait ITT < 800°C, then :**

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

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

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

- Ng
  The start sequence must be timed to ensure starter limits are not exceeded. Lengthy operation of the starter results in excessive temperature of the engine :
  - If Ng does not reach 30 % within 30 seconds, after the starter is selected ON, abort the start.
  - If Ng does not reach 50 % within 1 minute, abort the start.
  - Before starting a new test, respect delays indicated in Chapter 2.4 "STARTER OPERATION LIMITS".
- Oil pressure .... **WARNING LIGHT** 

**OFF**

**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**

## AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (Cont'd)

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

**WARNING LIGHTS** — **STARTER** — **FLASHING**
**IGNITION** — **ON**

Ng ≃ 13 %

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

Monitor increase of :
- ITT ..... **(max. ITT : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
- Ng
- Oil pressure ..... **WARNING LIGHT** — **OIL PRESS** — **OFF**

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

**WARNING LIGHTS** — **STARTER** — **OFF**
**IGNITION**

## AMPLIFIED PROCEDURES

STARTING ENGINE USING AIRPLANE POWER (Cont'd)

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

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

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

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

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

11 - FUEL panel
- "AUX BP" switch ..... **AUTO**
At this time, observing a drop in the fuel pressure is normal.

| | | | |
|---|---|---|---|
| **WARNING LIGHT** | **AUX BP ON** | **OFF** |

12 - Generator ..... **WARNING LIGHT**

| | | |
|---|---|---|
| **MAIN GEN** | **OFF** |

**RESET if necessary**

"MAIN GEN" warning light normally goes out, as soon as "STARTER" warning light goes out.
If not, increase Ng over 70 % to start main generator.
- Ammeter ..... **CHARGE CHECKED**
- Voltmeter ..... **VOLTAGE CHECKED**
**(V ≃ 28 Volts)**

AMPLIFIED PROCEDURES

## STARTING ENGINE USING EXTERNAL POWER (GPU)

Before connecting GPU, check that its indicated voltage is correct.

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

2 - "SOURCE" selector ..... **GPU**

**WARNING LIGHT** | **GPU** | **ON**

**WARNING LIGHT** | **BAT OFF** | **ON**

- Voltmeter ..... **VOLTAGE CHECKED (V ≃ 28 Volts)**

  If voltage is ≥ 30 volts, immediately turn "SOURCE" selector to OFF. Radio navigation equipment may be damaged before main fuse failure.

3 - Engine controls

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

**CAUTION**

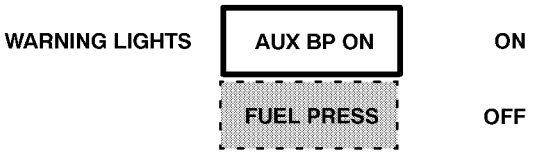
**WHEN THE ENGINE IS SHUTDOWN, THE POWER LEVER MUST NOT BE MOVED BEHIND THE FLIGHT IDLE POSITION**

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

## AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

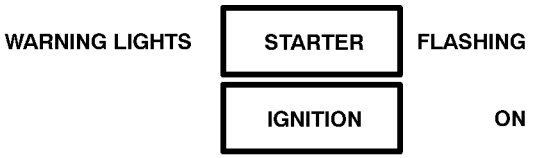
4 - FUEL panel
- "AUX BP" switch ..... **ON**




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

5 - Propeller ..... **AREA CLEAR**

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




*NOTE :*
*The use of the starter is limited. Refer to 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 EXTERNAL POWER (GPU) (Cont'd)

Monitor increase of :

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

  The absolute limit read on the indicator is 1090°C during the starting sequence (red triangle). However, the ITT limits during the starting sequence are :

  . 870°C for 20 seconds max.
  . 1000°C for 5 seconds max.

In case of 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 800 °C to 870 °C limited to 20 seconds,*
- *ITT from 870 °C to 1000 °C limited to 5 seconds.*

## AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

**CAUTION**

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

**INTERRUPT STARTING PROCEDURE :**

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

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

**Wait ITT < 800°C, then :**

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

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

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

- Ng
  The start sequence must be timed to ensure starter limits are not exceeded. Lengthy operation of the starter results in excessive temperature of the engine :
  - If Ng does not reach 30 % within 30 seconds, after the starter is selected ON, abort the start.
  - If Ng does not reach 50 % within 1 minute, abort the start.
  - Before starting a new test, respect delays indicated in Chapter 2.4 "STARTER OPERATION LIMITS".
- Oil pressure .... **WARNING LIGHT** **OIL PRESS** **OFF**

## AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

**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 LIGHTS** | **STARTER** | **FLASHING**
**IGNITION** | **ON**

Ng $\simeq$ 13 %

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

Monitor increase of :
- ITT ..... **(max. ITT : 870°C for 20 seconds max. 1000°C for 5 seconds max.)**
- Ng
- Oil pressure ..... **WARNING LIGHT** **OIL PRESS** **OFF**

## AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

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

WARNING LIGHTS — STARTER — OFF
WARNING LIGHTS — IGNITION — OFF

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

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

**CONTINUE WITH NORMAL PROCEDURE HEREAFTER**

7 - "SOURCE" selector ..... **BAT**

WARNING LIGHT — BAT OFF — OFF

8 - Propeller governor lever ..... **FEATHER**
This reduces propeller blast on the person disconnecting the GPU.

