This Flight Crew Training Manual is an essential tool to learn the ATR standard operating procedures. It has been conceived as the standard baseline for all ATR flight crew training. To facilitate the learning process, procedures are presented in a pedagogical and user-friendly way, with, when necessary, a visualization of cockpit flows and schematics of flight patterns.

This manual is a comprehensive document that efficiently complements FCOM procedures. It is divided into two volumes: “Normal Procedures” and “Emergency & Abnormal Procedures”.

In the Normal Procedures manual, procedures are presented with detailed task sharing and include standard call outs. Additional procedures relating to specific operations and to equipments uses are part of this manual.

In the Emergency & Abnormal Procedures manual, the general management of abnormal situations is explained. Then, a detailed presentation of the procedures to apply per specific situation is made.

This latest revision encompasses all the changes agreed in 2008 during a comprehensive review of the ATR operational documentation (AFM, FCOM & QRH).

NB: Should you find any discrepancy in the emergency procedures between the FCTM and the AFM, please follow the AFM procedures.

The Training and Flight Operations support team.
shows aircraft type for which page is effective: please refer to it before study.

- 72 PEC refers to 72-500
- 42 PEC refers to 42-500
- 72 not PEC refers to 72-200/210
- 42 not PEC refers to 42-300/320
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1. Definitions

1.1. Crew

- CM1 refers to the crew member in the left hand seat.
- CM2 refers to the crew member in the right hand seat.
- The captain always makes the final decision.
- PF is the crew member who flies the aircraft and performs the navigational tasks.
- PNF is the crew member who deals with radio communication, performs the mechanical tasks (Condition Levers), and monitors flight path.
- Cabin crew has to take care of passengers and to ensure the communication between the cabin and the cockpit. Cabin crew is in charge of passenger safety.
- For any additional explanation on task sharing, please refer to Introduction to the Emergency and Abnormal Procedures Manual.

1.2. Flight phase

- A flight is divided into several flight phases.
- Each flight phase is associated with a procedure and eventually followed by a checklist.
- A procedure allows crew members to perform all actions. Checklist permits to check they have been correctly done.

1.3. Procedure

- Each flight phase complies with a specific chronological action list which the crew performs from memory.

Note: ■ A procedure is performed before checklist reading.
■ It is triggered by the word “…procedure”. (e.g. “Before take-off procedure”).
■ All procedures contained in this manual are in compliance with FCOM & QRH.

1.4. Checklist (C/L)

- Normal checklists are used to verify that main procedures with impact on flight management have been correctly performed and checked.
- To be efficient, checklist reading must be preceded with all actions performed from memory.

Note: All checklists in this manual are in compliance with QRH.
2. Crew coordination

2.1. Crew function

<table>
<thead>
<tr>
<th>FLIGHT PHASES</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON THE GROUND &lt; 70Kt</td>
<td>PF</td>
<td>PNF</td>
</tr>
<tr>
<td>ON THE GROUND &gt; 70Kt</td>
<td><em>PF</em></td>
<td><em>PNF</em></td>
</tr>
<tr>
<td>or IN FLIGHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st situation*</td>
<td>PF</td>
<td>PNF</td>
</tr>
<tr>
<td>2nd situation*</td>
<td>PNF</td>
<td>PF</td>
</tr>
</tbody>
</table>

* decided during the captain's briefing.

- For all procedures, the general task sharing stated below is applicable:

**PF is in charge of:**
- Flight path and power levers
- Navigation
- Aircraft configuration
- Procedure initiation

**PNF is in charge of:**
- Checklist reading
- Communication
- Mechanic and conditions levers
- Monitoring PF and flight path
Pilot flying transfer

• The PF function may be transferred, due to external factors, with the following announcement:

  “YOUR CONTROL” or “YOU HAVE CONTROL”

• The pilot who receives the PF function announces:

  “MY CONTROL” or “I HAVE CONTROL”

• After PF / PNF function change, the crew must change and check that the coupling is set to the new PF side.

• Whenever possible and prior to the transfer, the PF should remind the main flight parameters to the PNF.

2.2. Safety recommendations

Execution of given orders

• Crew members must inform each other of any task done.

• PF orders and PNF executes and announces when complete.

Anti collision monitoring

• Crew should avoid paper work (flight log, technical log,...) between ground and Flight Level 100 (except for ATC clearance).

• Anti collision monitoring must be done by both crew members (outside by visual check and inside by ATC frequency listening and TCAS).

Communication in the cockpit

• Talks, requests and call outs must be limited to a minimum during the critical flight phases (take-off, approach, landing or missed approach).

• Technical communications between both pilots must comply with the standard announcements and call outs explained in this manual.
Headset

• The crew must wear headset:
  ■ Before engine start and up to FL 100.
  ■ From FL 100 to engine shut down.
  ■ On Captain’s decision.

Cabin crew

• Pilots must inform the cabin crew of all significant flight phase changes.
  – Take-off.
  – Service beginning.
  – Turbulence area.
  – Descent.
  – Before landing.
  – Technical problem impacting cabin procedure.

• Following an announcement, the cabin crew must:
  – Secure servicing materials, and stay at service seat.
  – Start a technical or commercial action.
  – Apply a specific procedure.

2.3. Cross control

• Cross control is a safety factor, using CROSS CHECKS.
• Control must be done by clear messages and information.
• To allow an efficient cross check:
  – Each pilot should know the other crew member procedures.
  – The procedure should be entirely and accurately followed.

• If an indication is not in compliance with the executed action, crew members must check that the relevant system is correctly set and/or take any necessary action to correct the situation.

• Any pilot action, which modifies the flight parameters (flight path, speed or a system status), should be announced by a pilot and cross-checked by the other one (cross check efficiency is necessary to flight safety).

• PNF can be briefly busy (ATC message, weather listening, operating manual reading, procedure action, etc). Any mode changed by PF concerning ADU, system or any noticeable items must be reported to PNF when his attention becomes available again.
2.4. Procedure methodology

- A procedure always precedes a checklist for the considered flight phase.
- Procedures must be executed in full, calmly, and precisely.
- Every pilot must know the other pilot's procedure items.
- Procedures are triggered by:

**On the ground:**

- Procedures are triggered by
- CM1 or specific flight event

**In flight:**

- Procedures are triggered by
- PF or specific flight event

- PF and PNF task sharing must comply with the following orders and announcements:

  **Example:** Taxi procedure

### Flight events

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>READY TO TAXI</strong></td>
<td><img src="#" alt="Order" /> REQUEST TAXI CLEARANCE</td>
<td><img src="#" alt="Do" /> TAXI CLEARANCE ..........REQUESTED</td>
</tr>
<tr>
<td><strong>TAXI CLEARANCE RECEIVED</strong></td>
<td><img src="#" alt="Announce" /> GROUND FROM COCKPIT, READY TO TAXI, YOU CAN REMOVE CHOCKS AND DISCONNECT</td>
<td><img src="#" alt="Do" /> SECURITY .................CHECK RIGHT SIDE</td>
</tr>
<tr>
<td><strong>WHEN GROUND STAFF IN SIGHT ON CAPTAIN'S SIDE</strong></td>
<td><img src="#" alt="Do" /> COCKPIT COM HATCH .......CLOSED BLOCK TIME .................ANNOUNCED SECURITY .................CHECK LEFT SIDE TAXI &amp; T/O LIGHT ...........ON PARKING BRAKE ..........RELEASED</td>
<td><img src="#" alt="Do" /></td>
</tr>
<tr>
<td><strong>BRAKES CHECK:</strong> for passengers comfort, the following procedure can be used:</td>
<td><img src="#" alt="Do" /></td>
<td></td>
</tr>
<tr>
<td>- set taxi power</td>
<td><img src="#" alt="Do" /> INSTRUMENT ..............CHECK HDG MODE ..........SELECTED LOW BANK ..........SELECTED IAS MODE ..........SELECTED IAS .......................V2 + 5 kt SET COUPLING ..........PF SIDE T/O CONFIG TEST ..........PERFORMED</td>
<td></td>
</tr>
<tr>
<td><strong>ON TAXIWAY</strong></td>
<td><img src="#" alt="Order" /> TAXI PROCEDURE</td>
<td><img src="#" alt="Do" /></td>
</tr>
<tr>
<td><img src="#" alt="Do" /> INSTRUMENT ..............CHECK* HDG MODE ..........SELECTED LOW BANK ..........SELECTED IAS MODE ..........SELECTED IAS .......................V2 + 5 kt SET COUPLING ..........PF SIDE T/O CONFIG TEST ..........PERFORMED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* CHECK HEADING, BEARINGS, HORIZON / RMI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**REMARKS:**

- In some flight phases, the procedure achievement is triggered by events and is automatically done in a chronological way.

- It is not necessary to order the procedure because all the actions are already achieved. PF will directly ask for the checklist.

*Example:*

- After take-off, the procedure is triggered by the CLIMB SEQUENCE.
- For approach phase, the procedure is triggered by QNH SETTING.
- Before landing, the procedure is triggered by the FLAPS SET FOR LANDING.
There are 2 ways to execute a procedure:

- **SCANS** enable the checking of all PBs, switches and lights on the panel.
  
  They are executed:
  
  - from memory
  
  - following a logical way (upward).

  *Example:*
  
  Preliminary cockpit preparation

- **FLOWS** enable a predetermined order for actions.
  
  They are executed:
  
  - from memory
  
  - following a specific order.

  A flow is a reminder of the task sequence.

  *Example:*
  
  Climb sequence flow
2.5. Checklist Methodology / Challenge and Reply

- CHALLENGE AND REPLY concept: PNF reads C/L, PF answers.

- Checklist use:
  
  **On the ground**
  - C/L is requested by CM1
  - C/L is read by CM2

  **In flight**
  - C/L is requested by PF
  - C/L is read by PNF

- PNF announces C/L title, reads the C/L, asking questions.
- When C/L is completed, PNF announces “C/L complete”
- The answer must be in compliance with the C/L and adapted to the present situation.
- PNF must receive the correct answer before reading the next item. If not, PNF must repeat the same item.
- If and when a checklist is interrupted, reading must be resumed one step before the last read item.
- PF and PNF task sharing must comply with following orders and announcement:

  ▶ ANNOUNCE AND READ
  "APPROACH CHECKLIST"

  Approach checklist 6.01
  SEAT BELTS............................ON
  ALTIMETERS........SET AND CHECK
  CABIN ALTITUDE.................CHECK

  ▶ ANNOUNCE
  APPROACH ‘CHECKLIST COMPLETE’

  ▶ REQUEST AND ANSWER
  “APPROACH CHECKLIST”

**REMARKS:**

- To have a standard documentation common to all ATR series, some C/L items in QRH are stated in a general way and identified by “SET”

  Example: "FLAPS........SET"

- To ensure good crew coordination and communication, it is necessary to announce the exact value of the setting.

  Example: "FLAPS........15"

- Values or conditions must be announced as and when changes occur.
2.6. Task sharing

A flight is divided into several flight phases. For each phase, the crew tasks are explained in the procedures hereafter.

<table>
<thead>
<tr>
<th>FLIGHT EVENTS</th>
<th>PROCEDURES</th>
<th>CHECKLIST</th>
<th>TRIGGERED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival at the aircraft</td>
<td>Flight preparation procedure</td>
<td></td>
<td>CM1 / CM2</td>
</tr>
<tr>
<td>CM2 enters the cockpit</td>
<td>Internal inspection procedure</td>
<td></td>
<td>CM2</td>
</tr>
<tr>
<td>Internal inspection complete</td>
<td>External inspection procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Internal inspection complete</td>
<td>Preliminary cockpit preparation procedure</td>
<td></td>
<td>CM2</td>
</tr>
<tr>
<td>Preliminary cockpit preparation procedure complete</td>
<td>Preliminary cockpit preparation checklist</td>
<td></td>
<td>CM1 / CM2</td>
</tr>
<tr>
<td>Preliminary cockpit preparation C/L complete</td>
<td>Final cockpit preparation procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Final cockpit preparation procedure complete</td>
<td>Final cockpit preparation checklist</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Ready to start engine 2 in hotel mode</td>
<td>Before propeller rotation</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Before propeller rotation procedure complete</td>
<td>Before propeller rotation checklist</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Start up clearance received</td>
<td>Before taxi procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Before taxi procedure complete</td>
<td>Before taxi checklist</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>On taxiway</td>
<td>Taxi procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Taxi procedure complete</td>
<td>Taxi checklist</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Approaching holding point and &quot;cabin ok&quot; received</td>
<td>Before take-off procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Before take-off procedure complete</td>
<td>Before take-off checklist</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>FLIGHT EVENTS</td>
<td>PROCEDURES</td>
<td>CHECKLIST</td>
<td>TRIGGERED BY</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------</td>
<td>----------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Reaching acceleration altitude</td>
<td>Climb sequence</td>
<td></td>
<td>PF</td>
</tr>
<tr>
<td>Altimeters setting performed</td>
<td></td>
<td>After take-off checklist</td>
<td>PF</td>
</tr>
<tr>
<td>Crossing FL 100</td>
<td>FL 100 procedure</td>
<td>No C/L</td>
<td>PF</td>
</tr>
<tr>
<td>Reaching cruise speed</td>
<td>Cruise procedure</td>
<td>No C/L</td>
<td>PF</td>
</tr>
<tr>
<td>10 minutes before T.O.D</td>
<td>Before descent procedure</td>
<td></td>
<td>PF</td>
</tr>
<tr>
<td>Arrival briefing complete</td>
<td></td>
<td>Descent checklist</td>
<td>PF</td>
</tr>
<tr>
<td>Crossing FL 100</td>
<td>FL 100 procedure</td>
<td>No C/L</td>
<td>PF</td>
</tr>
<tr>
<td>When cleared to an altitude or passing transition level</td>
<td>Approach procedure</td>
<td></td>
<td>PF</td>
</tr>
<tr>
<td>Approach procedure complete</td>
<td></td>
<td>Approach checklist</td>
<td>PF</td>
</tr>
<tr>
<td>Clear for approach</td>
<td>Before landing procedure</td>
<td></td>
<td>PF</td>
</tr>
<tr>
<td>Landing configuration</td>
<td></td>
<td>Before landing checklist</td>
<td>PF</td>
</tr>
<tr>
<td>Runway vacated</td>
<td>After landing procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>When engine 1 is stopped</td>
<td></td>
<td>After landing checklist</td>
<td>CM1</td>
</tr>
<tr>
<td>Marshaller in sight</td>
<td>Parking procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Parking procedure complete</td>
<td></td>
<td>Parking checklist</td>
<td>CM1</td>
</tr>
<tr>
<td>All documentation filled</td>
<td>Leaving the aircraft procedure</td>
<td></td>
<td>CM1</td>
</tr>
<tr>
<td>Leaving the aircraft procedure complete</td>
<td></td>
<td>Leaving the aircraft checklist</td>
<td>CM1</td>
</tr>
</tbody>
</table>
3. Specific procedures

3.1. Auto Flight Control System (AFCS)

ADU (Advisory Display Unit)

NAV (VOR, LOC and LNAV) and APP modes must be associated with High Bank speeds.

Mode selection is achieved by acting on the corresponding PB on the AFCS control panel except for ALT SEL mode and GO-AROUND mode.

Note: Simultaneously armed modes are limited to one lateral mode and two vertical modes. Therefore vertical armed modes are working in the following priority sequence:

1. ILS GS ARMED
2. ALT SEL ARMED

Any change on ADU from an armed mode (white) to a capturing mode (star) or from a capturing mode (star) to a captured mode (green) must trigger a crew cross control on the FMA (Flight Mode Announcer).
3.1.1. With AP engaged

• AP may be set by PF or by order to PNF.

All track and navigational changes on the AFCS are performed by the PF with the following method:

• When the PF has completed his action, he informs the PNF by using the word “SET” at the end of his call out.

• PNF checks the displayed mode and announces “CHECK”.

GENERAL PHILOSOPHY:

• Any “...SET” is done via ADU by PF if autopilot ON, or PNF if not.

• Any “CHECK” is done via FMA. Any FMA status change must be announced.

REMARK:

If the PF is busy, he can request the setting from the PNF.

Note:

• A climb or descend action must be done with the entire following sequence:
  1) Select ALT SEL
  2) Select and adjust vertical mode (usually IAS for climb and VS for descent)
  3) Adjust Np and power as needed.
  4) Change altimeter barometric setting and compare (please refer to 01.03 p.18, altimeter setting)
  5) Select speed bug.

• The IAS mode must be used during climb (to avoid any stall due to high altitude and low aircraft performance). During descent, the VS mode is mainly used (except in emergency descent where IAS mode is used). The basic (pitch) mode may be used in accordance with the commercial company policy in effect.
Climb mode (AP ON)

Flight events

<table>
<thead>
<tr>
<th>Event</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEARED TO FL 180</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ANNOUNCE “CHECK”</td>
<td>▶DO&lt;br&gt;ALT SEL............... 18000 SELECTED&lt;br&gt;IAS .................. 160/170 SELECTED&lt;br&gt;TORQUE / NP ............ CLIMB SETTING</td>
</tr>
<tr>
<td>ALT STAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ANNOUNCE “CHECK”</td>
<td>▶ANNOUNCE “ALT STAR”</td>
</tr>
<tr>
<td>ALT GREEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ANNOUNCE “CHECK”</td>
<td>▶ANNOUNCE “ALT GREEN”</td>
</tr>
</tbody>
</table>

* ALT white appears only when a vertical mode is armed and the aircraft is climbing or descending towards the preselected altitude / FL.

Note: In a simultaneous setting situation, only one announcement can be made.
Descent mode (AP ON)

FL 180

FL 060

ALT 18 000 FT

ALT 6 000 FT

ALT 6 000 FT

ALT 5 000 FT

Descent mode (AP ON)

Flight events

PNF

PF

CLEARED TO FL 060

▸ ANNOUNCE

"CHECK"

ALT STAR

▸ ANNOUNCE

"CHECK"

ALT GREEN

▸ ANNOUNCE

"CHECK"

▸ DO

ALT SEL ......................... 6000 SELECTED

VS ................................-1500 SELECTED

TORQUE / NP ................TORQUE SETTING

▸ ANNOUNCE

"FL 60 SET

ALT WHITE, VS -1500 SET"

▸ ANNOUNCE

"ALT STAR"

▸ ANNOUNCE

"ALT GREEN"
NAV mode (AP ON)

Flight events

- **Cleared to Intercept Radial 270**
  - **PNF**: Announce "CHECK"
  - **PF**: Announce "HDG Bug Left 045 Set"

- **Established on Interception Heading**
  - **PNF**: Announce "CHECK"
  - **PF**: Announce "Nav Mode Set, VOR White"

- **VOR Star**
  - **PNF**: Announce "CHECK"
  - **PF**: Announce "VOR Star"

- **VOR Green**
  - **PNF**: Announce "CHECK"
  - **PF**: Announce "VOR Green"
### HDG mode (AP ON)

**Flight events**

<table>
<thead>
<tr>
<th>CLEARED TO HEADING 130</th>
<th>HEADING SELECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PNF</strong></td>
<td><strong>PF</strong></td>
</tr>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

- **DO**
  - HDG mode .................. SELECTED
  - HDG bug .................. 130 SELECTED

- **ANNOUNCE**
  - "HDG MODE LO (or HI) BANK SET"*
  - "HI or LO according to flight conditions."
  - "HDG BUG RIGHT 130 SET"

  *HI or LO according to flight conditions.
APP mode (AP ON)

PNF

PF

Flight events

CLEARED TO PERFORM AN ILS APPROACH

▸ANNOUNCE "CHECK"

▸DO

APP MODE SELECTED

▸ANNOUNCE "LOC AND GS WHITE"

▸ANNOUNCE "LOC STAR"

▸ANNOUNCE "LOC GREEN"

▸ANNOUNCE "GS STAR"

▸ANNOUNCE "GS GREEN"
GA mode (AP ON)

FD / AP displays are the same for all ATRs. The shown procedure applies to 42 not PEC. For others, please refer to 2.03 p. 59, go-around.

When GA PB depressed, autopilot is automatically disconnected.

Flight events

FULLY ESTABLISHED

▶ ANNOUNCE “CHECK”

AT DA OR MDA

DO

To s ............... CHECK/ADJUST GA
FLAPS 15 .............. SELECTED

▶ ANNOUNCE “FLAPS 15, POWER SET”

WHEN FLAPS AT 15 ON THE FLAPS INDICATOR

DO

GEAR LEVEL.................. UP
HDG MODE .................. SELECTED
LO BANK .................. SELECTED
IAS .................. VGA SELECTED
TAXI & T/O LIGHT ............... OFF

▶ ANNOUNCE “IAS XXX SET”

WHEN POSITIVE CLIMB ON THE VSI

▶ ANNOUNCE “GEAR UP”

WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL

▶ ANNOUNCE “CHECK”

PNF

PF

“LOC GREEN, ...... GS GREEN”

“GO-AROUND, SET POWER, FLAPS ONE NOTCH”

DO

GA PB ON PL ............... DEPRESSED
ROTATE ............... GA PITCH (+8° NOSE UP)
PLs ............... ADVANCED TO WHITE MARK
CAVALRY CHARGE .................... CANCEL

“GEAR UP, SET HEADING, LOW BANK, IAS VGA”

“CHECK”
3.1.2. With AP disengaged (flying manually following FD bars)

- All track and navigation changes on AFCS are performed by the PNF, at the PF’s request.
- To avoid repetition, heading or altitude clearance are set and announced by the PNF without a PF order. All flight parameters (speed bug, altimeter setting) are set by both pilots after PF’s request.