9 - GPU ..... **HAVE IT DISCONNECTED**

WARNING LIGHT — GPU — OFF

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

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

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

## AMPLIFIED PROCEDURES

STARTING ENGINE USING EXTERNAL POWER (GPU) (Cont'd)

12 - Engine instruments ..... **CHECK : Ng ≃ 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 LIGHT** — **AUX BP ON** — **OFF**

14 - Generator ..... **WARNING LIGHT** — **MAIN GEN** — **OFF**

**RESET if necessary**

"MAIN GEN" warning light normally goes out, as soon as "STARTER" warning light goes out.

If not, increase Ng over 70 % to start main generator.
- Ammeter ..... **CHARGE CHECKED**
- Voltmeter ..... **VOLTAGE CHECKED**
**(V ≃ 28 Volts)**

AMPLIFIED PROCEDURES

## MOTORING

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.

**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 (Cont'd)

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

| | | |
|---|---|---|
| **WARNING LIGHTS** | **AUX BP ON** | **ON** |
| | **FUEL PRESS** | **OFF** |

Fuel pressure is necessary for lubrication of HP pump.

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

| | | |
|---|---|---|
| **WARNING LIGHT** | **IGNITION** | **OFF** |

4 - "STARTER" switch ..... **ON**
**for 15 sec maxi**

| | | |
|---|---|---|
| **WARNING LIGHT** | **STARTER** | **FLASHING** |

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 LIGHT** | **STARTER** | **OFF** |

6 - FUEL panel
- "AUX BP" switch ..... **OFF**

| | | |
|---|---|---|
| **WARNING LIGHTS** | **AUX BP ON** | **OFF** |
| | **FUEL PRESS** | **ON** |

AMPLIFIED PROCEDURES

# MOTORING FOLLOWED BY AN ENGINE START

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.

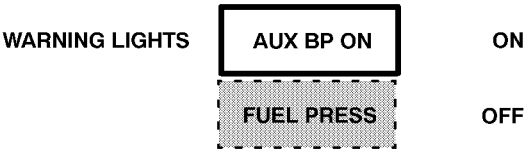
1 - Engine controls
- "MAN OVRD" control ..... **OFF (Notched)**

**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**




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

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

## AMPLIFIED PROCEDURES

MOTORING FOLLOWED BY AN ENGINE START (Cont'd)

5 - After 15 seconds :
- "IGNITION" switch ..... **AUTO**
- Ng ..... **Check at 13 % minimum**
- 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 LIGHT** **OIL PRESS** **OFF**

*NOTE :*
*No action is required for the following conditions :*

- *ITT from 800°C to 870°C limited to 20 seconds,*
- *ITT from 870°C to 1000°C limited to 5 seconds.*

Ng ≃ 50 % stable
- "STARTER" switch ..... **OFF**

**WARNING LIGHTS** **STARTER** **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)**

## AMPLIFIED PROCEDURES

MOTORING FOLLOWED BY AN ENGINE START (Cont'd)

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

**WARNING LIGHT** **AUX BP ON** **OFF**

11 - Generator ..... **WARNING LIGHT** **MAIN GEN** **OFF**

**RESET if necessary**
- Ammeter ..... **CHARGE CHECKED**
- Voltmeter ..... **VOLTAGE CHECKED**

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

AMPLIFIED PROCEDURES

## AFTER STARTING ENGINE

1 - GYRO INST panel
- All switches ..... **ON**

Pull on the caging knobs when starting the ADI(s).

2 - Gyroscopic suction gage indicator ..... **GREEN SECTOR**

**WARNING LIGHT** **VACUUM LO** **OFF**

3 - GYRO SLAVING selector ..... **SLAVE**

4 - 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**
- "L.WINDSHIELD" switch ..... **ON**

## AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (Cont'd)

- "R.WINDSHIELD" switch ..... **ON**

**Check illumination of the green light 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).

- "L.WINDSHIELD" switch ..... **OFF**
- "R.WINDSHIELD" switch ..... **OFF**

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

Theoretically, necessary air bleed to inflate wing and empennage leading edges, as well as depression necessary to their deflation are sufficient when power lever is positioned on IDLE. However, it is advised for check to choose a Ng power ≥ 80 % in order to obtain operation design pressure, which enables illuminating surely the two green lights and avoiding "VACUUM LO" untimely alarms.

- "AIRFRAME DE ICE" switch ..... **ON**

**Visually check functioning of deicer boot during 1 total cycle and illumination of the two green lights located above the switch**

The cycle lasts 67 seconds. Check both inflation impulses, and illumination of each corresponding green light :

- the first impulse inflates the external and middle wing boots,
- the second impulse inflates the leading edge boots of empennages and inner wing.
- "AIRFRAME DE ICE" switch ..... **OFF**
- "INERT SEP" switch ..... **ON**

**WARNING LIGHT** | **INERT SEP** | **ON**

**after 30 seconds**

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

## AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (Cont'd)

5 - "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"

6 - Flaps ..... **UP**

7 - ECS panel
- "BLEED" switch ..... **ON**
- "FAN FLOW" switch ..... **As required**
- "AIR COND" switch ..... **ON**

A cabin temperature good regulation will only be obtained, if "AIR COND" switch is set to ON.
There is no inconvenience to set "AIR COND" switch to FAN ONLY before starting engine for passenger and crew comfort, provided that voltage is > 25 volts.
- "CABIN TEMP/°C" selector ..... **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 altitude selector ..... **Airfield altitude - 500 feet**
Cabin rate selector ..... **ARROW UPWARDS (at the halfway post)**

Such a selection will limit cabin rate selector at about ± 500 ft/min. If selector is turned to the right, limited values of cabin rate selector increase.

## AMPLIFIED PROCEDURES

AFTER STARTING ENGINE (Cont'd)

8 - "RADIO MASTER" switch ..... **ON**
- VHF/VOR/GPS/TAS/
EGPWS/WX means (if installed) .... **ADJUSTED - TESTED**

9 - "EFIS MASTER" switch ..... **ON**
- "TEST / CMPST" button ..... **PRESS**
- "TST / REF" button ..... **PRESS at least 3 seconds**

Detailed control procedures of EFIS system are described in Section 9 "Supplements".

10 - "AP / TRIMS MASTER" switch ..... **ON**
- Preflight test button ..... **PRESS**
- "AP / TRIMS MASTER" operation ..... **CHECK**

Detailed control procedures of autopilot and electrical pitch trim are described in Section 9 "Supplements".
- Pitch trim ..... **UP / DN, then ADJUSTED**
Adjust the indicator in green range (graduated from 12 to 37 % of center of gravity) facing corresponding center of gravity.
- Yaw trim ..... **L / R, then ADJUSTED**
Adjust the indicator in green range TO (TAKEOFF).
- Roll trim ..... **L / R, then ADJUSTED**
Adjust the indicator first at neutral position (horizontal marker).

AMPLIFIED PROCEDURES

## TAXIING

1 - "TAXI" light ..... **ON**

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

**CHECK WARNING LIGHT** | **INERT SEP** | **ON**

It is recommended that the inertial separator be used during all ground operations.

3 - Passenger briefing ..... **AS REQUIRED**

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

**WARNING LIGHT** | **PARK BRAKE** | **OFF**

5 - L.H. and R.H. seat brakes ..... **CHECKED**

6 - Nose wheel steering ..... **CHECKED**
The control wheel will 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



**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 during ground turns.

9 - Advisory panel . . . . . **CHECK**

AMPLIFIED PROCEDURES

## BEFORE TAKEOFF

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

**WARNING LIGHT** | **PARK BRAKE** | **ON**

2 - Condition lever ..... **HI / IDLE**
**[Ng : 68 % (± 2 %)]**

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

During this test, the power lever must be at flight idle. Keep the time spent with the propeller RPM in the caution (yellow) range at a minimum.

4 - Fuel
- Gages ..... **CHECK (Quantity / Symmetry)**
- "FUEL SEL" switch ..... **CHECKED AUTO**
- "AUX BP" switch ..... **CHECKED AUTO**

5 - Flaps ..... **TO**

6 - 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 LIGHT** | **INERT SEP** | **OFF**

Warning light goes out immediately, but it takes 30 seconds to retract the separator.

## AMPLIFIED PROCEDURES



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

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

**WARNING LIGHT** | **INERT SEP** | **ON**

- "L.WINDSHIELD" switch ..... **As required**
- "R.WINDSHIELD" switch ..... **As required**
- "PITOT 1 HTR" switch ..... **ON**
- "PITOT 2 & STALL HTR" switch ..... **ON**

7 - Advisory panel ..... **CHECK**
**All warning lights OFF,**

**except** | **PARK BRAKE** | **ON**

**and, if used** | **INERT SEP** | **ON**

8 - Electronic equipment /
Flight instruments / Radar ..... **CHECK / ADJUST**
On ground, maintain radar on SBY in order not to generate radiations prejudicial to outside persons.

9 - 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.

10 - Pilot's / Passengers' belts ..... **CHECK**

11 - Flight controls ..... **DEFLECTIONS CHECKED**

## AMPLIFIED PROCEDURES

BEFORE TAKEOFF (Cont'd)

12 - Trims
- Pitch ..... **ADJUSTED**
- Yaw ..... **ADJUSTED**
- Roll ..... **ADJUSTED**

13 - Parking brake ..... **RELEASED**

**WARNING LIGHT** | **PARK BRAKE** | **OFF**

14 - "STROBE" switch ..... **ON**

**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.

AMPLIFIED PROCEDURES

# TAKEOFF

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 - Heading - HSI - Stand-by compass ..... **CHECK**
The indication of the stand-by compass is disturbed when windshield(s) deice system(s) is (are) activated.
- Altimeter setting ..... **CHECK**

2 - Horizon ..... **Attitude + 2° - CHECK**
Horizon has been set so as to indicate a 2° nose up attitude, when airplane center of gravity is at a middle average.