1. PF orders the action by starting his sentence with the word “SET”
2. PNF informs PF after performing the action, concluding his sentence by “SET”
3. PF announces “CHECK” after checking the FMA and/or ADU
Climb mode (AP OFF)

**Flight events**

<table>
<thead>
<tr>
<th><strong>PNF</strong></th>
<th><strong>PF</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLEARED TO FL 180</strong></td>
<td><strong>ORDER</strong></td>
</tr>
<tr>
<td>➤ DO</td>
<td>“SET FL 180, IAS 160”</td>
</tr>
<tr>
<td>➤ ANNOUNCE</td>
<td>“CHECK”</td>
</tr>
<tr>
<td></td>
<td>“CHECK OR ADJUST PWR LEVER TO AMBER TO BUGS”</td>
</tr>
<tr>
<td><strong>ALT STAR</strong></td>
<td><strong>ANNOUNCE</strong></td>
</tr>
<tr>
<td></td>
<td>“ALT STAR”</td>
</tr>
<tr>
<td><strong>ALT GREEN</strong></td>
<td><strong>ANNOUNCE</strong></td>
</tr>
<tr>
<td></td>
<td>“ALT GREEN”</td>
</tr>
</tbody>
</table>

- **DO**: ALT SEL: ................. FL 180 SELECTED
- IAS: ....................... 160/170 SELECTED
- **ANNOUNCE**: ”FL 180, IAS 160/170 SET, ALT WHITE”
- **ANNOUNCE**: “CHECK”
Descent mode (AP OFF)

**Flight events**

**PNF**
- **CLEARED TO FL 60**
  - **DO**
    - ALT SEL.............. FL 060 SELECTED
    - VS...................... -1500 SELECTED
  - **ANNOUNCE**
    - "FL 60, VS - 1500 SET, ALT WHITE"
- **ALT STAR**
  - **ANNOUNCE**
    - "CHECK"
- **ALT GREEN**
  - **ANNOUNCE**
    - "CHECK"

**PF**
- **ORDER**
  - "SET FL 60, VS - 1500"
- **ANNOUNCE**
  - "CHECK"
- **ANNOUNCE**
  - "ALT STAR"
- **ANNOUNCE**
  - "ALT GREEN"
**NAV mode (AP OFF)**

- **DO**
  - HDG BUG........................................... 045
- **ANNOUNCE**
  - "HEADING BUG 045 SET"
- **DO**
  - NAV MODE .......................................SELECTED
- **ANNOUNCE**
  - "NAV MODE SET, VOR WHITE"
- **ANNOUNCE**
  - "CHECK"
- **ANNOUNCE**
  - "VOR STAR"
- **ANNOUNCE**
  - "CHECK"
- **ANNOUNCE**
  - "VOR GREEN"
# HDG mode (AP OFF)

**Flight events**

<table>
<thead>
<tr>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cleared to Heading 130</strong></td>
<td><strong>Order</strong></td>
</tr>
<tr>
<td><strong>DO</strong></td>
<td>“Set Heading Mode”</td>
</tr>
<tr>
<td>HDG MODE...............................SELECTED</td>
<td><strong>Announce</strong></td>
</tr>
<tr>
<td><strong>Announce</strong></td>
<td>“CHECK”</td>
</tr>
<tr>
<td>“Heading Low (or HI) Bank Set”*</td>
<td>“Set Heading Bug Right 130”</td>
</tr>
<tr>
<td>*Hi or LO according to flight conditions.</td>
<td><strong>Announce</strong></td>
</tr>
<tr>
<td><strong>DO</strong></td>
<td>“CHECK”</td>
</tr>
<tr>
<td>HDG MODE...............................130 SELECTED</td>
<td><strong>Announce</strong></td>
</tr>
<tr>
<td><strong>Announce</strong></td>
<td>“Heading Bug 130 Set”</td>
</tr>
</tbody>
</table>

---

* NORMAL PROCEDURES
  INTRODUCTION TO NORMAL PROCEDURES

---

**FOR TRAINING ONLY**
APP mode (AP OFF)

Flight events

**PNF**

- **DO**
  - APP MODE................................SELECTED

- **ANNOUNCE**
  - “APPROACH MODE SET, LOC AND GS WHITE”

**PF**

- **ORDER**
  - “SET APPROACH MODE”

- **ANNOUNCE**
  - “CHECK”

**LOC STAR**

- **ANNOUNCE**
  - “CHECK”

**LOC GREEN**

- **ANNOUNCE**
  - “CHECK”

**GS STAR**

- **ANNOUNCE**
  - “CHECK”

**GS GREEN**

- **ANNOUNCE**
  - “CHECK”
**GA mode (AP OFF)**

**Flight events**

<table>
<thead>
<tr>
<th>FULLY ESTABLISHED</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE</td>
<td>“CHECK”</td>
<td>“LOC GREEN, ........ GS GREEN”</td>
</tr>
<tr>
<td>AT DA OR MDA</td>
<td>▶ DO</td>
<td>▶ ORDER</td>
</tr>
<tr>
<td>WHEN FLAPS AT XX ON THE FLAPS INDICATOR</td>
<td>TQs</td>
<td>“GO-AROUND, SET POWER, FLAPS ONE NOTCH”</td>
</tr>
<tr>
<td></td>
<td>CHECK/ADJUST GA FLAPS 15</td>
<td>▶ DO</td>
</tr>
<tr>
<td></td>
<td>SELECTED</td>
<td>GA PB ON PL</td>
</tr>
<tr>
<td></td>
<td>“FLAPS XX, POWER SET”</td>
<td>ROTATE .......... GA PITCH (+8° NOSE UP)</td>
</tr>
<tr>
<td></td>
<td>Note: ATR 42-500 SEE 02.02.03 page 96</td>
<td>PLs .......... ADVANCED TO WHITE MARK</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE</td>
<td>CAVALRY CHARGE...........................................CANCEL</td>
</tr>
<tr>
<td>WHEN POSITIVE CLIMB ON THE VSI</td>
<td>“POSITIVE RATE”</td>
<td>“GEAR UP, HEADING, LOW BANK, IAS VGA”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE</td>
<td>▶ ANNOUNCE</td>
</tr>
<tr>
<td></td>
<td>“IAS XXX SET”</td>
<td>“CHECK”</td>
</tr>
<tr>
<td>WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL</td>
<td>▶ ANNOUNCE</td>
<td>“CHECK”</td>
</tr>
<tr>
<td></td>
<td>“GEAR UP”</td>
<td>▶ ANNOUNCE</td>
</tr>
</tbody>
</table>
3.2. Flaps use

- For system use in normal operations, any setting change shall be performed through the cross control concept:

  PF: orders system action.

  PNF: performs the action and announces the configuration when the setting is in compliance with the system indicator

- Flaps manoeuvres are always performed by the PNF under PF order. PNF checks the speed before each configuration change then performs the task and announces the new configuration.

Example:

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAPS EXTENSION</td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS LEVER .................. SELECTED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▶ ORDER “FLAPS XX”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>PNF</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAPS AT XX ON THE FLAPS INDICATOR</td>
<td>▶ ANNOUNCE “FLAPS XX”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
</tr>
</tbody>
</table>

Note: Select new speed only when the new configuration is obtained, during deceleration.
3.3. Landing gear use

• For system use in normal operations, any setting change shall be performed through the cross control concept:

PF: orders system action.

PNF: performs the action and announces the configuration when the setting is in compliance with the system indicator

• Gear manoeuvres are always performed by the PNF under PF order. PNF checks the speed before each configuration change then performs the task and announces the new configuration.

Example:

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANDING GEAR EXTENSION</td>
<td>▶ ANOUNCE &quot;SPEED CHECK&quot;</td>
<td>▶ ORDER &quot;GEAR DOWN&quot;</td>
</tr>
<tr>
<td></td>
<td>▶ DO LANDING GEAR LEVELS .................. DOWN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PWR MGT .................................. TAKE-OFF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TAXI &amp; T/O LIGHTS ........................... ON</td>
</tr>
<tr>
<td>3 GREEN LIGHTS ON THE LANDING GEAR INDICATOR</td>
<td>▶ ANOUNCE &quot;GEAR DOWN&quot;</td>
<td>▶ ANNOUNCE &quot;CHECK&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.4. Altimeter and radioaltimeter setting

3.4.1. Altimeter setting

PF and PNF altimeter settings must be identical. Any change shall be performed with a specific call and cross control.

Example: cleared down to an altitude with QNH 1015

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>QNH SETTING</strong></td>
<td>▶ DO QNH 1015 ...........................................SET</td>
<td>▶ ORDER &quot;SET QNH&quot;</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE &quot;1015 SET&quot;</td>
<td>▶ DO QNH 1015 ...........................................SET</td>
</tr>
<tr>
<td><strong>DESIRED ALTITUDE</strong></td>
<td></td>
<td>▶ ANNOUNCE &quot;XXXX FT, NOW&quot;</td>
</tr>
<tr>
<td></td>
<td>▶ CHECK &quot;CHECK&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>If difference less than 50 feet or &quot;± XX FT&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If difference more than 50 feet</td>
</tr>
</tbody>
</table>

* XXXX is the altimeter value: • expressed in feet for QNH setting.
  • expressed in Flight Level for standard setting.

For each flight phase, the altimeter setting must be in compliance with the following table.

Note: Settings may vary, depending on prevailing local regulations.

<table>
<thead>
<tr>
<th>FLIGHT PHASE</th>
<th>ALTIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAPTAIN</td>
</tr>
<tr>
<td>From ground till cleared to FL</td>
<td>QNH (departure airport)</td>
</tr>
<tr>
<td>From climb to FL till cleared down to altitude</td>
<td>STANDARD</td>
</tr>
<tr>
<td>Cleared to altitude</td>
<td>QNH (arrival airport)</td>
</tr>
</tbody>
</table>
Altimeter bugs (if installed)

Bug setting must be the same on the captain's and the first officer's side.

Take-off

Example:  Acceleration altitude = 1000 ft (white bug)
Airport elevation = 500 ft (red bug)

Landing

Example:  - DA or MDA = 700 ft (white bug)
- Airport elevation = 500 ft (red bug)

3.4.2. Radioaltimeter Setting

DH policy

- Used for CAT II approach.
- May be set under CAT I approach, by both the PNF and PF together, and for information only (i.e. not to be used as a reference).
- Never used for non precision approach.
3.5. Speed bugs

Setting

• The PF and PNF speed bug settings must be identical.

• Any setting change shall be performed with a specific call out and cross control.

Example: After filling the landing data card, ready to set speed bug.

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANDING DATA CARD PROCEEDING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>► DO</td>
<td>YELLOW BUG ........................................... SELECTED</td>
<td></td>
</tr>
<tr>
<td>► ANNOUNCE</td>
<td>“103 SET”</td>
<td></td>
</tr>
<tr>
<td>► DO</td>
<td>WHITE BUG ........................................... SELECTED</td>
<td></td>
</tr>
<tr>
<td>► ANNOUNCE</td>
<td>“131 SET”</td>
<td></td>
</tr>
<tr>
<td>► DO</td>
<td>RED BUG .............................................. SELECTED</td>
<td></td>
</tr>
<tr>
<td>► ANNOUNCE</td>
<td>“145 SET”</td>
<td></td>
</tr>
</tbody>
</table>

Speed bug

When aircraft configuration is obtained, PF orders new speed bug setting according to flight phase, on both sides. Speed bug manages Fast / Slow speed scale and must be considered also as a cross-check tool.

Example:

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCELERATING TO 160 KT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>► DO</td>
<td>SPEED BUG ............................................... SELECTED</td>
<td></td>
</tr>
<tr>
<td>► ANNOUNCE</td>
<td>“SET”</td>
<td></td>
</tr>
<tr>
<td>► ANNOUNCE</td>
<td>“SPEED BUG 160”</td>
<td></td>
</tr>
<tr>
<td>► DO</td>
<td>SPEED BUG ............................................... SELECTED</td>
<td></td>
</tr>
</tbody>
</table>
3.5.1. Take-off bugs

- **Green bug**: V1
  - Set when V1 ≠ VR (When runway limited (set at 12 o'clock when not used))

- **Yellow bug**: VR
  - When limiting runway

- **Speed bug**: V1/VR
  - When non-limiting runway

- **White bug**: V2

- **White bug + 10 kt**

- **Red bug**

- **Red bug + 10 kt**

**Normal conditions**

- **FLAPS RETRACTION SPEED (VmLB0)**
  - Best climb angle speed Flaps 0°
  - Single engine climb speed Flaps 0°

- **HIGH BANK (VmHB0)**
  - Best climb rate speed Flaps 0°

**Icing conditions**

- **FLAPS RETRACTION SPEED (VmLB15)**
  - Single engine climb speed Flaps 15° (VmLB15)

- **HIGH BANK**

**VmLB**: minimum speed LOW BANK (HDG SEL LO on ADU)

**VmHB**: minimum speed HIGH BANK (HDG SEL HI on ADU)
3.5.2. Cruise bugs

- Normal conditions
- Icing conditions
- DRIFT DOWN SPEED Flaps 0° (VMb0)
- DRIFT DOWN SPEED Flaps 15° (VMb15)
- MINI EN ROUTE Flaps 0° (VMb0)
- Cruise speed

Speed bug

White bug

Red bug

Normal conditions

Cruise speed
3.5.3. Approach bugs

VGA = Greatest:
- VAPP no wind + 5 kt
or
- 1.1 Vmca

VAPP = VAPP no wind + wind factor

Normal conditions

FLAPS RETRACTION SPEED (VmLBO)
Best climb angle speed Flaps 0°
Single engine climb speed Flaps 0°

HIGH BANK (VmHB0)
Best climb rate speed Flaps 0°

Icing conditions

Single engine climb speed Flaps 15°
(VmLBO15)

Flaps RETRACTION SPEED (VmLBO)

HIGH BANK

VmLB: minimum speed LOW BANK (HDG SEL LO on ADU)
VmHB: minimum speed HIGH BANK (HDG SEL HI on ADU)
3.5.4. Best angle and best rate speed

<table>
<thead>
<tr>
<th>Normal Conditions</th>
<th>2 Engines</th>
<th>1 Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal White Bug</td>
<td>WH ANGLE:</td>
<td>WHITE BUG</td>
</tr>
<tr>
<td></td>
<td>WHITE BUG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BEST RATE:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WHITE BUG +10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 Engines</th>
<th>1 Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flaps</td>
<td></td>
</tr>
<tr>
<td>0°</td>
<td>0°</td>
</tr>
<tr>
<td>0°</td>
<td>15°</td>
</tr>
</tbody>
</table>

ICING CONDITIONS

<table>
<thead>
<tr>
<th>Red Bug</th>
<th>White Bug</th>
</tr>
</thead>
</table>

FOR TRAINING ONLY
3.6. Torque bugs

3.6.1. Take-off bugs

Example: Airport pressure altitude is 1000 ft and OAT is 10°C.
### 3.6.2. Cruise bugs

The FADA torque is checked in the cruise performance chart.

![Cruise torque bug, automatically computed by the FADA.](image)

#### MAX CRUISE 2 ENGINES

<table>
<thead>
<tr>
<th>FLIGHT LEVEL</th>
<th>( \Delta ) ISA</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>( -10 )</td>
</tr>
<tr>
<td>100</td>
<td>90.0</td>
</tr>
<tr>
<td>120</td>
<td>90.0</td>
</tr>
<tr>
<td>140</td>
<td>90.0</td>
</tr>
<tr>
<td>160</td>
<td>90.0</td>
</tr>
<tr>
<td>180</td>
<td>90.0</td>
</tr>
<tr>
<td>200</td>
<td>90.0</td>
</tr>
<tr>
<td>220</td>
<td>90.0</td>
</tr>
<tr>
<td>240</td>
<td>90.0</td>
</tr>
<tr>
<td>250</td>
<td>90.0</td>
</tr>
</tbody>
</table>

**TQ %** NP = 86%

**TQ %** NP = 77%

**NP 77 %** NOT MECH. LIMITED

---

For training only

---

1.03

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JUN 09
3.6.3. Torque preset

- For the following conditions, this table shows the best torque presets.

- Precise torque values will vary depending on aircraft weight and outside conditions but differences will be very minimal.

- Do not forget that Np modifies the torque for a given PL angle.

<table>
<thead>
<tr>
<th>NP = 86/82%</th>
<th>Level flight</th>
<th>Approach 3°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>180 160 140 120 VAPP</td>
<td></td>
</tr>
<tr>
<td>Gear</td>
<td>UP UP DOWN DOWN DOWN</td>
<td></td>
</tr>
<tr>
<td>Flaps</td>
<td>0° 0° 15° 30/35° 30/35°</td>
<td></td>
</tr>
<tr>
<td>All engine torque</td>
<td>50% 40% 40% 50% 25%</td>
<td></td>
</tr>
<tr>
<td>All engine pitch</td>
<td>+1° +1° +2° +2° –1°</td>
<td></td>
</tr>
<tr>
<td>Single engine torque</td>
<td>90% 75% 75% 90% 50%</td>
<td></td>
</tr>
<tr>
<td>Single engine pitch</td>
<td>+1° +1° +2° +2° –1°</td>
<td></td>
</tr>
</tbody>
</table>

- For profiles other than ILS and level flight, use the following equivalence:
  
  ±3% Torque ↔ ±1 percent slope
  
  or
  
  ±5% Torque ↔ 1 degree slope
  
  or
  
  ±5% Torque ↔ ± 10 Kt of wind component

(to be able to maintain a constant ground descent gradient, the vertical speed must be adjusted and so the speed).
3.7. Data card

3.7.1. Take-off data card

Data card filling

CM2 fills in take-off data card:
- during "final cockpit preparation" procedure: purple labels
- prior to the "before propeller rotation" procedure: green labels.

All operational data shall be cross checked by the crew on relevant documentation (QRH, FOS, load and trim sheet...)

---

### ATR 42 not PEC TAKE OFF

<table>
<thead>
<tr>
<th>FLT N°</th>
<th>FROM</th>
<th>TO</th>
<th>DATE</th>
<th>ATIS</th>
<th>W LIM</th>
<th>TOW</th>
<th>CG% TRIM</th>
<th>ACF</th>
<th>Icing</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

---

**FLT N°**
Write the flight number.

**FROM**
Write the ICAO departure airport code.

**TO**
Write the ICAO arrival airport code.

**DATE**
Write the present date.

**ATIS**
Write the ATIS data.
ICING
Tick the box when icing conditions prevail at take-off.

W LIM
Write the lowest limitation value.

OBJ TQ
Write the objective torque read in the QRH (page 4.11) according to the outside air temperature and the pressure altitude.

RTO TQ
Write the reserve take-off torque read in the QRH (page 4.12) according to both the outside air temperature and the pressure altitude.

ACC
Write the acceleration altitude for take-off.
The minimum figure must be 400 feet above airport level (AAL).

SINGLE ENGINE PROCEDURE
Write the single engine procedure read on the FOS chart (at least the first turn).

HDG
Write runway in use for take-off.

After load and trim sheet proceeding:

TOW
Write the TOW read on the load and trim sheet and compare with W LIM

V1
Write V1 read on the FOS if taking off on a limiting runway, or in the QRH, according to the actual TOW, if the runway is NL.

VR
Write VR read on the FOS if taking off on a limiting runway, or in the QRH, according to the actual TOW, if the runway is NL.

V2
Write V2 read on the FOS if taking off on a limiting runway, or in the QRH, according to the actual TOW, if the runway is NL.

FINAL TO (WB)
Write the value of Final take-off speed read in the QRH according to the normal (VmLB0°) or icing conditions prevailing (VmLB 15°)

VmLB 0° (RB)
Write the value of VmLB0 in icing conditions read in the QRH.

CG% TRIM
Write the value of the trim setting according to the CG location in percentage of MAC given on the load and trim sheet.
Data card proceeding

- Information proceeding from the take-off data card permits crew members to prepare the departure and take-off briefings.

- The card must be read from up to down and from left to right by the PF (5 columns), and set when necessary (QNH, OBJ TQ, speed bugs, trim, altimeters bugs): "are you ready to proceed?...".

---

### 42 not PEC

#### TAKE OFF

<table>
<thead>
<tr>
<th>FLT N°</th>
<th>FROM</th>
<th>TO</th>
<th>DATE</th>
<th>For training only</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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</tbody>
</table>

#### ATIS

<table>
<thead>
<tr>
<th>RWY:</th>
<th>W LIM</th>
<th>TOW</th>
<th>CG% TRIM</th>
<th>ACC:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td>10</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OBJ TQ</th>
<th>V1:</th>
<th>RTO TQ</th>
<th>VR:</th>
<th>V2:</th>
<th>16</th>
<th>18</th>
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<tbody>
<tr>
<td>8</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T°:</th>
<th>QNH:</th>
<th>ICING</th>
<th>VmLB0° norm</th>
<th>VmLB 0° icing</th>
<th>WB:</th>
<th>RB:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>14</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N - 1</th>
</tr>
</thead>
</table>

---

1. FLT N°
   Announce the flight number and check the FDEP.

2. FROM
   Announce the ICAO departure airport code.

3. TO
   Announce the ICAO arrival airport code.

4. DATE
   Announce the present date.

5. ATIS
   Read the ATIS data and check:
   - the possibility to take-off according to present RVR/Visibility and value read on the Jeppesen chart.
   - the possibility to fly back to departure airport in case of engine failure. (if an alternate airport is necessary, it must be indicated on the load and trim sheet).
   - wind limitations for take-off and hotel mode use.
   - set QNH on the 3 altimeters and cross-check the elevation readings.
   - temperature and moisture to determine if normal or icing conditions are prevailing.
ICING
If the box is ticked, remember icing conditions prevail.

W LIM
Announce W LIM

OBJ TQ
Announce the objective torque value and set the white bugs on the torques gauges.

RTO TQ
Announce the reserve take-off torque value and check that amber bugs on the torque gauges are facing the above-mentioned value.

TOW
Check that TOW is less than or equal to your W LIM

V1
Set the yellow bug on both airspeed indicators according to that value and cross-check.

VR
Memorize the value (if V1 and VR are different, use the green bug for V1 and the yellow bug for VR).

V2
Set the amber bug on both airspeed indicators according to that value and cross-check.

FINAL TO (WB)
Set white bug on both airspeed indicators according to that value and cross-check.