3 - Lights
- "L.LDG / TAXI / R.LDG" ..... **ON**

4 - Engine instruments ..... **CHECK**
**(ITT = green sector)**

5 - Advisory panel ..... **CHECK**
**All warning lights OFF,**
**except** INERT SEP **if used**
**except** IGNITION **if used**

## AMPLIFIED PROCEDURES

TAKEOFF (Cont'd)

6 - Radar switch ..... **As required**

7 - PROP O' SPEED GOVERNOR TEST
- Increase power until propeller RPM reaches 1900 RPM
- PROP O' SPEED ..... **TEST : Maintain engaged**
- Observe that propeller RPM decreases of 50 to 150 RPM
- PROP O' SPEED ..... **TEST : Release**
- Check that propeller RPM increases again up to 1900 RPM

8 - 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.

9 - Power lever ..... **TRQ = 100 %**

10 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**
- Normal takeoff ..... **ATTITUDE : 7°5**
- Short takeoff ..... **ATTITUDE : 15°**

Rotation speed at takeoff, according to airplane weight, is also given in Chapter 5.8.

11 - Vertical speed indicator ..... **POSITIVE**

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

## AMPLIFIED PROCEDURES

TAKEOFF (Cont'd)

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

During the sequence :

- The red warning light flashes ; it indicates that the landing gear engine is electrically supplied. It goes off when the 3 landing gears are locked. If the red warning light is fixed ON, there is a discrepancy (refer to EMERGENCY PROCEDURES).
- It is possible that the 3 landing gear position green indicator lights flash uncertainly then go off at the end of the sequence.

**At sequence end, check : All warning lights OFF**

In practice, if preconized attitude is kept, there is no difficulty to maintain a speed < 128 KIAS until landing gear retraction is completed.

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

15 - Initial climb speed ..... **110 KIAS**

16 - Flaps ..... **UP**

17 - Climb speed (recommended) ..... **130 KIAS**

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

AMPLIFIED PROCEDURES

## IN-FLIGHT AVAILABLE OXYGEN QUANTITY

Oxygen pressure . . . . . **Read**

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

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

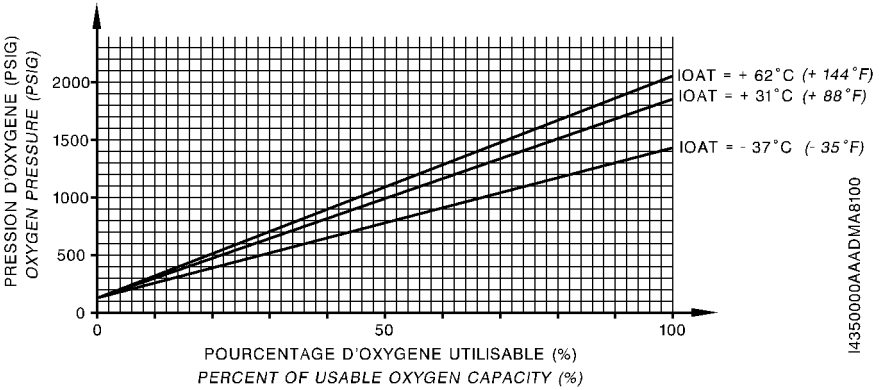



Figure 4.4.1

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 passen-gers | 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

## CLIMB

1 - Power lever . . . . . **ADJUST according to engine operation table - Chapter 5.7**

**CAUTION**

**OBSERVE TRQ / Ng / Np / ITT / T°**
**AND OIL PRESSURE LIMITATIONS**
**(Refer to tables in Chapter 5.7)**

Torque setting during climb must be adjusted according to engine operation tables in Chapter 5.7. These tables give the max. climb power torque setting (MXCL). For each engine, when torque is reduced below 100 % at high altitude according to the tables, the ITT will be approximately constant during final climb, giving a particular value of ITT. For a simplified engine operation during climb, power may be set first of all by torque, using 100 %, then, when the ITT typical value for climb is reached, by indicated ITT, using this particular value. The margin between this indicated ITT and 785°C (recommended ITT limit during continuous operation) will gradually reduce as flight time is performed.

2 - Climb speed . . . . . **AS REQUIRED**
Best climb speed is 123 KIAS. Performance tables concerning climb at 130 and 160 KIAS are given in Chapter 5.9.