VmLB 0° (RB) (Icing)
Set red bug on both airspeed indicators according to that value and cross-check.

CG% TRIM
Set the pitch trim and check it remains inside the green arc.

ACC
Set the white bug on both altimeters according to that value.

SINGLE ENGINE PROCEDURE
Confirm the single engine procedure according to weather conditions.

HDG
Check the runway in use given on ATIS.
### 3.7.2. Landing data card

**Data card filling-in**

- The landing data card must be filled in by the PF prior to the arrival briefing.
- It is done from up to down and from left to right.

<table>
<thead>
<tr>
<th>ATR 42 not PEC</th>
<th>LANDING</th>
<th>For training only</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLT N°: 1</td>
<td>DEST: 2</td>
<td>ELEV: 3</td>
</tr>
<tr>
<td>ALTERN: 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RWY: 5</td>
<td>W LIM 7</td>
<td>LW 11</td>
</tr>
<tr>
<td>Wind:</td>
<td>GA TQ 8</td>
<td>FLAPS 12</td>
</tr>
<tr>
<td>Ceiling:</td>
<td>1.1 VMCA 9</td>
<td>VAPP 13 ind</td>
</tr>
<tr>
<td>Vis / RVR:</td>
<td>VGA 10</td>
<td>VAPP 14</td>
</tr>
<tr>
<td>T*:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QNH:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ ICING 6</td>
<td>VmLB0° norm 15° icing</td>
<td>VmLB 0° icing</td>
</tr>
<tr>
<td></td>
<td>WB: 15</td>
<td>RB: 16</td>
</tr>
<tr>
<td>GA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**For Training Only**

1. **FLT N°**
   - Write the flight number.
2. **DESTINATION**
   - Write the ICAO destination airport code.
3. **ALT**
   - Write the destination airport elevation.
4. **ALTERNATE**
   - Write the ICAO alternate airport code.
5. **ATIS**
   - Write the ATIS data.
6. **ICING**
   - Tick the box if icing conditions are prevailing at landing.
7. **W LIM**
   - Write the limiting weight for landing.
8. **GA TQ**
Write the value of the GA TQ read in the QRH (page 4.13).

9. **1.1 VMCA**
Write the value read in the QRH (page 4.64).

10. **VGA**
Write the VGA value: highest value between:
- 1.1 VMCA, or
- VAPP no wind + 5 Kt.

11. **LW**
Write the calculated LDG weight and compare with W LIM.

12. **FLAPS**
Write the flaps value.

13. **VAPP no wind**
Write the value of VAPP no wind read in the QRH (on the final approach speed line).

14. **VAPP**
Write the value of VAPP = VAPP no wind + wind factor.
   Wind factor = the highest value between:
   - 1/3 of reported headwind, or
   - the gust in full.
   
   Max. correction: 15 kt

15. **VmLB (WB)**
Write the value found in the QRH:
- VmLB 0° in normal conditions
- VmLB 15° in icing conditions.

16. **VmLB 0° (RB) (Icing)**
Write the value found in the QRH:
- VmLB 0° in icing conditions.

17. **ACC**
Write the acceleration altitude for the go-around procedure.
The highest value between:
- 1000 feet AAL, or
- the value specified on Jeppesen chart, or
- a specific computation.

18. **GO-AROUND PROCEDURE**
Draw the first segment of the go-around procedure (first heading, first altitude, first turn).

19. **HDG**
Write the runway in use on the destination airport.
Data card proceeding

- The landing data card must be proceeded by the PF prior to the arrival briefing: "Are you ready to proceed?...".
- It is done from up to down and from left to right.

### ATR 42 not PEC LANDING

<table>
<thead>
<tr>
<th>FLT N°</th>
<th>DEST</th>
<th>ELEV</th>
<th>ALTERNATE</th>
<th>W LIM</th>
<th>LW</th>
<th>ACC</th>
<th>GA TQ</th>
<th>FLAPS</th>
<th>V APP</th>
<th>V APP</th>
<th>VmLB 0° norm 15° icing</th>
<th>VmLB 0° icing</th>
<th>WB</th>
<th>RB</th>
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<td>14</td>
<td>15</td>
<td>16</td>
<td>19</td>
<td>GA</td>
</tr>
</tbody>
</table>

- **ICING**
  - If the box is ticked, remember icing conditions prevail for landing.

**ATIS**
- Read the ATIS data and check:
  - visibility or RVR value to determine airport's accessibility
  - instrument approach in use
  - wind limitations for landing
  - QNH and set it on the standby altimeter
  - temperature to determine if normal or icing conditions are prevailing.

**NORMAL PROCEDURES**

**INTRODUCTION TO NORMAL PROCEDURES**

**1 FLT N°**
Announce the flight number.

**2 DESTINATION**
Announce the ICAO destination airport code.

**3 ELEV**
Set the red bugs on PF and PNF altimeters.

**4 ALTERNATE**
Write the ICAO alternate airport code.

**5 ATIS**
- Wind:
- Ceiling:
- Vis / RVR:
- T°:
- QNH:

**6 ICING**
If the box is ticked, remember icing conditions prevail for landing.

**7 W LIM**
Announce W LIM value.
8. **GA TQ**
   Announce the go-around torque value and set white bugs on torque gauges.

9. **1.1 VMCA**
   Announce the value of 1.1 VMCA

10. **VGA**
    Set yellow bugs on the airspeed indicators according to that value.

11. **LW**
    Check that LW is less or equal than W LIM.

12. **FLAPS**
    Announce flaps setting for landing.

13. **VAPP no wind**
    Announce the value of VAPP no wind.

14. **VAPP**
    Announce and memorize the value of VAPP.

15. **VmLB (WB)**
    Set white bugs on airspeed indicators according to that value and crosscheck.

16. **VmLB 0° (RB) (Icing)**
    Set red bugs on airspeed indicators according to that value and crosscheck.

17. **ACC**
    Set white bugs on main altimeters according to that value.

18. **GO-AROUND PROCEDURE**
    Describe the first segment of the go-around procedure.

19. **RWY**
    Announce and set ALTI BUGS (if installed): red on threshold elevation, white on MDA

---

Example: First-officer will be PF in flight, so he performs the data card proceeding:

We’ll be landing at xxxx, elevation xxx ft, alternate is xxxx. Information x (if ATIS received) recorded at xx.xx, runway in use xx, wind is xxx°/xx kt (check wind limitation), ceiling xxx and visibility xx (check procedure minima), temperature is ± xx°, QNH is xxxx hPa set on stand by altimeter, normal/icing conditions, MLW is xx,x tons, LW is xx, x t (check LW<MLW), GA TQ xxx% set (set on torque indicator), VGA is xxx kt, white bug is xxx kt, red bug isxxx kt (set on both ASI, CPT and FO), with flaps XX° Vapp is xxxkt. Missed approach procedure is reported, and acceleration altitude is xxxx ft.
3.8. Briefing

3.8.1. Departure briefing

All departure settings must be ready before performing briefing.

*Are you ready for the departure briefing?*

**Status**

- Weather conditions (icing, thunderstorm, wind...)
- Aircraft technical situation (technical concern, MEL restriction...)
- Specific flight items (NOTAMs, de-icing...)

**Taxi**

- Taxi out description
- Specifics (contamination, taxiway closed...)
- Runway in use and expected holding point

**Runway**

- Limitations, specifications, bleed, anti-icing (fluid type...)

**SID (Standard Instrument Departure)**

1. Jeppesen chart N° ___ & date ___
2. SID name
3. MSA
4. Flight path description:
   1 - routing
   2 - first FL or altitude
   3 - climb gradient
5. Radio navigation setting
   - Active frequency + associated course
   - Standby frequency (if necessary)
   - DME hold (if necessary)
   - RMI: VOR and / or ADF
6. RNAV setting:
   If equipped (HT 1000 or certified GPS receiver) check SID inserted in FPL for cross check operation.

"If no question, departure briefing complete"
3.8.2. Departure clearance

When clearance departure is received from ATC, you must check it is in compliance with the expected SID:

a - Is actual SID in compliance with the prepared one?

b - Is altitude clearance in compliance with MSA / SID climb instruction?

c - Set squawk code.

• If clearance is amended, reorganize and describe new radio-navigation setting and limitations.

• If clearance is not amended, PF announces: "no change".

3.8.3. Take-off briefing

- "Take-off RWY _____, Weight _____, V1 _______

- If failure before _____ kt, I (you) stop the aircraft.

- If failure at or after _____ kt, we continue HDG _____, acceleration altitude is _____, MSA is _____"

The single engine flight path shall be read on FOS chart.

Example: First officer will be PF in flight, so he performs the take-off briefing:

*Are you ready for take-off briefing?... Take-off runway 32L, weight 16 tons, V1 100 kt, normal/icing condition
If failure before V1, you call STOP and stop the aircraft
If failure at or after V1, we continue runway heading until 1000 ft, acceleration altitude, then right turn TOE climbing 4000 ft, MSA is 3000 ft,
If no question, briefing complete*. 

3.8.4. Arrival briefing

Top of descent (TOD)
- expressed in distance (time for information) and MSA.

Particularities:
- Icing or normal conditions
- NOTAM
- Airport equipment failure...
- Etc...

Alternate & holding time:
- Holding time before diversion

Weather at destination:

1. Visi / RVR compared to minima: airport accessible or not and icing or

Approach procedure:
2. Jeppesen chart N° ___ & date ___
3. Type of approach
4. MSA according to the arrival sector.
5. Flight path and description
6. Descend interception:
   - altitude
   - distance
   - stabilization point
7. Minima
8. Go-around procedure

Radio-navigation setting:
- for the final approach.

Example
*Are you ready for arrival briefing?... Top of descent is 50 DME from BMC at 1456, MEA is 5000 ft. Landing in Bordeaux in normal conditions, without Approach Lights. Holding time before diverting to LFBA is 20'. We have the minima for an ILS runway 23, chart 11-1 of November 14th, effective 27th. MSA is 2100ft within 25 NM of BMC. From LiBRU, standard arrival to reach 3000 ft to inter-
cept localizer. We leave 3000 ft at D9 to pass D4 DB at 1420 ft Stabilization altitude is 1200 ft Decision altitude is 360 ft (set on alti bug) and decision height is 200 ft (set at DH) "SET RIGHT" / "SET LEFT". In case of a go-around we climb straight ahead D4 DME DB, then right turn heading 042 following standard track up to 4000 ft. (check frequencies), NAV 2 ILS active, VOR stand-by, both ADF on BE frequency (check), RMI keys on ADF. After landing we vacate second left (and etc... if needed). If no question, briefing complete.

### 3.9. Navigation policy

#### 3.9.1. Definitions

En route navigation airspaces are now widely organized on the basis of the RNAV (Area Navigation) concept.

RNAV can be defined as a method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of a self contained system capability, or a combination of these.

RNAV navigation is now commonly used for departure and arrival flight phases with more stringent procedures and a better level of accuracy.

RNAV operations permit flight in any airspace without the need to fly directly over ground-based aids.

Flying in RNAV airspaces require additional navigational aircraft capabilities in terms of performance monitoring and alerting.
ATR aircraft have different levels of performance and capabilities depending on their RNAV navigation system equipment and level of certification.

ATR navigation systems (KLN 90 and HT1000) are based on GPS signals or GPS + DME signals. Latest HT1000 installations allow to fly departure, en route, arrival track in RNAV designated area and to conduct non-precision approach on specific GNSS RNAV procedure. Refer to the aircraft AFM to check RNAV capabilities.

Crew qualification is required to conduct RNAV procedures.

Example of local specifications:
B-RNAV for enroute navigation / P-RNAV for TMA departure and arrival procedures

B-RNAV: The Basic Area Navigation (B-RNAV) was introduced to enable en route capacity gains to be achieved with minimal aircraft capacity. It requires aircraft conformance to a track-keeping accuracy of ± 5NM for at least 95% of flight time.

P-RNAV: The Precision Area Navigation (P-RNAV) was introduced for RNAV applications in terminal airspace. It requires aircraft conformance to a track-keeping accuracy of ±1NM for at least 95% of flight time.

In this chapter:
- conventional radio navigation equipment or method refers to the use of VOR/LOC, DME and ADF
- RNAV navigation refers to the use of HT1000 GNSS or KLN 90 GPS receiver or any other RNAV equipment.

3.9.2. General

CM2 initiates power up, set up and verifications of the navigation equipments during the “preliminary cockpit preparation” procedure.

PF performs flight plan and performance data insertion in RNAV system, and VOR, DME, ADF settings during “final cockpit preparation” procedure. Flight crew crosscheck is performed during departure briefing.

PF shall perform every new navigation entries, waypoints selection applying cross check procedure.

PF is responsible for the selection of the appropriate sources (RNAV or V/L) and the application of the navigation display policy (MAP or ARC/ROSE) for each flight phase.

3.9.3. Navigation within RNAV airspace: Departure / En Route / Arrival

Flight crews must ensure that they are properly qualified, and verify the aircraft certification for relevant RNAV operations.

RNAV track is displayed on PF side on EHSI using MAP setting and RNAV source.

On PNF side, radio aid navigation source is selected on EHSI with V/L setting, so as to allow immediate cross-checking or reversion in the event of loss of RNAV navigation capability.

Note: MAP/RNAV setting on both sides generates RNAV amber message on both EHSI. The LNAV mode must be engaged when High Bank speeds are reached. Indeed, in LNAV, the bank angle order (within a 30° limit) is computed independently from the current speed of the aircraft. Thus there is no protection against stall if the aircraft is in LNAV at Low Bank speeds.
The flight crew check RAIM integrity and legs sequence throughout the flight plan.

In addition, the flight crew continuously check aircraft position, and in case of uncertainty or detected failure, must notify ATC and revert to conventional means.

Furthermore, on aircraft with limited RNAV capabilities, the flight crew must inform ATC:

- “Unable P-RNAV”
- “Unable B-RNAV in terminal area”

Each time airspace or navigation procedure specifications exceed GPS/GNSS aircraft certification or crew qualification.

In this case, the flight crew apply “navigation outside RNAV airspace” method.

3.9.4. Navigation by means of conventional radio-navigation: Departure / En Route / Arrival

General

Navigation using conventional methods must be applied:

- When flying outside RNAV or RNP airspace or,
- When aircraft certification or crew qualification cannot meet airspace specifications.

Radio means are selected and set on both sides on PF orders.

VOR or ADF frequency setting requires flight crew callouts to identify:

- Radio navigation station “Name and frequency”,
- Course selected (VOR and ILS),

Radio identification listening is conducted by PNF after each new frequency setting. The VOR mode must be engaged when High Bank speeds are reached. Indeed, in VOR, the bank angle order (within a 30° limit) is computed independently from the current speed of the aircraft. Thus there is no protection against stall if the aircraft is in VOR at Low Bank speeds.

Conventional Radio navigation method

On PF side:  
- set radio aid frequency and course for the current leg.
- set next radio aid frequency on stand by

On PNF side:
- set radio aid frequency and course for the next leg.
- set next radio aid frequency on stand by
Classic:

In this example, CM2 is PF.

ADF / VOR policy: set useful ADF for departure, en route (alternate), and arrival.

Check the RMI pointers to the required setting.

RMI pointers:
- On RMI indicator: VOR / VOR
- On EHSI: ADF / ADF

Note: These settings can be modified according to type of approach / departure.
### 3.10. Radio-communication

- The PNF is responsible for radio-communications.
- Radio-communication may be transferred to PF (if available), on PNF request:
  
  *Example: The PNF listens to the latest ATIS and fills in the data card.*

<table>
<thead>
<tr>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ REQUEST</td>
<td>➤ ANNOUNCE</td>
</tr>
<tr>
<td>“MONITOR VHF 1</td>
<td>“RADIO IS RIGHT (LEFT)</td>
</tr>
<tr>
<td>WITH TOULOUSE CONTROL”</td>
<td>SIDE”</td>
</tr>
</tbody>
</table>

#### RESUMING NORMAL TASK SHARING

- ➤ ANNOUNCE “COMING BACK, I HAVE VHF 1”
- ➤ ANNOUNCE “WE ARE NOW WITH PARIS CONTROL INBOUND TO XXX, RADIO IS LEFT (RIGHT) SIDE”

- Listen before transmitting, write down the newly assigned frequency.
- VHF receivers standard setting:

<table>
<thead>
<tr>
<th>VHF 1</th>
<th>VHF 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE</td>
<td>ATC FREQUENCY</td>
</tr>
<tr>
<td>STBY</td>
<td>NEXT ATC FREQUENCY</td>
</tr>
<tr>
<td></td>
<td>ATIS / 121.5 MHz (cruise)</td>
</tr>
<tr>
<td></td>
<td>OPS FREQUENCY</td>
</tr>
</tbody>
</table>

#### Audio control panel policy:

- Headset not used:
  - VHF 1 key depressed, volume adjusted.
  - VHF 2 volume adjusted on request.
  - LOUDSPEAKER knob: 3 o’clock.
  - INT / RAD switch in neutral position.
  - Handmike used to transmit.
  - If INT key depressed, adjust INT volume: interphone function enabled (flight attendant or mechanic).

- Headset used:
  - VHF 1 key depressed, volume adjusted.
  - VHF 2 volume adjusted on request.
  - LOUDSPEAKER knob: minimum.
  - INT / RAD switch in INT position.
  - Boomset used: to transmit, press PTT on control wheel or select INT / RAD switch on RAD position.
  - INT key must remain in up position.
3.11. Lights policy

- **NAV**  
  Airplane electrically supplied.

- **WINGS**  
  Engine 2 running in hotel mode.

- **BEACON**  
  Propeller rotating.

- **TAXI & T/O**  
  Airplane taxiing.

- **LAND**  
  Line up to FL 100.
  FL 100 to runway vacated.

- **STROBES**  
  Lining up and flight up to runway vacated.

- **LOGO**  
  Company advertisement.
1. Presentation

**PROCEDURES**

Information for:

- Task sharing
- Announcements and callouts
- Guidelines and checklists
- Triggering event for procedures

**Cockpit Panel**

Information for:

- Task explanation
- Flows or scans
- System use
- Documentation

---

3.2. Internal Inspection

- The following procedures are based on operations with GPU available.
- This procedure will be performed prior to positioning the aircraft, after any maintenance or 1000/A.
- An appropriate completion ensures there will be no damage to aircraft and danger to personnel when powering on the system.

**Internal Inspection Flow**

-_check both PLs are in Ground Idle position.
- Use HYD AUX PUMP PB if necessary.
- Check the brake accumulator pressure.
- In case of any emergency situation.
- Check no flag.
- Check the UNDV amber light is extinguished.
- Check both amber arrows are illuminated.
- Pull Stby Horizon prior to switch battery on.
- Check all C/B panels. Reset as applicable.
- Control panel is closed, then MFC 1B, 2B.
- Check auto test: MFC 1A, 2A flashing (only if cargo door is open).
- During the following external inspection.
- To pressurize the system and check possible leakage.
- Order to warm the cabin more quickly.
- Check the FAULT amber light is extinguished.
- Check the fault amber lights on ENG 1 & 2 BLEED PBs and on PACK VALVE 1 & 2 PBs.
- Check the FAULT amber lights are illuminated.
- Check the MAIN ELEC PWR panel: only DC GEN 1 & 2 PB.
- Check the AVAIL green light is illuminated, then depress the PB.
- Check it is in down position, no red light illuminated.
- Check FAULT amber lights are illuminated, only for L/G ECU/EEC 1 & 2: only if cargo door is open.
- Check both PLs are in Ground Idle position.
- Use HYD AUX PUMP PB if necessary.
- Check the brake accumulator pressure.
- In case of any emergency situation.
- Check no flag.
- Check the UNDV amber light is extinguished.
- Check both amber arrows are illuminated.
- Pull Stby Horizon prior to switch battery on.
- Check all C/B panels. Reset as applicable.
- Control panel is closed, then MFC 1B, 2B.
- Check auto test: MFC 1A, 2A flashing (only if cargo door is open).
- During the following external inspection.
- To pressurize the system and check possible leakage.
- Order to warm the cabin more quickly.
- Check the FAULT amber light is extinguished.
- Check the fault amber lights on ENG 1 & 2 BLEED PBs and on PACK VALVE 1 & 2 PBs.
- Check the FAULT amber lights are illuminated.
- Check the MAIN ELEC PWR panel: only DC GEN 1 & 2 PB.
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- Check auto test: MFC 1A, 2A flashing (only if cargo door is open).
- During the following external inspection.
- To pressurize the system and check possible leakage.
- Order to warm the cabin more quickly.
- Check the FAULT amber light is extinguished.
- Check the fault amber lights on ENG 1 & 2 BLEED PBs and on PACK VALVE 1 & 2 PBs.
- Check the FAULT amber lights are illuminated.
- Check the MAIN ELEC PWR panel: only DC GEN 1 & 2 PB.
- Check the AVAIL green light is illuminated, then depress the PB.
- Check it is in down position, no red light illuminated.
- Check FAULT amber lights are illuminated, only for L/G ECU/EEC 1 & 2: only if cargo door is open.
2. Pre-flight preparation procedure

Crew members shall check the following items:

1 – Aircraft condition.
2 – NOTAMs.
3 – Weather briefing.
4 – Airport infrastructure (at destination).
5 – Specifics.
6 – Flight planning.
7 – Fuel planning.
8 – Flight presentation.
9 – Flight attendant briefing.
3. Procedures and associated flows

3.1. Long and short transit

It is the Captain's responsibility to determine whether to perform long or short transit regarding the criteria described hereafter:

- **Flight crew change**
  - **YES**: Long transit
  - **NO**: Short transit

- **Communication between leaving crew and new crew**
  - **NO**: Long transit
  - **YES**: Short transit

- **Crew has left the aircraft**
  - **YES**: Long transit
  - **NO**: Short transit

**Long transit:**

The flight crew must perform:
- Internal inspection 02.02.03 page 2
- External inspection 02.02.03 page 4
- Preliminary cockpit preparation (long transit) 02.02.03 page 16
- Final cockpit preparation 02.02.03 page 22

**Short transit:**

The flight crew must perform:
- External inspection 02.02.03 page 4
- Preliminary cockpit preparation (short transit) 02.02.03 page 16
- Final cockpit preparation 02.02.03 page 22

For external inspection, please refer to the "Walk around" software.
3.2. Internal inspection

- The following procedures are based on operations with GPU available*.
- This procedure will be performed prior to powering the aircraft, either by maintenance or CM2, as appropriate completion ensures there will be no damage to aircraft and danger to personnel when powering up the systems.

* Should no GPU be available, please refer to 4.01 p. 1, Hotel mode use.
3.2. **Internal inspection**

- The following procedures are based on operations with GPU available*

- This procedure will be performed prior to powering the aircraft, either by maintenance or CM2, as appropriate completion ensures there will be no damage to aircraft and danger to personnel when powering up the systems.

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM2 ENTERS THE COCKPIT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CARGO DOOR CONTROL</th>
<th>PANEL COVER: CLOSED</th>
<th>CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMERGENCY EQUIPMENT</td>
<td>GEAR PINS: ON BOARD</td>
<td>CHECK</td>
</tr>
<tr>
<td>DOCUMENTATION</td>
<td>C/B: ON BOARD</td>
<td>CHECK</td>
</tr>
<tr>
<td>STBY HORIZON ERECTION KNOB</td>
<td>PULL AND MAINTAINED</td>
<td></td>
</tr>
<tr>
<td>BATTERY</td>
<td>MFC: ON</td>
<td>CHECK</td>
</tr>
<tr>
<td>STBY HORIZON ERECTION KNOB</td>
<td>RELEASED</td>
<td></td>
</tr>
<tr>
<td>VHF 1</td>
<td>PL1 AND 2: GI</td>
<td>ON</td>
</tr>
<tr>
<td>BRAKE HANDLE: PARKING</td>
<td>GUST LOCK: ON</td>
<td></td>
</tr>
<tr>
<td>CL 1 AND 2: FUEL S/O</td>
<td>FLAPS LEVER: CHECK</td>
<td></td>
</tr>
<tr>
<td>EEC 1 and 2: CHECK</td>
<td>LANDING GEAR LEVER: DOWN</td>
<td></td>
</tr>
<tr>
<td>WIPERS</td>
<td>DC EXT POWER PB ON</td>
<td></td>
</tr>
<tr>
<td>NO SMOKING / SEAT BELTS: ON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMER EXIT LIGHTS: ARM</td>
<td>BEACON, NAV, LOGO, WING: ON</td>
<td></td>
</tr>
<tr>
<td>OVBD VALVE: AUTO</td>
<td>FUEL PUMPS: ON FOR 2 SECOND THEN OFF</td>
<td></td>
</tr>
<tr>
<td>AIR PANEL: WHITE LIGHTS EXTINGUISHED</td>
<td>HYD AUX PUMP PB: DEPRESSED</td>
<td></td>
</tr>
</tbody>
</table>

* Should no GPU be available, please refer to 4.01 p. 1, Hotel mode use.
NORMAL PROCEDURES
STANDARD OPERATING PROCEDURES

CARGO DOOR CTL panel cover: CLOSED
If opened, only self test of MFC 1B, 2B when the battery is switched ON.

EMERGENCY EQUIPMENT : CHECK
Check :
- exit hatch closed, handle locked and safetied, escape rope stowed.
- life jackets stowed (if installed).
- axe, flashlights, smoke goggles and oxygen masks stowed.
- portable fire extinguisher safetied and pressure within the green area.
- L/G emergency handle stowed, cover closed.
- protective gloves.

GEAR PINS : ON BOARD
Check the 3 gear pins stowed behind the F/O seat.

DOCUMENTATION : ON BOARD

COCKPIT

1. C/B PANELS: CHECK
Check all C/B panels. Reset as applicable.

2. STANDBY HORIZON ERECTION KNOB: PULLED AND MAINTAINED

3. BATTERY: ON
Pull Stby Horizon prior to switch battery on. Check both amber arrows are illuminated. Check the UNDV amber light is extinguished.

4. AUTO TEST MFC: CHECKED
Check auto test: MFC 1A, 2A flashing (only if cargo door control panel is closed), then MFC 1B, 2B.

5. STANDBY HORIZON ERECTION KNOB: RELEASED
Check no flag.

6. VHF 1: ON
In case of any emergency situation.

7. BRAKE HANDLE: PARKING
Check the brake accumulator pressure. Use HYD AUX PUMP PB if necessary.

8. PL 1 & 2: GI
Check both PLs are in Ground Idle position.

9. GUST LOCK: ON
Check it is fully engaged.

10. CL 1 & 2: FUEL S/O
Check both CLs are in Fuel Shut off position.

11. FLAPS LEVER: CHECK POSITION
Should be at 0°.

12. ECU/EEC 1 & 2: PB DEPRESSED IN
Check FAULT amber lights are illuminated, only for ECU.

13. LANDING GEAR LEVER: DOWN
Check it is in down position, no red light illuminated.

14. CAPTAIN & F/O WIPERS: OFF

15. DC EXT PWR: ON
Check the AVAIL green light is illuminated, then depress the PB.
Check the MAIN ELEC PWR panel: only DC GEN 1 & 2 FAULT amber lights are illuminated.

16. NO SMKG & SEAT BELTS SIGNS: ON

17. EMER EXIT LT: ARM
Check the DISARM amber light is extinguished.

18. NAV, LOGO (AT NIGHT): ON
To advise ground staff that the aircraft is electrically supplied.

19. FUEL PUMPS 1 & 2: ON FOR A FEW SECONDS, THEN OFF
To pressurize the system and check possible leakage during the following external inspection.

20. AIR PANEL: EXTINGUISH ALL WHITE LIGHTS
Check the FAULT amber lights on ENG 1 & 2 BLEED PBs and on PACK VALVE 1 & 2 PBs.

21. OVBD VALVE: AUTO
Check the FAULT amber light is extinguished. In cold weather operation, FULL CLOSED can be set in order to warm the cabin more quickly.

22. HYD AUX PUMP PB: DEPRESSED
To pressurize the system and check possible leakage during the following external inspection.

INTERNAL INSPECTION FLOW

1. 72 PEC
2. 42 PEC
3. 72 not PEC

Circuit Breakers
3.3. External inspection

During this inspection, the CM1 must perform and check the following:

- Cabin inspection (safety device, emergency exit, holds, smoke detector, door).
- Overall condition of the aircraft.
- Visible components.
- Flight equipment.
- Aircraft clear of frost, ice, and snow.
- Memorization of surfaces position to compare with command levers position.
- Hydraulic, oil or fuel leaks (especially puddles on the ground).
- Tyres condition, brakes and shock absorbers.
- Access doors closed and latched.

Upon completion of inspection:

- PNF returns to the cockpit
1 – Main left landing gear and fairing

- Park brake accumulator pressure (check minimum 1600psi)
- 6 maintenance doors (closed)
- Gear door (check, fixed, no impact)
- Beacon (condition, window not broken) and flashing if selected ON
- Landing gear structure (check, no crack, no oil)
- Hydraulic lines (check, no leak)
- Wheel and tires (condition, no crack, inflation)
- Brake wear detector (check indicator out of bolt)
- Brake temperature sensor (check plugging in)
- Uplock (open)
- Safety pin removed
- Wheel well (condition, no leak)
### Normal Procedures

#### Standard Operating Procedures

- **Free fall assister**: Check the red marker of the pressure indicator is not visible.

- **Landing light**: Condition, window not broken.

- **Pack ram air inlet**: Check unobstructed.

- **Magnetic fuel level (in)**:

- **TAT prob (check)**

#### 2 – Left wing trailing edge

- **Banana seal**: Check unobstructed and not damaged.

- **Exhaust nozzle**: Unobstructed.

- **Inner/outer flaps uncoupling control system**: Check indicator visible.
### 3 – Left wing leading edge

- Flaps position (check the position in accordance with the flaps lever)
- Flaps (condition, fixed, no impact)
- 5 static dischargers (check they are in place, not broken)
- Aileron and tab (check, fixed, no impact)
- Horn (condition)
- Nav and strobe lights (condition, window not broken) and illuminated if ON
- Magnetic fuel level in, wing de-icing boots (no tear, no blister, no peeling)
- Fuel vent NACA inlet (clear, unobstructed)
- Ice detector (check, in place)
- Wing de-icing boots (no tear, no blister, no peeling, varnish)

### 4 – Left engine

- Left cowls (closed, latched)
5 – Left forward fuselage

- Engine de icing boots (no tear, no oil)
- Engine air intake (clear, unobstructed)
- Oil cooler air intake (clear, unobstructed)
- Propeller (feathered, condition, free rotation, no impact, no oil, de-icer)
- Spinner (secure, spinner indicator aligned with propeller indicator, no impact)
- Inner wing leading edge and fairing (condition)
- Emergency exit (check closed)
- Emergency light (condition, window not broken)
- Wing light (condition, window not broken)
- Avionics vent overboard valve (open)
Antennae (check in place, no impact)

Cargo door (closed, latched)

Cargo door operating panel (closed)

Bottle overboard discharge indicator (green in normal status)

Cockpit communication hatch (closed)

Angle of attack (condition)

Pitot probes and covers (check, removed)

Icing evidence probe (condition)

Static ports (clear)

6 – Nose

Wipers (condition, in place, position)

Static dischargers (check)

Radome and latches (check, fixed, no impact)
### 7 - Right forward fuselage

<table>
<thead>
<tr>
<th>Description</th>
<th>Condition</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nose wheel steering</td>
<td>condition</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>Nose gear wheels and tyres</td>
<td>condition, no crack, inflation</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>Nose gear structure</td>
<td>check, no crack</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>2 nose gear doors</td>
<td>closed, fixed, no impact</td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>Taxi and T/O lights</td>
<td>condition, window not broken</td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>Wheel well</td>
<td>condition, no leak</td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td>Hydraulic lines</td>
<td>condition, no leak</td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
<tr>
<td>Safety pin</td>
<td>removed</td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td>Angle of attack</td>
<td>condition</td>
<td><img src="image9.png" alt="Image" /></td>
</tr>
<tr>
<td>Static ports</td>
<td>clear</td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
<tr>
<td>Pilot probes and covers</td>
<td>check, removed</td>
<td><img src="image11.png" alt="Image" /></td>
</tr>
<tr>
<td>TAT probe</td>
<td>check</td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td>Ext DC and AC elect power access</td>
<td>check</td>
<td><img src="image13.png" alt="Image" /></td>
</tr>
<tr>
<td>Emergency exit</td>
<td>check closed</td>
<td><img src="image14.png" alt="Image" /></td>
</tr>
<tr>
<td>Wing light</td>
<td>condition, window not broken</td>
<td><img src="image15.png" alt="Image" /></td>
</tr>
<tr>
<td>Emergency light</td>
<td>check, window not broken</td>
<td><img src="image16.png" alt="Image" /></td>
</tr>
</tbody>
</table>
8 – Right engine

Right cowls (closed, latched)

Inner wing leading edge and fairing (condition)

Engine de-icing boots (no tear, no oil)

Engine air intake (clear, unobstructed)

Oil cooler air intake (clear, unobstructed)

Propeller (feathered condition, free rotation, no impact, no oil, de-icer)

Spinner (secure, spinner indicator aligned with propeller indicator, no impact)

Right cowls (closed, latched)

9 – Right wing leading edge

Refuelling point access door (closed)

Wing de-icing boots (no tear, no blister, no peeling, varnish)
Magnetic fuel level in
Fuel vent NACA inlet (clear, unobstructed)

Horn (condition)
Nav and strobe lights (condition, window not broken) and illuminated if ON

10 – Right wing trailing edge

Aileron and tab (check, fixed, no impact)
5 static dischargers (check in place, not broken)

Flaps position (check position is in accordance with the flaps lever)
Flaps (condition, fixed, no impact)

Inner/outer flaps uncoupling control system (check indicator visible)

Exhaust nozzle (unobstructed)
Banana seal (check unobstructed) and not damaged
### 11 – Main right landing gear and fairing

<table>
<thead>
<tr>
<th>Item</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuelling point access door (closed)</td>
<td></td>
</tr>
<tr>
<td>Air conditioning ground access door (closed)</td>
<td></td>
</tr>
<tr>
<td>Pack ram air inlet (check unobstructed)</td>
<td></td>
</tr>
<tr>
<td>Landing light (condition, window not broken)</td>
<td></td>
</tr>
<tr>
<td>Refuelling control access door</td>
<td></td>
</tr>
<tr>
<td>Gear doors (check, fixed, no impact)</td>
<td></td>
</tr>
<tr>
<td>Wheel and tires (condition, no creek, inflation)</td>
<td></td>
</tr>
<tr>
<td>Pack ram air inlet (check unobstructed)</td>
<td></td>
</tr>
<tr>
<td>Landing gear structure (check, no creek, no oil)</td>
<td></td>
</tr>
<tr>
<td>Hydraulic lines (check, no leak)</td>
<td></td>
</tr>
<tr>
<td>Uplock (open)</td>
<td></td>
</tr>
<tr>
<td>Safety pin removed</td>
<td></td>
</tr>
<tr>
<td>Wheel well (condition, no leak)</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Free fall assister</td>
<td>Check the red marker of the pressure indicator is not visible</td>
</tr>
<tr>
<td>Brake temperature sensor</td>
<td>Brake wear detector (check indicator out of bolt)</td>
</tr>
<tr>
<td>VHF antennae</td>
<td>Emergency exit light (condition, window not broken)</td>
</tr>
<tr>
<td>Service door</td>
<td>Service door (closed, fixed, no impact)</td>
</tr>
<tr>
<td>2 outflow valves</td>
<td>Tail skid (check)</td>
</tr>
</tbody>
</table>
## 13 – Tail

- **Flight controls access door (closed)**
- **Horn (condition)**
- **8 static dischargers (check, in place, no break, no burn)**
- **Stabilizer de-icing boots (condition, no tear, no blister, no peeling, varnish)**
- **VOR antenna (check in place, no impact)**
- **Vortex generator (check no impact)**
- **Logo light (condition, window not broken)**
- **Stabilizers, elevators and trims (check, fixed, no impact)**
- **5 static dischargers, fin, rudder, tab (check fixed, no impact)**
- **2 static dischargers, nav and strobe lights (condition, window not broken)**

## 14 – Left aft fuselage

- **Toilet service door (closed)**
- **Cabin door (check closed, fixed, no impact)**
- **Entry emergency light (condition, window not broken)**
- **Drinkable water service door (closed)**
- **Tail prop (check)**

### 72 PEC
- **72 not PEC**
3.4. Preliminary cockpit preparation (1/2)

- Preliminary cockpit preparation is done by CM2 with a GPU connected.

In case of preliminary cockpit preparation with engine 2 in hotel mode, apply the additional standard operating procedure Hotel mode use 02.04.01 pages 01 to 06.

- There are two procedures: for long or for short transits.

- The main approach is to extinguish all white lights, to test all systems and to prepare the cockpit for the flight.

3.4.1. Long transit

3.4.1.1. CM1

**EXTERNAL INSPECTION**

**FUEL X-FEED TEST:**

- **ENG 1 PUMP ON: FEED LO PR 1**
  - Extinguished; FEED LO PR 2 Illuminated

- **FUEL X-FEED in line: FEED LO PR 1 and 2**
  - Extinguished

- **FUEL X-FEED closed: FEED LO PR 1**
  - Extinguished; FEED LO PR 2 Illuminated

- **ENG 2 PUMP ON: FEED LO PR 1 and 2**
  - Extinguished

**ATC RECOMMENDATION:**

In case of dual installation check both systems using:

- system 1 for odd days.
- system 2 for even days.

Example: TRANSPONDER, IGNITION, ADC SWITCH (IF INSTALLED)

3.4.1.2. CM2

**SCAN ON OVERHEAD PANEL**

- **ANNUNCIATOR LIGHT** ................. TEST
- **DOME LIGHT** .......................... AS REQUIRED
- **STANDBY COMPASS LIGHT** ............ OFF
- **STORM LIGHT** .......................... OFF
- **ENG 1 PUMP** ............................ ON
- **FUEL X-FEED** .......................... CHECK
- **ENG 2 PUMP** ............................ ON
- **DOORS** ................................. TEST
- **SPOILER LIGHTS** ...................... EXTINGUISHED
- **LDG GEAR INDICATOR** ............... CHECK
- **TLU** ................................. AUTO
- **ENG 1 FIRE** ............................ 3 TEST
- **EXTERNAL LIGHTS** .................... AS REQUIRED
- **PROP BRAKE** ............................ ON
- **DC/AC PANEL** ......................... CHECK
- **ENG 1 PUMP** ............................ ON
- **FUEL X-FEED** .......................... CHECK
- **ENG 2 PUMP** ............................ ON
- **DOORS** ................................. TEST
- **SPOILER LIGHTS** ...................... EXTINGUISHED
- **ENG 2 FIRE** ............................ 3 TEST

**SCAN ON PEDESTRAL**

- **LIGHTS** ................................. AS REQUIRED
- **DE-ICING/ANTI-ICING** ............... LIGHTS OFF
- **PROBES HEATING** ...................... ON
- **WINDSHIELD HEATING** ............... ON
- **ACW PANEL** ............................. CHECK
- **HYD PANEL** ............................. CHECK
- **EMER LOC XTMR** ...................... AUTO
- **AIR COND PANEL** ..................... CHECK
- **AVIONICS VENT** ....................... AUTO
- **OXYGEN** ................................. CHECK
- **COMPT SMK** ............................. TEST
- **EXHAUST MODE** ....................... RESET
- **ENG 2 FIRE** ............................ 3 TEST

**EXAMPLE:** TRANSPONDER, IGNITION, ADC SWITCH (IF INSTALLED)
### 3.4. Preliminary cockpit preparation (2/2)

**AFTER PEDESTAL PANEL SCAN**

- **DO**
  - **SCAN ON CENTRAL PANEL**
    - FUEL QTY.............................. TEST / CHECK
    - TAT/SAT........................................ CHECK
    - CAP........................................... CLR
    - STBY INSTRUMENTS...................... CHECK
    - PWR MGT................................. T/O
    - SYNCHROPHASER........................... ON
    - FUEL USED................................. ON
    - ENGINE INDICATORS........................... TEST / CHECK
    - ENG PANEL.................................. CHECK
    - CAB PRESS PANEL.......................... CHECK
    - AUTO PRESS...... TEST / LANDING ELEVATION
    - TRIM INDICATOR............................. CHECK
    - FLAPS INDICATOR............................ CHECK
    - STICK PUSHER.............................. DEPRESSED
    - HYDRAULIC........................................ CHECK
  
  **SCAN ON GLARE SHIELD**
  - FD BARS................................. ON
  - NAV 1 AND 2........................... ON / TEST
  - ADJ ........................................ BRT
  
  **SCAN ON LEFT LATERAL PANEL**
  - COCKPIT COM HATCH........................ OPEN
  - NW STEERING............................... ON / GUARDED
  - OXYGEN MASK............................ ON / TEST
  - MARKERS...................................... CHECK
  - AHRS......................................... TEST / LD
  - AUDIO 1 SEL................................. CHECK
  - CAPT SWITCHING PANEL..................... CHECK
  - (E)GPWS.................................... GUARDED
  
  **SCAN ON LEFT INSTRUMENT PANEL**
  - CLOCK........................................ SET
  - AIR SPEED INDICATOR................. CHECK
  - RM/EHSI................................ CHECK
  - EADI........................................ CHECK
  - (E)GPWS ...................................... TEST
  - ALTIMETER................................. SET
  - VERTICAL AIR SPEED....................... CHECK

  **SCAN ON RIGHT LATERAL PANEL**
  - EXTRACT AIR FLOW........................ OPEN
  - OXYGEN MASK............................ TEST
  - AHRS................................. CHECK
  - F/O SWITCHING PANEL..................... CHECK
  - AUDIO 2 SEL................................. CHECK
  
  **SCAN ON RIGHT INSTRUMENT PANEL**
  - (E)GPWS..................................... TEST
  - VERTICAL AIR SPEED....................... CHECK
  - ALTIMETER................................ SET
  - EADI........................................ CHECK
  - RM/EHSI................................ CHECK
  - AIR SPEED INDICATOR................. CHECK
  - CLOCK........................................ SET

---

**ATC RECOMMENDATION:**
- RMI set with VOR bearing
- EHSI set with ADF bearing*

could be selected according to PF decision:

* 1 needle recommended.
3.4. Preliminary cockpit preparation (1/2)

- Preliminary cockpit preparation is done by CM2, with a GPU connected.

In case of preliminary cockpit preparation with engine 2 in hotel mode, apply the additional 01.03.1 standard operating procedure Hotel mode use 02.04.01 pages 01 to 06.

- There are two procedures: for long or for short transits.
- The main approach is to extinguish all white lights, to test all systems and to prepare the cockpit for the flight.

3.4.1. Long transit

CM1

- PRELIMINARY COCKPIT PREPARATION

FUEL X-FEED TEST:
- ENG 1 PUMP ON: FEED LO PR 1 Extinguished; FEED LO PR 2 Illuminated
- FUEL X-FEED in line: FEED LO PR 1 and 2 Extinguished
- FUEL X-FEED closed: FEED LO PR 1 Extinguished; FEED LO PR 2 Illuminated
- ENG 2 PUMP ON: FEED LO PR 1 and 2 Extinguished

ATC RECOMMENDATION:
In case of dual installation check both systems using:
- system 1 for odd days.
- system 2 for even days.