## AMPLIFIED PROCEDURES

CLIMB (Cont'd)

3 - ECS panel
- Cabin altitude selector ..... **Cruise altitude + 1000 feet**
- Cabin rate selector ..... **ADJUST so as to obtain a cabin climb rate of about 500 ft/min**

  It concerns the control on triple indicator of cabin rate, as well as increasing of differential pressure and cabin altitude.
- Pressurization ..... **CHECK**
- "CABIN TEMP/°C" selector ..... **ADJUST**

  Anticipate setting to hot position during climb. Do not wait a fresh sensation to perform this setting. Desired temperature will be as longer to obtain as setting is made later.

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

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. Tolerated maximum dissymmetry is 25 us gal (95 Litres).

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

**CAUTION**

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

AMPLIFIED PROCEDURES

## CRUISE

1 - Power lever . . . . . **ADJUST according to engine operation table - Chapter 5.7**

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). However, at the time of this setting, limit permitted by torque limiter may be reached. This limit is 110 % (red line on indicator) 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.

**CAUTION**

**OBSERVE TRQ / Ng / Np / ITT / T°**
**AND OIL PRESSURE LIMITATIONS**
**(Refer to tables in Chapter 5.7)**

Engine operation tables (Chapter 5.7) give torque to be applied according to IOAT, in order not to exceed authorized maximum power.

When "INERT SEP" switch is OFF, a more accurate setting of power must then be performed according to cruise performance tables presented in Chapter 5.10.

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

## AMPLIFIED PROCEDURES

CRUISE (Cont'd)

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

**REGULARLY CHECK :**
- **consumption**
- **tank automatic change (every 10 minutes)**
- **symmetry [max. dissymmetry 25 us gal (95 Litres)]**

4 - ETM
When the cruise parameters are fully established :
RECORD ..... **Push**

The SHADIN ETM operation normal procedures are described in the Operation Manual, at the latest revision.

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

**CAUTION**

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

AMPLIFIED PROCEDURES

## DESCENT

1 - Altimeter settings ..... **COMPLETE**

2 - ECS panel
- Cabin altitude selector ..... **Airfield altitude + 500 feet**
- Cabin rate selector ..... **Adjusted**

Set first arrow upwards. This will limit cabin rate at about - 500 ft/min.

3 - 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.

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

Prior to descent in moist conditions, turn "AIR FLOW" distributor to 12 o'clock position and set WINDSHIELD switches 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".

## AMPLIFIED PROCEDURES

DESCENT (Cont'd)

5 - Fuel
- Gages ..... **CHECK**
**(Quantity / Symmetry)**

Even if dissymmetry is < 25 us gal (95 Litres), it is better at this time to choose the fullest tank.

6 - Passengers briefing ..... **As required**

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

AMPLIFIED PROCEDURES

## BEFORE LANDING

***Long final***

1 - Altimeters ..... **CHECK**

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

Maximum tolerated dissymmetry is 25 us gal (95 Litres).

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

4 - Propeller lever ..... **MAX RPM**

5 - Landing gear control ..... (IAS ≤ 178 KIAS) ..... **DN**

During the sequence :

- The red warning light flashes ; it indicates that the landing gear motor is electrically supplied. It goes off when the 3 landing gears are locked. If the red warning light is fixed ON, there is a discrepancy (refer to EMERGENCY PROCEDURES).
- It is possible that the 3 landing gear position green indicator lights flash uncertainly then come on at the end of the sequence, indicating that the landing gears are locked in down position.
- Green indicator lights ..... **ON**

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

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

## AMPLIFIED PROCEDURES

BEFORE LANDING (Cont'd)

8 - Autopilot ..... **OFF**
Autopilot must be disconnected at the latest at 200 ft above the ground or at decision height or before go-around, whichever is the highest.

9 - Radar switch ..... **SBY**

***Short final***

10 - 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.

11 - Approach speed (Flaps LDG) ..... **80 KIAS**
To ensure positive and rapid engine response to throttle movement, it is recommended that a minimum of 10 % torque be maintained on final approach until landing is assured.

12 - "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 wheel touch***

2 - Reverse ..... **As required**
(Reverse may be applied as soon as the wheels touch the ground.)
To avoid ingestion of foreign objects, come out the reverse as speed reduces and use the brakes if necessary for further deceleration.
High power reverse at low speed can throw loose material into the air, and can cause control problems and decrease the comfort of crew and passengers. If permitted by the runway length, it is better to adopt a moderate reverse.

**CAUTION**

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

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

3 - Brakes ..... **As required**
It is advised not to brake energetically, as long as speed has not reached 40 KIAS, as otherwise wheels may be locked.

AMPLIFIED PROCEDURES

## GO-AROUND

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

The airplane will tend to yaw to the left when power is applied. Right rudder pressure will be required to maintain coordinated straight flight until the rudder trim can be adjusted.

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

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

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

*If IAS is at or above 110 KIAS :*

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

5 - Climb speed ..... **AS REQUIRED**

AMPLIFIED PROCEDURES

## TOUCH AND GO

***After wheel touch***

1 - Flaps ..... **TO**
Check that flaps have well reached the TO position before increasing power. Do not increase power with full flaps, as airplane may lift off prematurely at low speed.