Example: TRANSPONDER, IGNITION, ADC SWITCH (IF INSTALLED)

CM2

- SCAN ON OVERHEAD PANEL

ANNUNCIATOR LIGHT.................. TEST
DOME LIGHT.................. AS REQUIRED
STANDBY COMPASS................. CHECK AND OFF
STORM LIGHT.................. CHECK AND OFF
ENG 1 PUMP.................. ON
FUEL X-FEED.................. CHECK
ENG 2 PUMP.................. ON
DOORS.................. TEST
SPOILER LIGHTS.............. EXTINGUISHED
LDG GEAR INDICATOR............... CHECK
TLU.................. AUTO
ENG 1 FIRE.................. 3 TEST
EXTERNAL LIGHTS................. AS REQUIRED
PROP BRAKE.................. ON
WINDSHIELD HEATING............. ON
ACW PANEL.................. CHECK
HYD PANEL.................. CHECK
EMER LOC XTMR................. AUTO
AIR COND PANEL............... CHECK
AVIONICS VENT............... AUTO
OXYGEN.................. CHECK
COMPT SMK.................. TEST
EXHAUST MODE............... RESET
ENG 2 FIRE.................. 3 TEST

SCAN ON PEDESTRAL

LIGHTS.................. AS REQUIRED
FDEP (if installed)............. FLIGHT NUMBER + DATE
TRIMS.................. TEST AND SET NEUTRAL
ATPCS.................. 2 TESTS
TCAS.................. TEST/STBY
VHF.................. ON/TEST
ADF.................. ON/TEST
TRANSponder.................. STBY/TEST
IDLE GATE.................. PULLED
EMER AUDIO CANCEL........... GUARDED
PL.................. FUEL SO
CL.................. FUEL SO
GUST LOCK.................. ON
AIL LOCK LIGHT............ EXTINGUISHED
RADAR.................. STBY
ECP.................. TEST/SET
GPS.................. ON
MCDU (if installed with the MPC)..... SET
CDLS.................. Daily check
### 3.4. Preliminary cockpit preparation (2/2)

#### AFTER PEDESTAL PANEL SCAN

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>72 PEC</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>42 PEC</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>72 not PEC</strong></td>
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</tr>
</tbody>
</table>

**ATC RECOMMENDATION:**
- RMI set with VOR bearing
- EHSI set with ADF bearing

* 1 needle recommended.

**ATC RECOMMENDATION:**
In case of dual installation check both systems using:
- System 1/a for odd days.
- System 2/b for even days.

Example: TRANSPONDER, IGNITION, ADC SWITCH (IF INSTALLED)

**SCAN ON CENTRAL PANEL**

- FUEL QTY ...................................... TEST / CHECK
- TAT/SAT ...................................... CHECK
- CAP ........................................... CLR
- STBY INSTRUMENTS .......................... CHECK
- PWR MGT ..................................... 1/O
- PEC 1 & 2 ..................................... ON
- SYNCHROPHASER ............................. ON
- FUEL USED .................................. RESET
- ENGINE INDICATORS ....................... TEST / CHECK
- ENG PANEL ................................. CHECK
- CAB PRESS PANEL ........................... CHECK
- AUTO PRESS .... TEST / LANDING ELEVATION
- TRIM INDICATOR ............................ CHECK
- FLAPS INDICATOR .......................... CHECK
- STICK PUSHER .............................. DEPRESSED
- HYDRAULIC ................................. CHECK

**SCAN ON GLARE SHIELD**

- FD BAR ................................. ON
- NAV 1 AND 2 ............................. ON / TEST
- ADU ......................................... BRT

**SCAN ON LEFT LATERAL PANEL**

- COCKPIT COM HATCH ........................ OPEN
- NW STEERING ............................... ON/GUARDED
- OXYGEN MASK .............................. TEST
- MARKERS .................................. TEST / LO
- AHRBS ...................................... CHECK
- AUDIO1 SEL ............................... CHECK
- CAPT SWITCHING PANEL .................. CHECK
- (E)GPWS ................................. GUARDED

**SCAN ON LEFT INSTRUMENT PANEL**

- CLOCK ....................................... SET
- AIR SPEED INDICATOR .................... CHECK
- RMI/EHSI .................................. CHECK
- EADI ................................. CHECK
- (E)GPWS .................................. TEST
- ALTIMETER ................................ SET
- VERTICAL AIR SPEED .................... CHECK
- ADC SWITCH ............................... 1 OR 2

**SCAN ON RIGHT LATERAL PANEL**

- EXTRACT AIR FLOW ......................... OPEN
- OXYGEN MASK .............................. TEST
- AHRBS ...................................... CHECK
- F/O SWITCHING PANEL .................... CHECK
- AUDIO 2 SEL ............................... CHECK

**SCAN ON RIGHT INSTRUMENT PANEL**

- APM (IF INSTALLED) ....................... DAILY TEST
- (E)GPWS .................................. TEST
- VERTICAL AIR SPEED ..................... CHECK
- ALTIMETER ................................ SET
- EADI ........................................ CHECK
- RMI/EHSI .................................. CHECK
- AIR SPEED .................................. CHECK
- CLOCK ....................................... SET
PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (1/4)

OVERHEAD PANEL

1. ANNUNCIATOR LIGHT: TEST
   Check all lights are illuminated (except fuel LO LEVEL and engine gauges).

2. DOME LIGHT: AS REQUIRED
   Check lights off.

3. STANDBY COMPASS: CHECK AND OFF
   Check storm light OFF.

4. STORM LIGHT: CHECK AND OFF
   Check the RUN green light is illuminated, FEED LO PR extinguished and LP VALVE in-line.

5. ENG 1 PUMP: ON
   Check the RUN green light is illuminated, FEED LO PR extinguished and LP VALVE in-line.

6. FUEL X-FEED : CHECK
   Set X-FEED VALVE in-line and check FEED LO PR is extinguished for ENG 2. Then close the X-FEED VALVE.

7. ENG 2 PUMP: ON
   Check the RUN green light is illuminated, FEED LO PR extinguished and LP VALVE in-line.

8. DOORS: TEST
   Depress TEST SW. Check CAB OK and SVCE OK lights illuminate, provided associated doors are opened.

9. SPOILER LIGHTS: EXTINGUISHED

10. LANDING GEAR INDICATORS: CHECK
    Check the control lever is down and that there are 3 green lights.

11. TLU AUTO: CHECK
    Check the toggle switch is in AUTO position, no amber light.

12. ENG 1 FIRE PROTECTION: TEST
    Check ENG 1 fire handle IN and latched. Extinguish any white light.
    Depress SQUIB TEST PB and check both AGENT SQUIB lights illuminate.
    Select TEST switch on FIRE and check:
    - ENG FIRE red light illuminates into associated fire handle.
    - CCAS is activated (CRC + MW + ENG 1 FIRE on CAP)
    - FUEL SO red light illuminates in CL 1 if temporarily selected out of FUEL SO.
    Select TEST switch on FAULT and check:
    - both LOOP A & B FAULT lights illuminate.

13. EXTERNAL LIGHTS: AS REQUIRED
    Set NAV lights ON and LOGO lights ON if during night operation.

14. PROP BRK: ON
    Check the PROP BRK blue light is illuminated.
    If not, depress HYD AUX PUMP PB on the pedestal.
    When the READY green light illuminates, select PROP BRK ON.
    Check the UNLK red light is extinguished.

15. DC / AC PANEL: CHECK
    No amber light, except both DC GEN FAULT lights.

16. CVR: TEST
    Can be performed with GPU, only by depressing the RCDR PB on the pedestal.
    Check the ON blue light illuminates on the PB.
    Depress the TEST PB. Check the needle in the green arc.
    Stop the CVR by depressing the RESET PB on the pedestal.

17. SIGNS PANEL: ON
    Select the NO SMKG and SEAT BELTS switches to ON. Check NO SMK and SEAT BELTS on the memo panel.
    Select EMER EXIT Light to ARM

18. DE-ICING / ANTI-ICING PANEL: CHECK
    Check all lights are extinguished.

19. PROBES / WINDSHIELD HTG PANEL: CHECK
    Check all white lights are extinguished.

20. ACW PANEL: CHECK
    Extinguish any white light.

21. HYD PANEL: CHECK
    Extinguish any white light.
    Check the BLUE and GREEN PUMP LO PR lights are illuminated and other lights are extinguished.
    Select the EMER EXIT Light to ARM.

22. EMER LOC XMTR: AUTO
    Check the toggle switch is in AUTO position, guarded and lockwired.
OVERHEAD PANEL (Cont’d)

22. AIR COND PANEL: CHECK
   - Extinguish any white light
   - Select COMP TEMP selectors as required.

23. AVIONIC VENT: AUTO
   - Check the OVBD VALVE CTL guarded switch is in AUTO position.
   - Check there is no amber nor white light on.

24. OXYGEN PANEL: CHECK
   - Check oxygen high pressure indication.
   - Check the oxygen duration chart in the 2.01.05 to determine there is sufficient quantity for the scheduled flight.
   - Select MAIN SUPPLY ON: check the PB light is extinguished.
   - Check PAX SUPPLY OFF.

25. COMPT SMK: TEST (if installed)
   - Depress the SMK TST PB to check smoke detectors.
   - When testing is over, reset the AVIONICS VENT EXHAUST MODE PB to restart the extract fan.

26. ENG 2 FIRE PROTECTION: CHECK
   - Check ENG 2 fire handle IN and latched.
   - Extinguish any white light:
     - Depress the SQUIB TEST PB and check both AGENT SQUIB lights illuminate.
     - Select TEST switch on FIRE and check:
       - ENG FIRE red light illuminates into associated fire handle.
       - OCAS is activated (CRC + MW + ENG 1 FIRE on CAPI)
       - FUEL SO red light illuminates in CL 2 if temporarily selected out of FUEL SO.
   - Select TEST switch on FAULT and check:
     - both LOOP A & B FAULT lights illuminate.

PEDESTAL

1. LIGHTS: AS REQUIRED
   Adjust lights as required.

2. FDEP (if installed): SET FLIGHT NUMBER + DATE
   Check FDAU time base, adjust if necessary.

3. TRIM: TEST AND SET NEUTRAL
   Daily check, for the first flight of the day:
   - Check PITCH, ROLL and YAW trim operation as follows:
     Check the normal TRIM activation in both directions by simultaneously depressing both control rocker switches.
     For a few seconds, depress each single control rocker switch independently and check the non-activation of the corresponding trim in both directions.

Reset trims as required for take-off.
- Before each flight:
  - Check PITCH, ROLL and YAW trim operation.
  - Check STBY PITCH trim operation, check guarded in OFF position.

4. ATPCS: TEST
   - Turn ATPCS to the left / right and select ARM.
   - Check the ATPCS ARM green light illuminates.
   - Set the ATPCS selector to ENG 1 / ENG 2.
   - Check the ENG 2 / ENG 1 UPTRIM light illuminates and the ARM light extinguishes after 2-15 seconds.

5. TCAS: TEST / STBY

6. VHF 1 AND VHF 2: ON & TEST

7. ADF 1 AND ADF 2: ON & TEST

8. TRANSPOUNDER: STANDBY & TEST
   No. ATC flight identification inserted (if equipped)

9. IDLE GATE: CHECK
   - Check the switch is guarded and locked/wired.

10. EMER AUDIO CANCEL: CHECK GUARDED
    - Check the switch is guarded and locked/wired.

11. PLs: GI
    - Check both PLs in ground idle position.

12. CLs: FUEL S.O.
    - Check both CLs in fuel shut-off position.

13. GUST LOCK: ON
    - Check gust lock is engaged.

14. EFIS CONTROL PANEL(ECP) : TEST / SET
    - Select EADI ON, check composite mode, select EADI OFF.
    - Select EHSI ON, check composite mode.
    - Select EADI ON.
    - Test DH by depressing DH TEST PB.

15. WEATHER RADAR: STBY
    - Set standby.

16. GPS: ON (if installed)

17. MCDU (If installed with the MPC): SET
    - Set the flight number and check FDAU time base, adjust if necessary.

18. COCKPIT DOOR DAILY CHECK (If installed)
    - Refer to QRH - Normal Procedure - 3.02A
PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (3/4)

CENTRAL PANEL

1. **FUEL QTY PANEL: TEST**
   Depress TEST PB and check:
   - MC + SC + FUEL on CAP
   - all lights and displays
   - both LO LVL amber lights illuminated
   - both RUN green lights illuminated on pumps PB.

2. **TAT / SAT / TAS PANEL: CHECK**

3. **CAP: CLR**
   Check amber lights are extinguished.

4. **STBY INSTRUMENTS: CHECK**
   Check there is no flagging.

5. **PWR MGT: TO**
   Check the rotary selector is on TO.

6. **SYNPHR: ON**
   Check the synchrophaser is OFF, white light extinguished.

7. **PEC 1 & 2: ON**
   Check no amber light is illuminated.

8. **FUEL USED: RESET**
   Pull the reset knob to reset the fuel used value.

9. **ENG 1 & 2 INSTRUMENTS: CHECK AND TEST**
   Check:
   - oil press = 0
   - oil temp = realistic indication
   - FF / FU = 0
   - NH = 0
   - ITT = realistic indication
   - NP = 0
   - TG = 0.

10. **ENG PANEL: CHECK**
    EEC / ECU 1 & 2 PBs and ATPCS PB depressed in.

11. **CAB PRESS PANEL: CHECK**
    Check no light is illuminated.
    Check the rotary selector is facing the green mark.

12. **AUTO PRESS PANEL: TEST / CHECK**
    Depress the TEST PB and check:
    - MC + SC + AIR on CAP
    - FAULT amber light illuminated in MODE SEL PB
    - display cycling between -8800 and 18800.

13. **TRIM INDICATOR: CHECK**
    Check neutral setting for roll and yaw axis.

14. **FLAPS INDICATOR: CHECK**
    Check the position according to the flaps lever position and to the position noticed during the external inspection.

15. **STICK PUSHER: CHECK**
    Check no light is illuminated.

16. **HYDRAULIC GAUGES: CHECK**
    Check brake accumulator pressure at 3000 PSI.

GLARESHIELD

1. **FD BARS: ON**
   Check the FD BARS switch in the ON position.

2. **NAV 1 & 2: TEST / ON**

3. **ADU: BRT**
   Adjust ADU brightness as required.
PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (4/4)

CAPT LATERAL PANEL

1. **Cockpit Com Hatch: Open**
   - Must be kept open until engine 1 start, in order to avoid pressurization shocks.

2. **N/W Steering: Check**
   - Check N/W steering guarded switch on N/W steering position.

3. **Oxygen Mask: Test (once a day)**
   - Set the audio control panel INT/RAD selector to INT and adjust the volume.
   - Depress and hold the PRESS TO TEST AND RESET PB (hose and mask charged with oxygen): observe the blinker momentarily turn yellow and must turn dark if there is no leak.
   - Hold the PRESS TO TEST AND RESET PB and press the red clips on each side of the hose (oxygen pressure inflates the harness): observe the blinker momentarily turns yellow and must turn dark if there is no leak.
   - Hold the PRESS TO TEST AND RESET PB and select the EMERGENCY knob (emergency flow is tested): observe the blinker turn yellow during the oxygen flow and must turn dark when the knob is released.

   Note: In these three cases, check that the oxygen flow sounds through the loudspeakers.
   - Check the OXY LO PR light is extinguished on the overhead panel.
   - Set N/100% rocker lever to 100%.

4. **MKR: LO**
   - Set MKR switch to LO.

5. **AHRS: Check**
   - Check the AHRS 1 light is extinguished.

6. **Audio: Check**
   - Check the AUDIO 1 SEL light is extinguished.

7. **CAPT Switching: Check**
   - Check the ATT/HDG, VOR/ILS, and EFIS SG lights are extinguished.

F/O LATERAL PANEL

1. **Extract Airflow: Open**

2. **Oxygen Mask: Test**
   - Same as on the captain side.

3. **AHRS: Check**
   - Check the AHRS 2 light is extinguished.

4. **FO Switching: Check**
   - Check ATT/HDG, VOR/ILS and EFIS SG: depress then reset, check lights are extinguished.

5. **Audio: Check**
   - Check the AUDIO 2 SEL light is extinguished.

F/O INSTRUMENT PANEL

1. **APM (If installed): Test**
   - Daily check must be performed
   - Push and maintain the APM PTT PB for the test duration

2. **(E)GPWS: Test**

3. **VSI: Check**
   - Check there is no flagging and that the pointer indicates zero.

4. **Altimeter: Check**
   - Check there is no flagging.

5. **EADI: Check**

6. **RMI / EHSI: Check**
   - Crosscheck heading information.
   - Select RMI on VOR 1 and VOR 2.

CAPT INSTRUMENT PANEL

1. **Clock: Check**
   - Check the time, adjust if necessary.

2. **ASI: Check**
   - Check:
     - No flag
     - Airspeed pointer indicates zero
     - VMO pointer indicates 250kt.

3. **RMI / EHSI: Check**
   - Crosscheck heading information.
   - Select RMI on VOR 1 and VOR 2.
3.4.2. Short transit

Flight events

CM1

CM2

ENGINE 1 FIRE ................................... 3 TESTS
ENGINE 2 FIRE ................................... 3 TESTS
FDEP (If installed) .................. FLIGHT NUMBER + DATE
MCDU (If installed) .................. SET
FUEL QTY ................................ TEST/CHECK
FUEL USED .................................. RESET
AUTOPRESS .................. TEST/LANDING ELEVATION
COCKPIT COM HATCH .................. OPEN
**PRELIMINARY COCKPIT PREPARATION FLOW (SHORT TRANSIT)**

1. **ENG 1 FIRE PROTECTION: TEST**
   - Check the ENG 1 fire handle is IN and latched.
   - Extinguish any white light.
   - Depress the SQUIB TEST PB and check both AGENT SQUIB lights illuminate.
   - Select TEST switch on FIRE and check:
     - ENG FIRE red light illuminates into associated fire handle.
     - CCAS is activated (CRC + MW + ENG 1 FIRE on CAP)
     - FUEL SO red light illuminates in CL 1 if temporarily selected out of FUEL SO.
   - Select TEST switch on FAULT and check:
     - both LOOP A & B FAULT lights illuminate.

2. **ENG 2 FIRE PROTECTION: CHECK**
   - Check the ENG 2 fire handle is IN and latched.
   - Extinguish any white light:
   - Depress the SQUIB TEST PB and check both AGENT SQUIB lights illuminate.
   - Select TEST switch on FIRE and check:
     - ENG FIRE red light illuminates into associated fire handle.
     - CCAS is activated (CRC + MW + ENG 1 FIRE on CAP)
     - FUEL SO red light illuminates in CL 2 if temporarily selected out of FUEL SO.
   - Select TEST switch on FAULT and check:
     - both LOOP A & B FAULT lights illuminate.

3. **FDEP (If installed): SET FLIGHT NUMBER + DATE**
   - Check FDAU time base, adjust if necessary.

4. **MCDU (If installed with the MPC): SET**
   - Set the flight number and check FDAU time base, adjust if necessary.

5. **FUEL QTY PANEL: TEST and CHECK**
   - Depress the TEST PB and check:
     - MC + SC + FUEL on CAP
     - all lights and displays
     - both LO LVL amber lights illuminated
     - both RUN green lights illuminated on pumps PB
     - check quantity.

6. **FUEL USED: RESET**
   - Pull reset knob to reset fuel used value.

7. **AUTO PRESS PANEL: TEST / CHECK**
   - Depress TEST PB and check:
     - MC + SC + AIR on CAP
     - FAULT amber light illuminated in MODE SEL PB
     - display cycling between -8800 and 18800.

8. **COCKPIT COM HATCH: OPEN**
   - Must be kept open until engine 1 start, in order to avoid pressurization shocks.
3.5. Final cockpit preparation

- **CM1**
  - PRELIMINARY COCKPIT PREPARATION COMPLETE
  - **DO**
    - PARKING BRAKE: ON & PRESSURE
    - FUEL QUANTITY: CHECK
    - MEMO PANEL: CHECK
    - QNH: SET (own & STBY) AND CHECK
  - **DO**
    - ATIS/WEATHER: NOTED
    - TAKE-OFF DATA CARD: 1st part FILLED (1)
    - QNH: SET (OWN) AND CHECK
  - **DO**
    - RADIO NAV & RNAV: SET (according to expected SID)
    - VHF 1 & 2: SET

- **CM2**
  - **DO**
    - MEMO PANEL: CHECK

- **PF**
  - **READ AND DO**
    - WEATHER: CHECK
    - RTD TORQUE: SET
    - ALTIMETERS BUGS: SET & CROSSCHECK
    - LANDING ELEVATION: SET
  - **READ AND DO**
    - OBJ TORQUE: CHECK AMBER BUGS
    - ALTIMETERS BUGS: SET & CROSSCHECK
  - **READ AND DO**
    - VHF 1 & 2: SET

- **PNF**
  - CREW READY FOR TAKE-OFF DATA CARD 1st PART PROCEEDING
  - ALTIMETERS BUGS: SET & CROSSCHECK
  - CREW READY TO PERFORM THE DEPARTURE BRIEFING

- **CM1**
  - **DO**
    - WEATHER: CHECK
    - RTD TORQUE: SET
    - ALTIMETERS BUGS: SET & CROSSCHECK

- **CM2**
  - **DO**
    - ATIS/WEATHER: NOTED
    - TAKE-OFF DATA CARD: 1st part FILLED (1)
    - QNH: SET (OWN) AND CHECK

- **PF**
  - **READ AND DO**
    - WEATHER: CHECK
    - OBJ TORQUE: CHECK AMBER BUGS
    - ALTIMETERS BUGS: SET & CROSSCHECK
    - LANDING ELEVATION: SET

- **CM1**
  - **REQUEST AND ANSWER**
    - "FINAL COCKPIT PREPARATION C/L"

- **CM2**
  - **REQUEST AND ANSWER**
    - "FINAL COCKPIT PREPARATION C/L"

- **PF**
  - **READ AND DO**
    - WEATHER: CHECK
    - OBJ TORQUE: CHECK AMBER BUGS
    - ALTIMETERS BUGS: SET & CROSSCHECK
    - LANDING ELEVATION: SET
FINAL COCKPIT PREPARATION FLOW

CM1

1. PARKING BRAKE: ON
   Set parking brake ON and check brake accumulator pressure.

2. FUEL QUANTITY: CHECK
   Check both tanks are symmetrically loaded and that the total matches the flight plan block fuel.