2 - Elevator trim ..... **Green sector**
To use elevator trim manual control is faster than to use electric control. Ensure that runway length is sufficient to complete this sequence.

3 - Power lever ..... **Display TRQ = 100 %**

4 - Takeoff ..... **ROTATION : See "Takeoff distances" Chapter 5.8**
- Normal takeoff ..... **ATTITUDE : 7°5**
- Short takeoff ..... **ATTITUDE : 15°**

Rotation speed at takeoff, according to airplane weight, is also given in Chapter 5.8.
However, the pilot's operating handbook does not supply distances concerning touch and go. These distances are let to pilot's initiative.

AMPLIFIED PROCEDURES

## AFTER LANDING

RUNWAY CLEAR - AIRPLANE STOPPED

1 - DE ICE SYSTEM panel
- "AIRFRAME DE ICE" switch ..... **OFF**
- "PROP DE ICE" switch ..... **OFF**
- "INERT SEP" switch ..... **CHECKED ON**
  It is highly recommended to use inertial separator during all ground operations.
- "L.WINDSHIELD" switch ..... **As required**
- "R.WINDSHIELD" switch ..... **As required**
- "PITOT 1 HTR" switch ..... **OFF**
- "PITOT 2 & STALL HTR" switch ..... **OFF**

2 - Radar switch ..... **CHECKED SBY**
Maintain radar on SBY in order not to generate radiations prejudicial to outside persons.

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

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

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

6 - "STROBE" switch ..... **OFF**

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

AMPLIFIED PROCEDURES

## SHUT-DOWN

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

| WARNING LIGHT | PARK BRAKE | ON |
|---|---|---|

2 - "TAXI" light ..... **OFF**

3 - Pressurization
- "BLEED" switch ..... **OFF**
- Check for cabin depressurization

4 - "FAN FLOW" switch ..... **As required**

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

6 - Power lever ..... **IDLE**
After a power phase (reverse for example), let stabilize temperature at idle for 2 minutes minimum, before shutting down engine.
Wait for stable ITT.
Indeed, to position "BLEED" switch to OFF causes ITT decrease. Wait for temperature stabilization before proceeding to engine shut-down.

7 - GYRO INST panel
- All switches ..... **OFF**

8 - "EFIS MASTER" switch ..... **OFF**

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

10 - "RADIO MASTER" switch ..... **OFF**

11 - Propeller governor lever ..... **FEATHER**
Keep propeller governor lever on FEATHER position for 15 seconds minimum before shutting down engine.

## AMPLIFIED PROCEDURES

SHUT-DOWN (Cont'd)

12 - Condition lever ..... **CUT OFF**

**CAUTION**

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

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

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

13 - 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**

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

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

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

17 - "GENERATOR" selector ..... **MAIN**

18 - "SOURCE" selector ..... **OFF**

# 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

### General

1 - Icing conditions exist when the IOAT 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 IOAT 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 5.4.1 to convert IOAT to SAT in flight.*
*SAT = IOAT - 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 (Cont'd)

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 < IOAT <+ 13°C :*

- "PROP DE ICE" switch ..... **ON**
- "INERT SEP" switch ..... **ON**

*If - 15°C < IOAT < 0°C :*

- All "DE ICE SYSTEM" switches ..... **ON**
- "IGNITION" switch ..... **ON**
- "INERT SEP" switch ..... **ON**

*If - 25°C < IOAT < - 15°C :*

- All "DE ICE SYSTEM" switches ..... **ON**
- "INERT SEP" switch ..... **ON**

*If IOAT < - 25°C :*

- "PROP DE ICE" switch ..... **ON**
- "INERT SEP" switch ..... **ON**

When IOAT 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



**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



3 - Procedures for holding, approach and landing in icing conditions :

- Minimum recommended speeds are :
  - . Flaps UP 130 KIAS
  - . Flaps TO 110 KIAS
  - . Flaps LDG 90 KIAS
- If there is ice on the unprotected surfaces of the airplane, during flight end phase, conduct holding with the flaps up. Use flaps as required for final approach and landing at minimum speeds noted above.

**Ice accumulation effects**

When ice has accumulated on the unprotected surfaces of the airplane, aerodynamic characteristics may be changed.

Particularly stall speeds may increase by up to :

- Flaps UP 20 KIAS
- Flaps TO 15 KIAS
- Flaps LDG 10 KIAS

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

Indeed, in case of severe or prolonged icing, an ice concretion due to refreezing around the heated stall warning may appear. Above-recommended speeds take into account, on one side, the stall speed increase due to profile shape deterioration and, on the other side, the weight increase of the iced-up airplane (taking as a basis the airplane maximum weight when not iced-up).

Rate of climb values with ice accumulation on the unprotected surfaces are to be decreased by 10 %.

## PARTICULAR PROCEDURES

FLIGHT INTO KNOWN ICING CONDITIONS (Cont'd)

Cruise speeds may be decreased by 10 %, if cruise power is not changed, or more, if cruise power setting should be decreased due to the additional inertial separator limitations (ITT limitation).