3. MEMO PANEL: CHECK
   Check NO SMKG, SEAT BELTS and PROP BRK blue lights illuminated.

4. QNH: SET (own & STBY altimeters)
   Check and cross-check with CM2.

CM2

1. ATIS/WEATHER: NOTED

2. TAKE-OFF DATA CARD: 1st PART FILLED
   Fill the weather, Wlim (FOS), acceleration altitude and single engine flight path parts.

3. QNH: SET (own altimeter)
   Check and cross-check with CM1.

PF

1. NAV 1 & 2: SET (GNSS filled, if equipped, please refer to 03.01 p. 2, Preflight.)
   Set NAV 1 & 2, ADF 1 & 2, GNSS (or GPS receiver) according to the expected SID.

2. VHF 1 & 2: SET
   Set VHF 1 & 2 according to the frequencies read on Jeppesen chart.

3. TAKE-OFF DATA CARD: 1st PART PROCESSED

4. OBJECTIVE TORQUES: SET
   Set white bugs on the torque gauges.

5. ALTIMETER BUGS: SET AND CROSS CHECK
   Set altimeter bugs as per the process described in section 01.03 p 18, altimeter setting.

PNF

1. ALTIMETER BUGS: SET AND CROSS CHECK
   Set altimeter bugs as per the process described in section 01.03 p 18, altimeter setting.
3.6. Before propeller rotation (1/2)

Engine 2 start in Hotel mode is decided in accordance with operational requirements and limitations. It is the Captain decision; at the very least the "PRELIMINARY COCKPIT PREPARATION PROCEDURE" for short or long transit shall be completed and the weather recorded and checked.

### Flight events

**READY TO START ENGINE 2 IN HOTEL MODE**

- **CM1**
  - **ANNOUNCE** "GROUND FROM COCKPIT READY TO START ENG 2 IN HOTEL MODE, CONFIRM SERVICE DOOR CLOSED AND AREA CLEAR"
  - **ANNOUNCE** "I AM READY"

**AFTER OUTSIDE VISUAL CHECK**

- **CM1**
  - DO TIMING*, START 2, CHECK ON
  - FOR STARTER LIMITATION TIME, 30 s maxi when starter off (45%NH)
- **CM2**
  - **DO** SERVICE DOOR CLOSED
  - **ANNOUNCE** "RIGHT SIDE CLEAR, READY TO START ENG 2?"

**NH=10% (UNTIL NH=19% IF ITT>200°C)**

- **CM1**
  - **DO** ENGINE PARAMETERS CHECK
- **CM2**
  - **DO** ENGINE PARAMETERS CHECK
  - **ANNOUNCE** "IGNITION"
  - **TIMING** STOP

**NH=25%**

- **CM1**
  - **DO** ENGINE PARAMETERS CHECK
  - **ANNOUNCE** "OIL PRESS"
  - **DO** "45%"
  - **DO** ITT MAX CHECK
  - **ANNOUNCE** "ITT XXX °C"

**NH INCREASING**

- **CM1**
  - **DO** ENGINE PARAMETERS CHECK
  - **ANNOUNCE** "STARTER OFF"
  - **DO** TIMING STOP
  - **ANNOUNCE** "45%"

**NH=45%**

- **CM1**
  - **ANNOUNCE** "STARTER OFF"
  - **DO** TIMING STOP
  - **ANNOUNCE** "45%"

**NH=61.5%**

- **CM1**
  - **DO** DC GEN 2 VOLTAGE CHECK
  - **ANNOUNCE** "GROUND FROM COCKPIT, YOU CAN DISCONNECT GPU"
  - **ANNOUNCE** "PARAMETERS STABILIZED"
  - **ANNOUNCE** "45%"

**PARAMETERS STABILIZED**

- **CM1**
  - **DO** DC GEN 2 VOLTAGE CHECK

---

* "A+B" for the first starting of the day, then for the next starting, "A" for odd days and "B" for even days, to detect ignition system hidden failure
### 3.6. Before propeller rotation (2/2)

The data card 2nd part proceeding, can be performed during final cockpit preparation, if the load and trim sheet has been received.

<table>
<thead>
<tr>
<th>Flight events</th>
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<tbody>
<tr>
<td>LOAD AND TRIM SHEET ON BOARD</td>
<td>►DO LOAD…………………………. CHECK</td>
<td>►DO CM2 crosschecks TOW and TRIM value before filling DATA CARD 2nd part TAKE-OFF DATA CARD…2nd PART FILLED</td>
</tr>
<tr>
<td></td>
<td>►ANNOUNCE “TOW …….., TRIM SETTING………..”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>►DO CROSSCHECK…………. T/O SPEEDS AND TRIM</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CREW READY FOR TAKE-OFF DATA CARD 2nd PART PROCEEDING</td>
<td>►DO SPEED BUGS………………. SET AND CROSSCHECK TRIM…………………………… CROSSCHECK</td>
<td>►READ AND DO SPEED BUGS………………. SET AND CROSSCHECK TRIM………………. SET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASSENGERS AND CARGO ON BOARD</td>
<td>►DO CABIN ATTENDANT REPORT…………RECEIVED CABIN ANNOUNCE ………………….DONE DOORS …………………. CHECK CLOSED CDLS (IF INSTALLED)…………………………. ON SEAT BELTS …………………. ON BEACON …………………. ON</td>
<td>►DO REQUEST START UP CLEARANCE FROM ATC ANNOUNCE AND READ “BEFORE PROPELLER ROTATION C/L” Refer to QRH normal C/L “C/L COMPLETE”</td>
</tr>
</tbody>
</table>
3.6. Before propeller rotation (1/2)

Engine 2 start in Hotel mode is decided in accordance with operational requirements and limitations. It is the Captain decision; at the very least the “PRELIMINARY COCKPIT PREPARATION PROCEDURE” for short or long transit shall be completed and the weather recorded and checked.

**Flight events**

**READY TO START ENGINE 2 IN HOTEL MODE**
- **CM1**
  - **ANNOUNCE**
    - “GROUND FROM COCKPIT READY TO START ENG 2 IN HOTEL MODE, CONFIRM SERVICE DOOR CLOSED AND AREA CLEAR”
  - **ANNOUNCE**
    - “I AM READY”

**AFTER OUTSIDE VISUAL CHECK**
- **CM2**
  - **DO**
    - SERVICE DOOR………………….. CLOSED
    - WING LIGHTS………………….. ON
    - PROP BRAKE………. ON/PROP BRK blue light
    - ENGINE START SELECT … A+B (or A or B)*
    - “A+B” for the first start of the day, then for the next start, “A” for odd days and “B” for even days, to detect ignition system hidden failure
  - **ANNOUNCE**
    - “RIGHT SIDE CLEAR, READY TO START ENG 2?”

**NH=10% (UNTIL NH=19% IF ITT>200°C)**
- **DO**
  - TIMING*…………………………... START
  - START 2 ……………………………... CHECK ON
  - 30 s maxi when starter off (45%NH)

**ITT INCREASING**
- **DO**
  - ENGINE PARAMETERS………………..CHECK

**NH INCREASING**
- **DO**
  - ENGINE PARAMETERS………………..CHECK

**NH=45%**
- **ANNOUNCE**
  - “STARTER OFF”
  - “If not, select rotary selector OFF/START ABORT”
  - **DO**
    - TIMING……………………………… STOP

**NH=61.5%**
- **DO**
  - DC GEN 2 VOLTAGE…………………..CHECK

**PARAMETERS STABILIZED**
- **DO**
  - ENGINE START………………….. OFF/START ABORT
  - DC EXT PWR …………………….. OFF / DISCONNECT
  - DC GEN 2 FAULT………………….. EXTINGUISHED
  - DC BTC …………………………….. CHECK CLOSED
  - BLEED / PACKS / X VALVE ……………… OPEN

**CM1**
- **ANNOUCE**
  - “GROUND FROM COCKPIT, YOU CAN DISCONNECT GPU”

**CM2**
- **DO**
  - ANNOUNCE “RIGHT SIDE CLEAR, READY TO START ENG 2?”
  - ANNOUNCE “STARTER ON”
  - ANNOUNCE “IGNITION”
  - ANNOUNCE “OIL PRESS”
  - ANNOUNCE “45%”
  - ANNOUNCE “ITT XXX °C”
  - ANNOUNCE “PARAMETERS STABILIZED”

---

*For ignition time, it should rise within 10 seconds

* For starter limitation time.
### 3.6. Before propeller rotation (2/2)

The data card 2nd part proceeding, can be performed during final cockpit preparation, if the load and trim sheet has been received.

**Flight events**

<table>
<thead>
<tr>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
</table>
| **LOAD AND TRIM SHEET ON BOARD** | **DO**  
LOAD:................................. CHECK  
**ANNOUNCE**  
“TOW ........, TRIM SETTING.........”  
**DO**  
CROSSCHECK............ T/O SPEEDS AND TRIM |
| **DO**  
CM2 crosschecks TOW and TRIM value before filing DATA CARD 2nd part  
TAKE-OFF DATA CARD............2nd PART FILLED |

**Flight events**

<table>
<thead>
<tr>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
</table>
| **CREW READY FOR TAKE-OFF DATA CARD 2nd PART PROCEEDING** | **DO**  
SPEED BUGS.......................... SET AND CROSSCHECK  
TRIM................................. CROSSCHECK |
| **READ AND DO**  
SPEED BUGS.......................... SET AND CROSSCHECK  
TRIM................................. SET |

**Flight events**

<table>
<thead>
<tr>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
</table>
| **PASSENGERS AND CARGO ON BOARD** | **DO**  
CABIN ATTENDANT REPORT...........RECEIVED  
CABIN ANNOUNCE........................DONE  
DOORS................................. CHECK CLOSED  
CDLS (IF INSTALLED)..................ON  
SEAT BELTS..........................ON  
BEACON.................................ON  
**REQUEST AND ANSWER**  
“BEFORE PROPELLER ROTATION C/L” |
| **DO**  
REQUEST START UP CLEARANCE FROM ATC  
**ANNOUNCE AND READ**  
“BEFORE PROPELLER ROTATION C/L”  
Refer to QRH normal C/L  
“C/L COMPLETE” |
BEFORE PROPELLER ROTATION FLOW (1/3)

CM1
1. MECHANICAL CALL: PERFORMED
   Start timing when CM2 announces “Starter ON”.
2. TIMING: START
   Start timing when CM2 announces “Starter ON”.
3. STARTER 2: CHECK ON
4. ENGINE PARAMETERS: MONITOR
   According to the CM2 callouts.
5. START OFF: CHECK
   At 45% NH, check the Start ON light is extinguished and announce “STARTER OFF” and stop timing.
6. DC GEN 2 VOLTAGE: CHECK
7. MECH CALL: PERFORMED
   When CM2 switches off the external pwr, CM1 ask the mechanic to disconnect the GPU.

CM2
1. "U" CHECK: PERFORMED
   DOORS: CLOSED
   Check the UNLK amber light is extinguished.
   WING LIGHTS: ON, to visually inform that start is in Hotel Mode.
   Fuel Pump N°2: RUN
   PROPELLER BRAKE: ON
   If no AC GPU, press HYD AUX PUMP, in order to get the READY green light, then place the propeller brake switch to ON.
   ENGINE START ROTARY SELECTOR: A+B
2. START PB: DEPRESSED
   START 2 PB: ON
   Depress START 2 PB after a visual check on right side. Announce: “STARTER ON”.
3. CL2: FEATHER
   Advance CL 2 to feather when NH reaches 10% and announce: “FUEL OPEN”.
4. TIMING: START
5. ENGINE PARAMETERS: MONITOR
   When ITT needle increases, announce: “IGNITION”. ITT must increase within 10 sec on CM1 Timing. Otherwise CL2 shut off.
6. ECU FAULT LIGHT: EXTINGUISH
   At 25% NH, check ECU fault light extinguishes, announce “ECU ON”.
7. ENGINE PARAMETERS: MONITOR
   OIL PRESS needle increases, announce “OIL PRESS” At 45% NH, announce “45%”.
8. ENGINE START ROTARY SELECTOR: OFF
   When engine parameters are stabilised, announce “PARAMETERS STABILISED”, then turn the rotary selector to OFF/START ABORT.
9. DC EXTERNAL POWER: OFF / DISCONNECT
   When OFF check that the DC GEN 2 FAULT light extinguishes and BTC still closed.
10. BLEED 2 / PACKS 1+2 / X VALVE: OPEN
    When only one BLEED is on OPEN on ground, X VALVE is opened to supply both packs.
BEFORE PROPELLER ROTATION FLOW (2/3)

CM1
1. LOAD AND TRIM SHEET: CHECK
   Check and announce TOW and Trim setting.

PNF
- SPEED BUGS: SET
  Set speed bugs and cross-check.

CM2
- TAKE-OFF DATA CARD: 2ND PART FILLED
  Fill TOW, speeds and trim setting parts.

PF
- DATA CARD 2ND PART PROCEEDING
- SPEED BUGS: SET
  Set speed bugs and cross-check.
- TRIM: SET
**BEFORE PROPELLER ROTATION FLOW (3/3)**

**CM1**

1. **DOORS: CLOSED**
   Check the UNLK amber light extinguished.

2. **CDLS (if installed): ON**
   The control switch located behind the first officer is ON.
   On the cockpit door control panel (pedestal), the toggle switch is in the “close” position and the “Open” light is off.

3. **SEAT BELTS: ON**

4. **BEACON LIGHT: ON**
   As propellers will rotate, beacon lights must be switched ON.
3.7. Before taxi (1/2)

**Flight events**

**CM1**

- **START UP CLEARANCE RECEIVED**
  - ORDER
    - "BEFORE TAXI PROCEDURE"
  - ANNOUNCE
    - "GROUND FROM COCKPIT PARKING BRAKE IS ON, READY TO RELEASE PROPELLER BRAKE, CONFIRM CHOCKS ON, DOORS CLOSED, AIRCRAFT CLEAR"
  - ANNOUNCE
    - "RIGHT SIDE CLEAR?"
  - DO
    - HYD AUX PUMP............................ DEPRESS
    - PROP BRAKE........................... CHECK READY LIGHT ON
  - DO
    - PROP BRAKE............................ OFF
    - NP STABILIZED.......................... CHECK
  - ORDER
    - "CL 2 MAX RPM"

**CM2**

- **WHEN NP STABILIZED AROUND 71 %**
  - ANNOUNCE (AFTER VISUAL CHECK)
    - "ROTATION"
  - DO
    - CL 2............................................. MAX RPM
  - ANNOUNCE
    - "LOW PITCH"

- DO
  - ACW GEN 2 FAULT....................... EXTINGUISHED
  - ACW BTC................................. CLOSED
  - HYDRAULIC PANEL...................... NO AMBER LIGHT
  - ANTI ICING............................... ON if icing cond.
  - HYD INDICATORS....................... 3 X 3000PSI
  - ANTI SKID................................. TEST

**ENG 1 START**: FOR TRAINING PURPOSE ENG 1 START ON APRON IS DEPICTED. Please refer to 04.06 p.1, Start up engine n°1 during taxiing.

**CM1**

- **ENGINE 1 START**
  - ANNOUNCE
    - "GROUND FROM COCKPIT PARKING BRAKE IS ON, READY TO START ENG 1, CONFIRM CHOCKS ON, DOORS CLOSED, AIRCRAFT CLEAR"
  - ANNOUNCE
    - "LEFT SIDE CLEAR, I AM READY"

- DO
  - TIMING*..................................... START
  - START 1.................................... CHECK ON

- * For starter limitation time , 30 s maxi when starter off (45% NH)

**CM2**

- **DO ("U" CHECK)**
  - DOORS........................................... CLOSED
  - ENGINE START SELECT............. A+B (or A or B)*
  - "A+B" for the first start of the day, then for the next start, "A" for odd days and "B" for even days, to detect ignition system hidden failure.

- ANNOUNCE
  - "CONFIRM LEFT SIDE CLEAR, READY TO START ENG N° 1?"

- DO
  - START 1 PB................................. DEPRESSED

- ANNOUNCE
  - " STARTER ON"
### Flight events

<table>
<thead>
<tr>
<th>NH = 10% (UNTIL NH=19% IF ITT&gt;200°C)</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINE PARAMETERS ..................... CHECK</td>
<td>DO AND ANNOUNCE CL 1………………………… FEATHER TIMING*……………………… START “FUEL OPEN&quot;</td>
<td></td>
</tr>
<tr>
<td>ITT INCREASING</td>
<td>ANNOUNCE “IGNITION” TIMING …………………………………… STOP</td>
<td>ANNOUNCE When FAULT amber light extinguished “ECU”</td>
</tr>
<tr>
<td>NH = 25%</td>
<td>ENGINE PARAMETERS ..................... CHECK</td>
<td>DO AND ANNOUNCE ENGINE PARAMETERS ………………. CHECK “OIL PRESS”</td>
</tr>
<tr>
<td>42 not PEC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH INCREASING</td>
<td>ENGINE PARAMETERS ..................... CHECK</td>
<td>DO AND ANNOUNCE ENGINE PARAMETERS ………………. CHECK “OIL PRESS”</td>
</tr>
<tr>
<td>NH = 45%</td>
<td>ANNOUNCE “STARTER OFF”</td>
<td>ANNOUNCE “45%”</td>
</tr>
<tr>
<td>* If not, rotary selector OFF/START ABORT</td>
<td>DO ITT MAX…………………………………. CHECK</td>
<td>DO ITT MAX…………………………………. CHECK</td>
</tr>
<tr>
<td>DO TIMING ……………………………………. STOP</td>
<td>ANNOUNCE “ITT XXX °C”</td>
<td>ANNOUNCE “ITT XXX °C”</td>
</tr>
<tr>
<td>NH = 61.5%</td>
<td>ENGINE PARAMETERS ..................... CHECK</td>
<td>ANNOUNCE “PARAMETERS STABILIZED”</td>
</tr>
<tr>
<td>PARAMETERS STABILIZED</td>
<td>ORDER “CL 1 MAX RPM”</td>
<td>ANNOUNCE “PARAMETERS STABILIZED”</td>
</tr>
<tr>
<td>WHEN NP STABILIZED AROUND 71%</td>
<td>DO COCKPIT COM HATCH…………………..CLOSE</td>
<td>DO ENGINE START……………..OFF &amp;START ABORT DC GEN 1 FAULT………………. EXTINGUISHED DC BTC………………. CHECK EXTINGUISHED BLEED / PACKS ………. LIGHTS EXTINGUISHED</td>
</tr>
<tr>
<td>PROCEDURE COMPLETE</td>
<td>REQUEST AND ANSWER “BEFORE TAXI CHECKLIST”</td>
<td>ANNOUNCE “BEFORE TAXI PROCEDURE COMPLETE”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ANNOUNCE AND READ “BEFORE TAXI CHECKLIST” Refer TO QRH 6.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ANNOUNCE “C/L COMPLETE”</td>
</tr>
</tbody>
</table>

* For ignition time, ITT should rise within 10 seconds
### 3.7. Before taxi (1/2)

**Flight events**

<table>
<thead>
<tr>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>START UP CLEARANCE RECEIVED</strong></td>
<td></td>
</tr>
<tr>
<td>➤ ORDER</td>
<td>➤ ANSWER</td>
</tr>
<tr>
<td>&quot;BEFORE TAXI PROCEDURE&quot;</td>
<td>&quot;RIGHT SIDE CLEAR&quot;</td>
</tr>
<tr>
<td>➤ ANNOUNCE</td>
<td></td>
</tr>
<tr>
<td>&quot;GROUND FROM COCKPIT PARKING BRAKE IS ON, READY TO RELEASE PROPELLER BRAKE, CONFIRM CHOCKS ON, AIRCRAFT CLEAR&quot;</td>
<td></td>
</tr>
<tr>
<td>➤ ANNOUNCE</td>
<td>➤ ANNOUNCE (AFTER VISUAL CHECK)</td>
</tr>
<tr>
<td>&quot;RIGHT SIDE CLEAR?&quot;</td>
<td>&quot;ROTATION&quot;</td>
</tr>
<tr>
<td>➤ DO</td>
<td>➤ DO</td>
</tr>
<tr>
<td>HYD AUX PUMP........................... DEPRESS</td>
<td>CL 2............................................. AUTO</td>
</tr>
<tr>
<td>PROP BRAKE ....................READY LIGHT ON</td>
<td></td>
</tr>
<tr>
<td>➤ DO</td>
<td>➤ ANNOUNCE</td>
</tr>
<tr>
<td>PROP BRAKE ....................................... OFF</td>
<td>&quot;SINGLE CHANNEL............. LOW PITCH&quot;</td>
</tr>
<tr>
<td>NP STABILIZED............................ CHECK</td>
<td></td>
</tr>
<tr>
<td>➤ ORDER</td>
<td>➤ DO</td>
</tr>
<tr>
<td>&quot;CL 2 AUTO&quot;</td>
<td>ACW GEN 2 FAULT.................. EXTINGUISHED</td>
</tr>
<tr>
<td></td>
<td>ACW BTC........................................ CLOSED</td>
</tr>
<tr>
<td>WHEN NP STABILIZED AROUND 71%</td>
<td>HYDRAULIC PANEL............ NO AMBER LIGHT</td>
</tr>
<tr>
<td></td>
<td>ANTI ICING .......................... ON if icing cond.</td>
</tr>
<tr>
<td></td>
<td>HYD INDICATORS....................... 3 X 3000PSI</td>
</tr>
<tr>
<td></td>
<td>ANTISKID........................................ TEST</td>
</tr>
<tr>
<td></td>
<td>FLAPS.................................................. 15</td>
</tr>
</tbody>
</table>

ENG 1 START: FOR TRAINING PURPOSE ENG 1 START ON APRON IS DEPICTED. Please refer to 04.06 p.1, Start up engine n°1 during taxiing.

**Flight events**

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<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGINE 1 START</strong></td>
<td></td>
</tr>
<tr>
<td>➤ ANNOUNCE</td>
<td>➤ (<em>U</em> CHECK)</td>
</tr>
<tr>
<td>&quot;GROUND FROM COCKPIT PARKING BRAKE IS ON, READY TO START ENG 1, CONFIRM CHOCKS ON, DOORS CLOSED, AIRCRAFT CLEAR&quot;</td>
<td>DOORS............................................. CLOSED</td>
</tr>
<tr>
<td>➤ ANNOUNCE</td>
<td>ENGINE START SELECT ...... A+B (or A or B)*</td>
</tr>
<tr>
<td>&quot;LEFT SIDE CLEAR, I AM READY&quot;</td>
<td><strong>&quot;A+B&quot;</strong> for the first starting of the day, then for the next starting, <strong>&quot;A&quot;</strong> for odd days and <strong>&quot;B&quot;</strong> for even days, to detect ignition system hidden failure</td>
</tr>
<tr>
<td>➤ DO</td>
<td>➤ ANNOUNCE</td>
</tr>
</tbody>
</table>
| TIMING*.............................. START | "CONFIRM LEFT SIDE CLEAR, READY TO START ENG N° 1?"

* For starter limitation time, 30 s max when starter off (45%NH) |

<table>
<thead>
<tr>
<th></th>
<th>➤ DO</th>
<th>➤ ANNOUNCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMING*.................................. START</td>
<td>STATER 1 PB.......................... DEPRESSED</td>
<td>&quot;STARTER ON&quot;</td>
</tr>
</tbody>
</table>
### 3.7. Before taxi (2/2)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH = 10% (UNTIL NH=19% IF ITT&gt;200°C)</td>
<td>▶ <strong>DO</strong> ENGINE PARAMETERS ................. CHECK</td>
<td>▶ <strong>DO AND ANNOUNCE</strong> Cl 1.......................... FEATHER TIMING*.......................... START FUEL OPEN</td>
</tr>
<tr>
<td><strong>ITT INCREASING</strong></td>
<td>▶ ANNOUNCE <strong>IGNITION</strong> STOP</td>
<td>*For ignition time, ITT should rise within 10 seconds</td>
</tr>
<tr>
<td>NH INCREASING</td>
<td>▶ <strong>DO</strong> ENGINE PARAMETERS ................. CHECK</td>
<td>▶ <strong>DO AND ANNOUNCE</strong> ENGINE PARAMETERS .......... CHECK OIL PRESS</td>
</tr>
<tr>
<td>NH = 45%</td>
<td>▶ <strong>ANNOUNCE</strong> STARTER OFF''  &quot;If not, select rotary selector OFF/START ABORT ▶ <strong>DO</strong> TIMING ........................................... STOP</td>
<td>▶ <strong>ANNOUNCE</strong> 45%  ▶ <strong>DO</strong> ITT MAX ........................................... CHECK</td>
</tr>
<tr>
<td>NH = 61.5%</td>
<td>▶ <strong>ANNOUNCE</strong> PARAMEtERS STABILIZED</td>
<td>▶ <strong>ANNOUNCE</strong> ITT XXX °C</td>
</tr>
<tr>
<td><strong>PARAMETERS STABILIZED</strong></td>
<td>▶ <strong>ORDER</strong> &quot;CL 1 AUTO&quot;</td>
<td>▶ <strong>DO</strong> ENGINE START ............ OFF START ABORT DC GEN 1 FAULT................. EXTINGUISHED DC BTC .................. CHECK EXTINGUISHED BLEED / PACKS ........... LIGHTS EXTINGUISHED</td>
</tr>
<tr>
<td>When NP STABILIZED AROUND 71%</td>
<td>▶ <strong>DO</strong> COCKPIT COM HATCH ................. CLOSE</td>
<td>▶ <strong>DO</strong> CL 1 .............................. AUTO ▶ <strong>ANNOUNCE</strong> &quot;SINGLE CHANNEL........... LOW PITCH&quot;</td>
</tr>
<tr>
<td><strong>PROCEDURE COMPLETE</strong></td>
<td>▶ <strong>REQUEST AND ANSWER</strong> BEFORE TAXI CHECKLIST</td>
<td>▶ <strong>CHECK</strong> ACW GEN 1 .............................. ON LINE OVERHEAD PANEL DARK (EXCEPTED THE FAULT LIGHT ON EXHAUST MODE PB FOR 2 MINUTES)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ <strong>ANNOUNCE</strong> BEFORE TAXI PROCEDURE COMPLETE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ <strong>ANNOUNCE AND READ</strong> BEFORE TAXI CHECKLIST Refer TO QRH 6.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ <strong>ANNOUNCE</strong> C/L COMPLETE</td>
</tr>
</tbody>
</table>
**CM1**

1. **HYD AUX PUMP PB: DEPRESSED**
   - Press PB to get the PROP BRK READY light on.

2. **PROP BRK SWITCH: OFF**
   - After outside visual check.
   - Check the ready light
   - PROP BRK SWITCH set to OFF
   - Check UNLOCK extinguished after maximum 15 seconds.

3. **ENGINE PARAMETERS: MONITOR**
   - NP stabilized

**CM2**

1. **CL 2: MAX RPM (4NP, 7NP) / AUTO (4P, 7P)**

2. **PEC SINGLE CHANNEL TEST: CHECK**
   - Check SGL CH is illuminated then extinguished.

3. **LO PITCH LIGHT: ILLUMINATED**

4. **ENGINE PARAMETERS: MONITOR**

5. **ACW GEN 2: ON LINE**
   - When parameters stabilised, check ACW GEN 2 on line
   - BTOs closed.

6. **HYDRAULIC PANEL: DARK**

7. **ANTI-ICING: ON**
   - When icing conditions prevail on take-off

8. **ACCUMULATORS GAUGES: 3 x 3000 PSI**

9. **ANTISKID: TEST**
   - Check MC + SC + WHEELS and FFFF appearing during 6 seconds.

10. **FLAPS 15°: SELECTED**
BEFORE TAXI FLOW (2/2)

CM1
1. **MECH CALL: PERFORMED**
   Check ground clearance with the mechanic.
2. **“LEFT SIDE CLEAR”**
   Left visual check.
3. **TIMING: START**
   Start timing when CM2 depress.
4. **TIMING: STOP**
   Stop timing when STARTER 1 extinguishes.
5. **COCKPIT COM HATCH**
   CLOSE.

CM2
1. **“U” CHECK: PERFORMED**
   Check doors closed, ELEC FUEL PUMP 1 runs, BEACON on.
2. **ENGINE START ROTARY SELECTOR: A+B (or A or B) START 1 PB: ON**
   Depress START 1 PB after a visual check on right side.
3. **CL 1: FEATHER**
   Advance CL 1 to feather when NH reaches 10%.
4. **TIMING: START**
   Start timing when CL1 is set to FEATHER and stop when ignition is confirmed, in order to monitor ignition time, maximum 10 sec.
5. **ENGINE PARAMETERS: MONITOR**
   When ITT needle increases, announce: “IGNITION”.
6. **ECU FAULT LIGHT: EXTINGUISH**
   At 25% NH, check ECU fault light extinguishes, announce “ECU ON”.
7. **ENGINE PARAMETERS: MONITOR**
   OIL PRESS needle increases, announce “OIL PRESS” at 45% NH, announce “45%”.
8. **ENGINE START ROTARY SELECTOR: OFF**
   When engine parameters are stabilized, announce “PARAMETERS STABILIZED”, then turn the rotary selector to OFF/START ABORT.
9. **CL 1: MAX RPM/AUTO**
10. **PEC SINGLE CHANNEL TEST: CHECK**
    Check SGL CH illuminated then extinguished.
11. **LO PITCH LIGHT: ILLUMINATED**
12. **ACW GEN 1: ON LINE**
    Check ACW BTCs OPEN.
### 3.8. Taxi

**Flight events**

- **CM1**
  - **READY TO TAXI**
    - ORDER: "REQUEST TAXI CLEARANCE"
  - **TAXI CLEARANCE RECEIVED**
    - ANNOUNCE: "GROUND FROM COCKPIT, READY TO TAXI, YOU CAN REMOVE CHOCKS AND DISCONNECT"
  - **WHEN GROUND STAFF IN SIGHT ON CAPTAIN’S SIDE**
    - ORDER: "REQUEST TAXI CLEARANCE"
    - ANNOUNCE:
      - "GROUND FROM COCKPIT, READY TO TAXI, YOU CAN REMOVE CHOCKS AND DISCONNECT"
      - "TAXI CLEARANCE REQUESTED"
      - "TAXI PROCEDURE COMPLETE"
      - "REQUEST AND ANSWER "TAXI CHECKLIST"
      - "ANNOUCE "C/L COMPLETE"

- **CM2**
  - **READY TO TAXI**
    - ORDER: "REQUEST TAXI CLEARANCE"
  - **TAXI CLEARANCE RECEIVED**
    - ANNOUNCE: "GROUND FROM COCKPIT, READY TO TAXI, YOU CAN REMOVE CHOCKS AND DISCONNECT"
  - **WHEN GROUND STAFF IN SIGHT ON CAPTAIN’S SIDE**
    - ORDER: "REQUEST TAXI CLEARANCE"
    - ANNOUNCE:
      - "GROUND FROM COCKPIT, READY TO TAXI, YOU CAN REMOVE CHOCKS AND DISCONNECT"
      - "TAXI CLEARANCE REQUESTED"
      - "TAXI PROCEDURE COMPLETE"
      - "REQUEST AND ANSWER "TAXI CHECKLIST"
      - "ANNOUCE "C/L COMPLETE"

**BRAKES CHECK**:
- For passenger comfort, the following procedure can be used:
  - Set taxi power
  - Parking brake handle from ON to EMER position
  - Then CM 2 checks brakes (parking brake released)
  - Then CM 1 checks brakes (CM 2 releases) and CM 1 starts to taxi.

**ON TAXIWAY**

- **CM1**
  - ORDER: "TAXI PROCEDURE"
  - DO:
    - INSTRUMENTS: CHECK
    - Rudder cam: Centered
    - HDG MODE: SELECTED
    - LO BANK: SELECTED
    - IAS MODE: SELECTED
    - IAS: V2 + 5 kt SET
    - COUPLING: PF SIDE TO CONFG TEST PERFORMED

- **CM2**
  - ORDER: "TAXI PROCEDURE"
  - DO:
    - INSTRUMENTS: CHECK
    - HDG MODE: SELECTED
    - LO BANK: SELECTED
    - IAS MODE: SELECTED
    - IAS: V2 + 5 kt SET
    - COUPLING: PF SIDE TO CONFG TEST PERFORMED

**WHEN PF AND PNF READY**

- **PF**
  - ORDER: "TAXI PROCEDURE"
  - DO: TO BRIEFING PERFORMED

**AFTER PF TAKE-OFF BRIEFING**

- **CM1**
  - ORDER: "TAXI PROCEDURE COMPLETE"
  - ANNOUNCE: "TAXI PROCEDURE COMPLETE"

**WHEN TAXI PROCEDURE COMPLETE**

- **CM1**
  - REQUEST AND ANSWER: "TAXI CHECKLIST"
  - ANNOUNCE: "C/L COMPLETE"

**ANNOUNCE: "TAXI CLEARANCE REQUESTED"**

**GROUND FROM COCKPIT, READY TO TAXI, YOU CAN REMOVE CHOCKS AND DISCONNECT"**

**REQUEST AND ANSWER "TAXI CHECKLIST"**

Refer to QRH 6.01

---

**CM1**

- ORDER: "TAXI PROCEDURE"
- ANNOUNCE: "C/L COMPLETE"

**CM2**

- ORDER: "TAXI PROCEDURE"
- ANNOUNCE: "C/L COMPLETE"
**TAXI FLOW**

**CM1**

1. **BLOCK TIME: ANNOUNCED**
   - CM2 reports block time on the navigation log.

2. **LEFT SIDE AREA: CLEAR CHECK LEFT SIDE**

3. **TAXI AND T/O LIGHTS: ON**
   - When on the taxiway the parking brake light has been turned on, CM1 must switch it off.

4. **PARKING BRAKE: RELEASED**

5. **BRAKES: CHECK**
   - For passenger comfort, the following procedure can be used:
     - Set Taxi power
     - Parking brake handle from ON to EMER position
     - Then CM2 checks brakes
     - Then CM1 checks brakes and CM1 starts to taxi.

6. **INSTRUMENTS: CHECK**
   - Check Heading, Bearings, Horizon / RMI.

7. **RUDDER CAM: CENTERED**
   - Center pedals then move the rudder trim to the right then to the left to center the RCU.

**CM2**

1. **TAXI CLEARANCE: REQUESTED**

2. **RIGHT SIDE AREA: CLEAR CHECK RIGHT SIDE**

3. **BRAKES: CHECK**

4. **INSTRUMENTS: CHECK**
   - Check Heading (including STBY compass), Bearings, Horizon / RMI.

5. **AFCS: SET**
   - Select: – HDG LO BANK
     - IAS V2+5
     - CPL on PF side
     - ALT SEL on first clearance.

6. **T/O CONFIG TEST: PERFORMED**
   - T/O config test checks aircraft configuration for take-off and provides an automatic Recall.
### 3.9. Before take-off

**Flight events**

- **Approaching holding point and cabin OK received**
  - **ORDER**
    - BEFORE TAKE-OFF PROCEDURE
  - **DO**
    - FL* CTL.......................... SPOILER & RUDDER

- **Line-up clearance received**
  - **DO**
    - RECALL PB ....................... DEPRESSED*
    - TO INH ......................... DEPRESSED
    - LAND LIGHTS / STROBE .......... ON
  - * Recall PB may be depressed before T/O INH PB to make sure you will not take-off with degraded systems.
  - **DO**
    - LATERAL FD BAR .............. CENTERED
    - (CHECK MAGNETIC RWY ORIENTATION)

- **Procedure complete**
  - **REQUEST AND ANSWER**
    - BEFORE TAKE-OFF CHECKLIST

**CM1**

- **DO**
  - TCAS ......................... AUTO
  - XPDR ......................... ALT
  - GUST LOCK .................. RELEASED
  - FL CTL ..................... ROLL / SPOILER
  - FL CTL ....................... PITCH

**CM2**

- **DO**
  - WEATHER RADAR ............. AS REQUIRED
  - CONT RELIGHT ............... AS REQUIRED
  - BLEED VALVES ............... OFF
  - AIR FLOW ..................... NORM
  - APM ROTARY SELECTOR .......... TO WEIGHT
  - LATERAL FD BAR ............... CENTERED
  - ANNOUNCE
    - BEFORE TAKE-OFF PROCEDURE COMPLETE
  - **REQUEST AND ANSWER**
    - BEFORE TAKE-OFF CHECKLIST
  - Refer to QRH 6.01
  - **ANNOUNCE**
    - CHECKLIST COMPLETE
### 3.9. Before take-off

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPROACHING HOLDING POINT AND CABIN OK RECEIVED</strong></td>
<td>- ORDER &quot;BEFORE TAKE-OFF PROCEDURE&quot;</td>
<td>- TCAS ........................................ AUTO&lt;br&gt;XPDR ............................................. ALT&lt;br&gt;GUST LOCK ................................ Released</td>
</tr>
<tr>
<td></td>
<td>- DO FLT CTL .............................. SPOILER &amp; RUDDER</td>
<td>- DO FLT CTL .............................. ROLL / SPOILER&lt;br&gt;FLT CTL ...................................... PITCH</td>
</tr>
<tr>
<td><strong>LINE-UP CLEARANCE RECEIVED</strong></td>
<td>- DO RECALL PB ............................. DEPRESSED*&lt;br&gt;TO INHI .......................... DEPRESSED&lt;br&gt;LAND LIGHTS / STROBE .................. ON</td>
<td></td>
</tr>
<tr>
<td><strong>72 PEC</strong></td>
<td>- <strong>DO</strong> LATERAL FD BAR ............... CENTERED&lt;br&gt;(CHECK MAGNETIC RWY ORIENTATION)</td>
<td>- <strong>DO</strong> WEATHER RADAR ................. AS REQUIRED&lt;br&gt;BLEED VALVES .......................... AS REQUIRED&lt;br&gt;AIR FLOW ........................................ NORM&lt;br&gt;APM ROTARY SELECTION&lt;br&gt;(if installed) .......................... TO WEIGHT</td>
</tr>
<tr>
<td><strong>42 PEC</strong></td>
<td>- <strong>Announce</strong> LATERAL FD BAR .......... CENTERED</td>
<td>- <strong>Announce</strong> LATERAL FD BAR .......... CENTERED</td>
</tr>
<tr>
<td><strong>Announce</strong> &quot;BEFORE TAKE-OFF PROCEDURE COMPLETE&quot;</td>
<td>- <strong>Announce</strong> WEATHER RADAR ................. AS REQUIRED&lt;br&gt;CONT RELIGHT .......................... AS REQUIRED&lt;br&gt;BLEED VALVES .......................... AS REQUIRED&lt;br&gt;AIR FLOW ........................................ NORM&lt;br&gt;APM ROTARY SELECTION&lt;br&gt;(if installed) .......................... TO WEIGHT</td>
<td></td>
</tr>
<tr>
<td><strong>72 not PEC</strong></td>
<td>- <strong>Announce</strong> LATERAL FD BAR .......... CENTERED</td>
<td>- <strong>Announce</strong> LATERAL FD BAR .......... CENTERED</td>
</tr>
</tbody>
</table>
| **Announce** "BEFORE TAKE-OFF PROCEDURE COMPLETE" | - **Announce AND READ** "BEFORE TAKE-OFF CHECKLIST"

Refer to QRH 6.01 |
| **PROCEDURE COMPLETE** | - **Announce** "CHECKLIST COMPLETE" |
**CM1**

1. **SPOILERS: CHECK**  
   Look outside if the spoiler deflects, announce “SPOILER” and check that the blue triangle appears on the overhead panel, announce “BLUE LIGHT”.

2. **RECALL PB, THEN T/O INHI PB: DEPRESSED**  
   RCL PB has to be depressed before T/O INHI PB.

3. **LAND AND STROBE LIGHTS: ON**  
   Once aligned:

4. **FD BARS: CENTERED**  
   To check that runway heading is correct.

**CM2**

1. **TCAS: AUTO**  
   It is normal to have “TA ONLY” on VSI.

2. **XPDR: ALT**  
   It activates the mode S.

3. **GUST LOCK: RELEASED**  
   Announce “Flight Controls ?”

4. **FLT CONTROLS: CHECK**  
   Check ROLL / SPOILER and PITCH  
   Look outside if the spoiler deflects, announce “SPOILER” and check that the blue triangle appears on the overhead panel, announce “BLUE LIGHT”.

5. **WEATHER RADAR: STBY or WX**  
   To activate the EGPWS terrain clearance floor mode.

6. **CONT RELIGHT: AS REQUIRED (ON 42/72 NO PEC ONLY)**  
   Switch on if icing condition, contaminated runway or heavy rain.

7. **BLEED VALVES: OFF**

8. **BLEED VALVES: ON or OFF**

9. **AIR FLOW: AS REQUIRED**  
   Once aligned:

10. **APM ROTARY SELECTOR: TAKE-OFF WEIGHT**  
    Set the TOW on the rotator  
    Even if it is the same weight the rotator should be moved to take into account the selected weight.  
    The APM should be selected with both engines running.  
    Indeed, during start, microcuts on the supplying may occur and if the selector is moved before engine start, the TO weight may not be taken into account.

11. **LATERAL FD BARS: CENTERED**  
    To check that runway heading is correct.
3.10. Take-off

**Flight events**

**CM1**

- **READY TO TAKE-OFF**
  - **ANNOUNCE** 
    - “TAKE-OFF AT XXX O’CLOCK, V1 XXX KT”
  - **DO**
    - TIMING START
    - FUEL USED CHECK
    - NOSE WHEEL STEERING HANDED
  - **DO**
    - PLs ADVANCED TO WHITE MARK
  - **ANNOUNCE** 
    - “SET POWER”

- **REACHING 70 KT READ ON THE STBY ASI AND CM 2 ASI**
  - **ANNOUNCE AND DO**
    - “CHECK” (on CM 1 ASI)
    - NOSE WHEEL STEERING RELEASED “YOUR CONTROL”

- **CM2**
  - **DO**
    - TIMING START
    - CONTROL WHEEL HOLD TOWARD WIND
  - **DO**
    - TAKE-OFF TORQUE ADJUST
    - ENGINE PARAMETERS CHECK
      - * TQ: T/O VALUE (white bug)
      - ** NP: 100%, ITT
  - **ANNOUNCE** 
    - “APCS ARMED POWER SET”

**Flight events**

**PNF**

- **FLIGHT CONTROLS TRANSFER**
  - **ANNOUNCE** 
    - “V1”

- **CM1**
  - **DO**
    - PLs RELEASED

- **PF**
  - **ANNOUNCE** 
    - “I HAVE CONTROL”

- **REACHING VR**
  - **ANNOUNCE** 
    - “ROTATE”
  - **DO**
    - PITCH... ROTATE TO 10° & FOLLOW FD BARS

- **POSITIVE RATE**
  - **ANNOUNCE** 
    - “POSITIVE RATE”
  - **DO**
    - LANDING GEAR LEVER UP
    - YAW DAMPER ON
    - TAXI & TO LIGHT OFF

- **WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL**
  - **ANNOUNCE** 
    - “GEAR UP”
### 3.10. Take-off

#### CM1

- **READY TO TAKE-OFF**
  - **ANNOUNCE**
    - "TAKE-OFF AT XXX O’CLOCK, V1 XXX KT"
  - **DO**
    - TIMING ............................................ START
    - NOSE WHEEL STEERING.................... HANDED
  - **DO**
    - PLS ................................................ NOTCH
  - **ANNOUNCE**
    - "SET POWER"

- **REACHING 70 KT READ ON THE STBY ASI AND CM 2 ASI**
  - **ANNOUNCE AND DO**
    - "CHECK" (on CM 1 ASI)
    - NOSE WHEEL STEERING.............. RELEASED
    - "YOUR CONTROL"

#### CM2

- **DO**
  - TIMING ............................................ START
  - CONTROL WHEEL............. HOLD TOWARD WIND

- **DO**
  - TAKE-OFF TORQUE .........................CHECK*
  - ENGINE PARAMETERS ......... CHECK**
    - * TQ: T/O VALUE (white bug)
    - ** NP: 100%, ITT
  - **ANNOUNCE**
    - "ATPCS ARMED POWER SET"

- **ANNOUNCE**
  - "70 KTS"

#### PNF

- **FLIGHT CONTROLS TRANSFER**
  - **ANNOUNCE**
    - "V1"

- **REACHING V1**
  - **ANNOUNCE**
    - "V1"
  - **DO**
    - PLS ................................................ RELEASED

- **REACHING VR**
  - **ANNOUNCE**
    - "ROTATE"

- **POSITIVE RATE**
  - **ANNOUNCE**
    - "POSITIVE RATE"
  - **DO**
    - LANDING GEAR LEVER............... UP
    - YAW DAMPER ............................. ON
    - TAXI & T/O LIGHT....................... OFF

- **ORDER**
  - "GEAR UP"

#### PF

- **ANNOUNCE**
  - "I HAVE CONTROL"

- **DO**
  - PITCH….ROTATE TO 10° & FOLLOW FD BARS

- **ORDER**
  - "GEAR UP"

- **ANNOUNCE**
  - "GEAR UP"
**CM1**

1. **TIMING: START**
   - Announce "TAKE-OFF AT ___ O’CLOCK, V1 ___ Kt".