Because of the higher landing speed, landing distances will be increased. In the landing configuration, using 90 KIAS approach speed increases landing distance by 20 % - refer to Chapter 5.13 "LANDING DISTANCES".

PARTICULAR PROCEDURES

## FLIGHT INTO SEVERE ICING CONDITIONS

**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 (Cont'd)

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

*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 (Cont'd)

### 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

*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 ≤ 128 KIAS.

### Before landing

1 - "IGNITION" switch ..... **ON**

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

## PARTICULAR PROCEDURES

UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS (Cont'd)

### 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)

*REMARK :*
*The procedures hereafter supplement the normal procedures for the airplane use when operating under temperatures between 0°C and - 40°C on ground.*

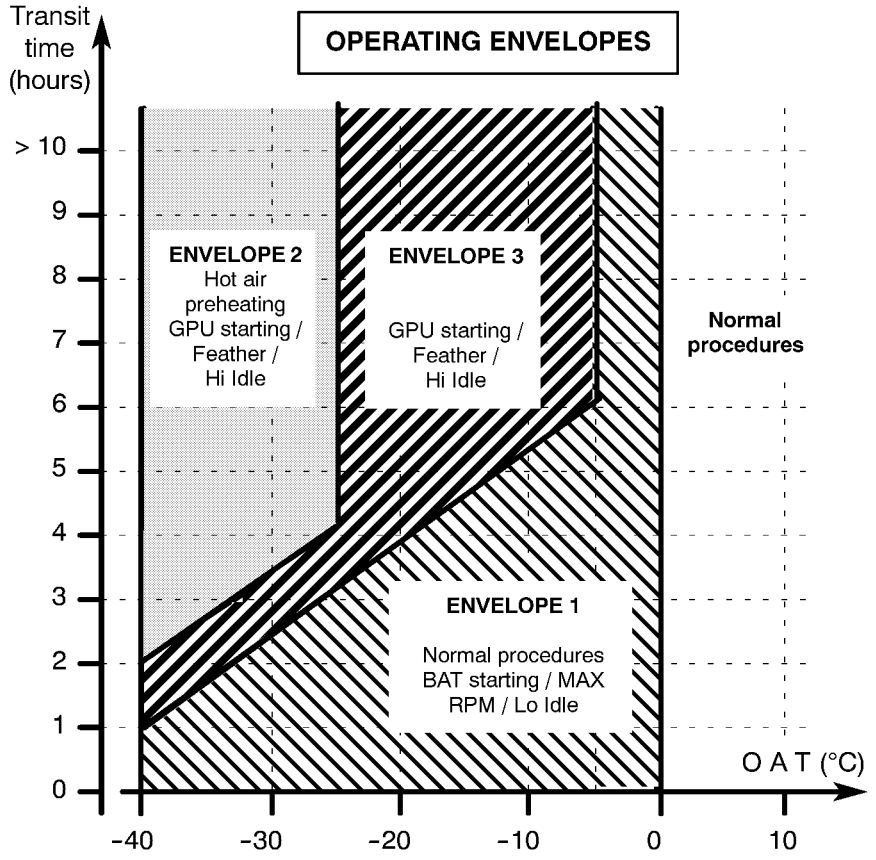



Figure 4.5.1 - OPERATING ENVELOPES BY COLD WEATHER (- 0°C to - 25°C) AND VERY COLD WEATHER (- 25°C to - 40°C)

## PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (- 0°C to - 25°C) AND
VERY COLD WEATHER (- 25°C to - 40°C) (Cont'd)

### *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) (Cont'd)

### Taxiing / Before takeoff / Takeoff

1 - On "DE-ICE SYSTEM" panel :
- "INERT SEP" switch ..... **ON**


- "PITOT 1 HTR" switch ..... **ON**
- "PITOT 2 & STALL HTR" switch ..... **ON**
- "PROP DE-ICE" switch ..... **ON**

2 - Apply normal procedures

3 - Apply, according to the condition of runways and taxiways, the procedures "UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW" or the procedures "UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS".

### Landing / After landing

1 - Apply normal procedures defined in Chapter(s) 4.3 and / or 4.4.

2 - Apply, according to the condition of runways and taxiways, the procedures "UTILIZATION ON RUNWAYS COVERED WITH MELTING OR NOT TAMPED SNOW" or the procedures "UTILIZATION ON ICY OR COVERED WITH TAMPED SNOW RUNWAYS".

### Shut down

1 - Parking brake ..... **RELEASED**


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) (Cont'd)

### *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".

3 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly before takeoff.

4 - Carry out a complete rotation of the propeller to check its free rotation.

5 - Do not perform a fuel draining. If the airplane is operating permanently under negative temperatures, drainings will have to be performed once a week after having parked the airplane in a heated hangar.

## PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (- 0 °C to - 25 °C) AND
VERY COLD WEATHER (- 25 °C to - 40 °C) (Cont'd)

6 - Remove chocks and / or release ties from the airplane.

7 - Check the free deflection of the flight controls and of the elevator trim.

8 - Check the free deflection of the power lever and of the propeller governor lever.

9 - "IGNITION" switch ..... **ON during 30 seconds**

| | | |
|---|---|---|
| **WARNING LIGHT** | **IGNITION** | **ON** |

then "IGNITION" switch ..... **AUTO**

| | | |
|---|---|---|
| **WARNING LIGHT** | **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 LIGHT** | **GPU** | **ON** |
| **WARNING LIGHT** | **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) (Cont'd)

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 LIGHT** | **AUX BP ON** | **ON** |
| **WARNING LIGHT** | **FUEL PRESS** | **OFF** |

- Fuel pressure indicator ..... **Check**

5 - Propeller ..... **AREA CLEAR**

6 - "ENGINE START" panel
- "IGNITION" switch ..... **ON**

| | | |
|---|---|---|
| **WARNING LIGHT** | **IGNITION** | **ON** |

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

| | | |
|---|---|---|
| **WARNING LIGHT** | **STARTER** | **FLASHING** |

## PARTICULAR PROCEDURES

UTILIZATION BY COLD WEATHER (- 0 °C to - 25 °C) AND
VERY COLD WEATHER (- 25 °C to - 40 °C) (Cont'd)

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 LIGHT** | **BAT OFF** | **OFF**

9 - "IGNITION" switch ..... **AUTO**

**WARNING LIGHT** | **IGNITION** | **OFF**

10 - Ground power unit ..... **HAVE IT DISCONNECTED**

**WARNING LIGHT** | **GPU** | **OFF**

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

**WARNING LIGHT** | **AUX BP ON** | **OFF**

12 - Generator ..... **WARNING LIGHT** | **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) (Cont'd)

**After starting the engine**

1 - On "ECS" panel

As soon as the current flow is lower than 100 A :

- "BLEED" switch ..... **ON**
- "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) (Cont'd)

### *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 - "ECS" panel

As soon as the current flow is lower than 100 A :

- "BLEED" switch ..... **ON**
- "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) (Cont'd)

**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.

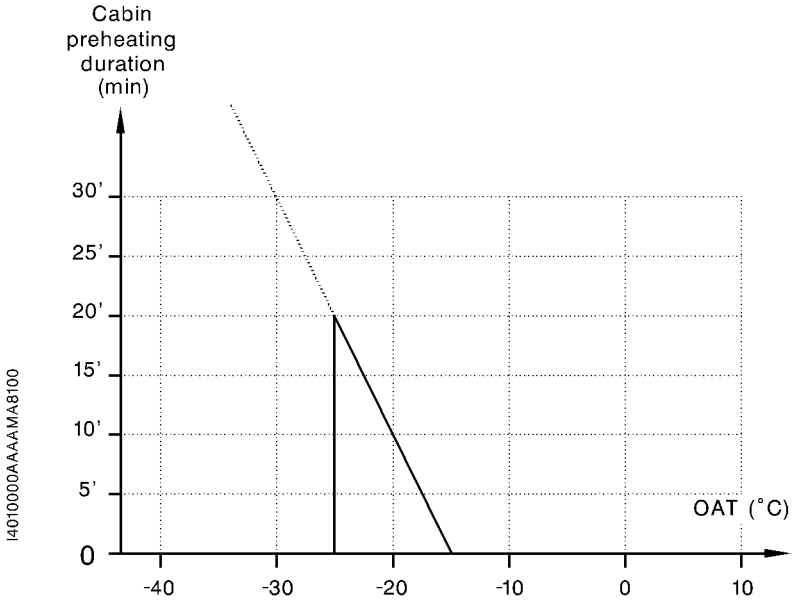



Figure 4.5.2 - PREHEATING DURATION

PARTICULAR PROCEDURES

## LANDING PROCEDURE WITH STRONG HEADWIND OR CROSSWIND

If landing must be performed with strong headwind or crosswind, increase approach speed by the greatest of these 2 following values :

- $\Delta V = \frac{(\text{WIND DOWN} - 10)}{2}$ (Ex. WIND DOWN = 30 kt i.e. $\Delta V$ = 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 5.13, would not be respected.

Before touch-down, generate a slideslip with the rudder in order to align fuselage with the runway (ie left crosswind, left wing low).

Do not use or select the fuel tank on the low wing side during prolonged sideslips with a fuel low warning or gage indicating low.

Retract flaps immediately after landing.

Flap travel is slow and will not have an appreciable effect on landing performance.

## PARTICULAR PROCEDURES

### LANDING PROCEDURE WITH STRONG HEADWIND OR CROSSWIND (Cont'd)

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

## OPERATION IN RVSM CONDITIONS

After altitude capture, in altitude hold mode of the autopilot, discrepancy between desired altitude and held altitude must be adjusted using the vertical trim control in order not to exceed $\pm$ 20 ft.

In RVSM area, the transponder # 1 must be used first.