2. **FUEL USED: CHECK**

3. **NOSE WHEEL STEERING: HANDED**

4. **POWER LEVERS: ADVANCED**
   - Advance PLs to the white mark/notch and order "SET POWER".

5. **NOSE WHEEL STEERING: RELEASED**
   - At 70 Kt, release nose wheel steering. PF controls aircraft through rudder.

6. **POWER LEVERS: RELEASED**
   - At V1, release PLs.

**PNF**

1. **LANDING GEAR LEVER: UP**

2. **YAW DAMPER: ON**
   - Check white lights illuminated.

3. **TAXI & TO LIGHT: OFF**

**CM2**

1. **TIMING: START**

2. **CONTROL WHEEL: HOLD TOWARD WIND**

3. **TAKE-OFF TORQUES: ADJUSTED/CHECK**
   - By acting on PLs, adjust/check torque needles to white bug, check $N_p=100\%$.

4. **ATPCS LIGHT: ARM ILLUMINATED**
   - Check ARM green light illuminated.

5. **IAS: MONITOR**
   - At 70 Kt, announce "70 KT". READ ON STBY ASI

6. **FD BARS: FOLLOWED**

**PF**

1. **FD BARS: FOLLOWED**
### 3.11. Climb sequence

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACHING ACCELERATION ALTITUDE</strong></td>
<td>![ANNOUNCE &quot;ACCELERATION ALTITUDE&quot;]</td>
<td>![DO RETARD PL ................. WHITE MARKS*]</td>
</tr>
<tr>
<td><strong>NOTE:</strong> MIN 400 FT AGL OR HIGHER IF REQUESTED</td>
<td>![DO IAS ................ INCREASED (ABOVE WHITE BUG)]</td>
<td>![DO &quot;CLIMB SEQUENCE&quot;]</td>
</tr>
<tr>
<td>![PNF DO PL .................. CHECK IN WHITE MARKS]</td>
<td>![PNF PWR MGT .................... CLIMB]</td>
<td>![PNF ORDER &quot;CLIMB SEQUENCE&quot;]</td>
</tr>
<tr>
<td>![PNF CLs ........................ WHITE MARK]</td>
<td>![PNF CLs .................. CLIMB]</td>
<td></td>
</tr>
<tr>
<td>![PNF BLEEDS ........................................ CLIMB]</td>
<td>![PNF IAS .......................... 160 KT SET]</td>
<td></td>
</tr>
<tr>
<td>![PNF CL ................................ ADJUST NP 86 %]</td>
<td>![PNF CL ................................ ADJUST NP 86 %]</td>
<td></td>
</tr>
<tr>
<td>![PNF PLs ........ ADJUST TORQUE TO AMBER BUGS]</td>
<td>![PNF PLs ........ ADJUST TORQUE TO AMBER BUGS]</td>
<td></td>
</tr>
<tr>
<td>![PNF CONT RELIGHT ...................... AS REQUIRED]</td>
<td>![PNF CONT RELIGHT ...................... AS REQUIRED]</td>
<td></td>
</tr>
<tr>
<td>![PNF ANNOUNCE &quot;CLIMB SEQUENCE COMPLETE&quot;]</td>
<td>![PNF ANNOUNCE &quot;CLIMB SEQUENCE COMPLETE&quot;]</td>
<td></td>
</tr>
</tbody>
</table>

* In order to prevent over torques, PF retards PLs prior to reducing CLs.
### 3.11. Climb sequence

**Flight events**

- **REACHING ACCELERATION ALTITUDE**

  **NOTE:** MINI 400 FT AGL OR HIGHER IF REQUESTED

**PNF**

- **ANNOUNCE**
  - "ACCELERATION ALTITUDE"

- **DO**
  - IAS .............. INCREASED (ABOVE WHITE BUG)
  - PL ...................... CHECK IN THE NOTCH
  - PWR MGT ....................... CLimb
  - CLs ...................... WHITE MARK
  - BLEEDs ...................... SET ON IF NOT
  - IAS ...................... 170 KT SET
  - CLs ...................... ADJUST 86%
  - CONT RELIGHT .............. AS REQUIRED

- **ANNOUNCE**
  - "CLIMB SEQUENCE COMPLETE"

**PF**

- **DO**
  - PL ...................... CHECK IN THE NOTCH

- **ORDER**
  - "CLIMB SEQUENCE"

* In order to prevent over torques, PF checks PL in the notch before moving the PWR MGT. This is to standardize all the ATR fleet with the go-around and the optional 100% RTO at take-off procedures, which is only available on PW127M engines.
3.11. Climb sequence

REACHING ACCELERATION ALTITUDE

NOTE: MINI 400 FT AGL OR HIGHER IF REQUESTED

PNF

▶ ANNOUNCE
“ACCELERATION ALTITUDE”

▶ DO
IAS ............ INCREASED (ABOVE WHITE BUG)
PL ......................... CHECK IN THE NOTCH
PWR MGT ........................................ CLIMB
BLEEDS ............................... SET ON IF NOT
IAS ................................... 160/170 KT SET

▶ ANNOUNCE
“CLIMB SEQUENCE COMPLETE”

PF

▶ DO
PL ......................... CHECK IN THE NOTCH*

▶ ORDER
“CLIMB SEQUENCE”

* In order to prevent over torques, PF checks PL in the notch before moving the PWR MGT. This is to standardize all the ATR fleet with the go-around and the optional 100% RTO at take-off procedures, which is only available on PW127M engines.
PNF

A. ALTIMETER: ACCELERATION ALTITUDE
Announce “Acceleration altitude”

B. IAS: INCREASED
Increase IAS above white bug by using the pitch wheel

AFTER PL CHECKED IN THE NOTCH

C. PWR MGT: CLIMB

D. CONDITION LEVERS: WHITE MARK

E. BLEEDS: ON

F. CONT RELIGHT: AS REQUIRED

G. IAS: 160 KT/170 KT

H. CONDITION LEVERS: ADJUSTED
Adjust NP to 86 %

I. POWER LEVERS: ADJUSTED
Adjust TQ needle to amber bug

PF

① POWER LEVERS: TQ MINUS 10% Retard PL at Acceleration altitude
# 3.12. After take-off

## Flight events

<table>
<thead>
<tr>
<th><strong>PNF</strong></th>
<th><strong>PF</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACHING WHITE OR RED BUG (according to external conditions)</strong></td>
<td>ANNOUNCE &quot;WHITE BUG&quot; &quot;RED BUG&quot;&lt;br&gt;DO&lt;br&gt;FLAPS LEVER..................... SET TO 0</td>
</tr>
<tr>
<td><strong>WHEN FLAPS AT 0 ON THE FLAPS INDICATOR</strong></td>
<td>ANNOUNCE &quot;FLAPS 0&quot;</td>
</tr>
<tr>
<td><strong>REACHING WHITE OR RED BUG + 10 (according to external conditions)</strong></td>
<td>ANNOUNCE &quot;WHITE BUG + 10&quot; &quot;RED BUG + 10&quot;&lt;br&gt;DO&lt;br&gt;HIGH BANK ..................................... SET&lt;br&gt;ANNOUNCE &quot;HIGH BANK SET&quot;</td>
</tr>
<tr>
<td><strong>WHEN CLEARED FOR A FLIGHT LEVEL OR PASSING TRANSITION ALTITUDE</strong></td>
<td>DO&lt;br&gt;ALTIMETER..................................STANDARD SET&lt;br&gt;ANNOUNCE &quot;STANDARD SET&quot;&lt;br&gt;ANNOUNCE &quot;CHECK&quot; OR &quot;PLUS OR MINUS XXX&quot;&lt;br&gt;if deviation &gt; 50 Ft check altimeter setting&lt;br&gt;if deviation &lt; 50 Ft altimeter setting is correct.</td>
</tr>
</tbody>
</table>
| **AFTER ALTIMETER STANDARD SETTING OR AFTER CLIMB SEQUENCE IF ALTIMETERS REMAIN ON QNH SETTING** | ANNOUNCE AND READ "AFTER TAKE-OFF CHECKLIST"
Refer to QRH 6.01<br>ANNOUNCE "CHECKLIST COMPLETE" | REQUEST AND ANSWER "AFTER TAKE-OFF C.L" |
3.13. FL100 during climb

Flight events

PNF

- DO PRESSURIZATION 
  (cabin VS, cabin altitude, P)
- LANDING LIGHTS OFF
- PAX SEAT BELTS AS REQUIRED

PF

- ORDER “FL 100”
- No Checklist for FL 100

3.14. Cruise

Flight events

PNF

- 1000 FT BEFORE CRUISE FL
  - DO SAT CHECK
  - DELTA ISA COMPUTE CRUISE PARAMETERS DETERMINED AND NOTED

PF

- ORDER “COMPUTE CRUISE PARAMETERS”

PNF

- ALT STAR ON PF EADI
  - ANNOUNCE “CHECK”

PF

- ANNOUNCE “ALT STAR” read on FMA

PNF

- ALT GREEN ON PF EADI
  - ANNOUNCE “CHECK”
  - DO SPEED BUG SET
  - DO AND ANNOUNCE TORQUE BUGS SET “SET”

PF

- ANNOUNCE “ALT GREEN” read on FMA
  - ORDER AND SET “SPEED BUG...KT”

PNF

- REACHING CRUISE SPEED
  - DO POWER MANAGEMENT CRZ TORQUES ADJUSTED TO AMBER BUG CRUISE PARAMETERS CHECK
  - Note: check actual IAS, TAS versus predetermined values.

PF

- ANNOUNCE “CRUISE PROCEDURE”

PNF

- 42 not PEC
  - ANNOUNCE “CRUISE PROCEDURE COMPLETE”

PF

- ANNOUNCE “CRUISE PROCEDURE”

PNF

- REACHING CRUISE SPEED
  - DO POWER MANAGEMENT CRZ CRZ TO CRUISE PARAMETERS CHECK
  - Note: check actual IAS, TAS versus predetermined values.

PF

- ANNOUNCE “CRUISE PROCEDURE COMPLETE”

PNF

- DURING CRUISE
  - DO FILL THE FLIGHT LOG

PF

- DO (as soon as possible)
  - COMPUTE TOP OF DESCENT (TOD)
  - COMPUTE ESTIMATED TIME OF ARRIVAL
  - COMPUTE FUEL REMAINING AND HOLDING TIME
  - COMPUTE EXPECTED LANDING WEIGHT
CRUISE PARAMETERS

• PNF reads SAT by depressing the SAT PB and determines the ISA deviation.

  Example:
  Assuming that the aircraft is cruising at FL200, what is the ISA deviation?
  In standard ISA conditions, temperature at sea level is 15°C and decreases by 2°C each 1000ft.
  FL200 standard temperature = 15°C – 20x2°C = –25°C
  
  In the case described below, the aircraft is flying in ISA conditions.

• Take the FCOM or QRH page in compliance with the cruise weight.

  Example:
  Assuming that your cruise weight is 20T, what are your cruise parameters in 72-500?

  For NP 82% and 20T
  TQ = 69.4%
  FF = 336 kg/H/eng
  IAS = 204 kt
  TAS = 273 kt

FLIGHT FUEL MANAGEMENT

1) Fuel used versus distance (in Kg/Nm) = FF / GS
2) FU to DEST (in Kg) = actual FU + (dist. to go x Fuel used versus distance) = X
3) Remaining Fuel at Destination (in Kg) = FOB* - X = RF
4) Holding quantity (in Kg) = RF - (alternate fuel + final reserve) = HF
5) Estimated maxi-holding time (in min) =
   HF / 8 for 42-300 (i.e. 480 kg/h fuel consumption**)
   HF / 10 for all other ATR type (i.e. 600kg/h**)

* FOB: Fuel On Board before engine start
** please refer to FCOM for exact value.
### 3.15. Before descent

<table>
<thead>
<tr>
<th>Flight events</th>
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<th>PF</th>
</tr>
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<tbody>
<tr>
<td><strong>LANDING DATA AVAILABLE (APPROX. 10 MIN BEFORE TOD)</strong></td>
<td>▶ <strong>DO</strong> LANDING AIRPORT DATA .......... OBTAINED</td>
<td>▶ <strong>DO</strong> LANDING DATA CARD................. FILLED</td>
</tr>
<tr>
<td></td>
<td>▶ <strong>DO</strong> STBY QNH............................................. SET</td>
<td>▶ <strong>DO</strong> LANDING DATA CARD................. PROCESSED</td>
</tr>
<tr>
<td></td>
<td>▶ <strong>DO</strong> GA TQ BUGS............................... CHECKED</td>
<td>Refer to 01.03 p. 34, <em>data card proceeding.</em></td>
</tr>
<tr>
<td></td>
<td>▶ <strong>DO</strong> SPEED BUGS ....................................... SET</td>
<td>▶ <strong>ORDER AND DO</strong> GA TQ BUGS............................... SET</td>
</tr>
<tr>
<td></td>
<td>▶ <strong>DO</strong> DA or MDA .......................................... SET</td>
<td>▶ <strong>ORDER AND DO</strong> SPEED BUGS ....................................... SET</td>
</tr>
<tr>
<td></td>
<td>▶ <strong>DO</strong> NAV AIDS.......................................... SET</td>
<td>▶ <strong>ORDER AND DO</strong> DA or MDA .......................................... SET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ <strong>ORDER AND DO</strong> NAV AIDS.......................................... SET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ <strong>ORDER AND DO</strong> CCAS............................................. RECALL*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ <strong>DO</strong> ANNOUNCE AND READ &quot;DESCENT CHECKLIST&quot;</td>
<td>▶ <strong>REQUEST AND ANSWER &quot;DESCENT CHECKLIST&quot;</strong></td>
</tr>
<tr>
<td></td>
<td>▶ <strong>ANNOUNCE AND READ &quot;DESCENT CHECKLIST&quot;</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ <strong>ANNOUNCE &quot;CHECKLIST COMPLETE&quot;</strong></td>
<td></td>
</tr>
<tr>
<td><strong>BEFORE DESCENT (APPROX. 5 MIN BEFORE TOD)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ARRIVAL BRIEFING COMPLETE (AFTER TOD)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LANDING DATA CARD

- Filled by PNF and analyzed by PF.
- The landing data card information helps the crew to prepare arrival.
- Crew must process information. Please refer to 01.03 p34, data card proceeding.

Example: Landing data card

\[
V_{app} = V_{mHB} + 30 \times \text{Wind factor}^* \\
\* \text{Wind factor is the highest value between:} \\
\frac{1}{3} \text{ of reported Head Wind} \\
or \\
The Gust in full \\
\text{Wind factor maxi } 15 \text{ kt}
\]

\[
V_{app} = 95 + 1/3(12) = 99
\]

\[
V_{ga} \text{ computation}
\]

Is the highest value between:

1.1 \text{ Vmca} \\
or \\
V_{app} \text{ no wind} + 5\text{kt}

\[
V_{app} \text{ computation}
\]

RWY HDG is 090°

- Wind reported 090° / 20kt gusting 30kt \\
- So head wind component is 20kt gusting 30kt

\[
V_{app} = V_{mHB} + 30 \times \text{Wind factor}^* \\
\* \text{Wind factor is the highest value between:} \\
\frac{1}{3} \text{ of reported Head Wind} \rightarrow \text{here } 20/3 \rightarrow 7\text{kt} \\
or \\
The Gust in full \rightarrow \text{here } 30-20 \rightarrow 10\text{kt} \\
\text{Wind factor maxi } 15 \text{ kt}
\]

\[
V_{app} = 95 + 10 = 105 \text{kts}
\]

For speed bugs setting please refer to 01.03 p. 20, Speed bugs.
3.16. FL 100 during descent

Flight events

<table>
<thead>
<tr>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROSSING FL 100 DESCENDING</td>
<td></td>
</tr>
<tr>
<td>▶ DO</td>
<td>ORDER</td>
</tr>
<tr>
<td>PRESSURIZATION.......................... CHECK</td>
<td>“FL 100”</td>
</tr>
<tr>
<td>LANDING LIGHTS............................ ON</td>
<td>No Checklist for FL 100</td>
</tr>
<tr>
<td>SEAT BELTS............................... ON</td>
<td></td>
</tr>
</tbody>
</table>

3.17. Approach

Flight events

<table>
<thead>
<tr>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHEN CLEARED TO AN ALTITUDE OR PASSING TRANSITION LEVEL</td>
<td></td>
</tr>
<tr>
<td>▶ DO AND ANNOUNCE</td>
<td>ORDER AND DO</td>
</tr>
<tr>
<td>&quot;XXXX SET&quot;</td>
<td>“SET QNH”</td>
</tr>
<tr>
<td>(Check also the standby altimeter setting)</td>
<td></td>
</tr>
<tr>
<td>▶ ANNOUNCE</td>
<td>ANNOUNCE</td>
</tr>
<tr>
<td>“CHECK”</td>
<td>“PASSING XXXX FT, NOW!”</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>“PLUS OR MINUS XXXX”</td>
<td></td>
</tr>
<tr>
<td>if deviation &gt; 50 Ft check altimeter setting</td>
<td></td>
</tr>
<tr>
<td>if deviation &lt; 50 Ft altimeter setting is correct.</td>
<td></td>
</tr>
</tbody>
</table>

Procedure complete

<table>
<thead>
<tr>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE &amp; READ</td>
<td>REQUEST AND ANSWER</td>
</tr>
<tr>
<td>“APPROACH CHECKLIST”</td>
<td>“APPROACH CHECKLIST”</td>
</tr>
<tr>
<td>Refer to QRH 6.01</td>
<td></td>
</tr>
<tr>
<td>▶ ANNOUNCE</td>
<td></td>
</tr>
<tr>
<td>“CHECKLIST COMPLETE”</td>
<td></td>
</tr>
</tbody>
</table>

3.18. Before landing

Stabilization policy

STABILIZED means: • Aircraft configured for Landing • Flight Path and Speed appropriate • Checklist before Landing complete

<table>
<thead>
<tr>
<th>FLIGHT EVENT</th>
<th>PNF ANNOUNCES</th>
<th>PF ACTIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 FT AGL IMC</td>
<td>&quot;XXXX FT, STABILIZED&quot;</td>
<td>ORDER: “WE CONTINUE”</td>
<td>“XXXX FT”: ANNOUNCED ALTITUDE WILL BE Zx + 1000 FT OR Zx + 500 FT OR Zx + 300 FT ACCORDING TO WEATHER CONDITIONS</td>
</tr>
<tr>
<td>STABILIZED</td>
<td>&quot;XXXX FT, STABILIZED&quot;</td>
<td>ORDER: “GO-AROUND”</td>
<td></td>
</tr>
<tr>
<td>NON STABILIZED</td>
<td>&quot;XXXX FT, NON STABILIZED&quot;</td>
<td>ORDER: “GO-AROUND”</td>
<td></td>
</tr>
<tr>
<td>500 FT AGL VMC°</td>
<td>&quot;XXXX FT, STABILIZED&quot;</td>
<td>ORDER: “WE CONTINUE”</td>
<td></td>
</tr>
<tr>
<td>STABILIZED</td>
<td>&quot;XXXX FT, STABILIZED&quot;</td>
<td>ORDER: “GO-AROUND”</td>
<td></td>
</tr>
<tr>
<td>NON STABILIZED</td>
<td>&quot;XXXX FT, NON STABILIZED&quot;</td>
<td>ORDER: “GO-AROUND”</td>
<td></td>
</tr>
<tr>
<td>300 FT AGL CIRCLE TO LAND AND VISUAL PATTERN</td>
<td>&quot;XXXX FT, STABILIZED&quot;</td>
<td>ORDER: “WE CONTINUE”</td>
<td></td>
</tr>
<tr>
<td>STABILIZED</td>
<td>&quot;XXXX FT, STABILIZED&quot;</td>
<td>ORDER: “GO-AROUND”</td>
<td></td>
</tr>
<tr>
<td>NON STABILIZED</td>
<td>&quot;XXXX FT, NON STABILIZED&quot;</td>
<td>ORDER: “GO-AROUND”</td>
<td></td>
</tr>
</tbody>
</table>
### 3.18.1. ILS precision approach (1/2)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLEARED FOR APPROACH</strong></td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ DO APP MODE.......................... ENGAGED</td>
</tr>
<tr>
<td><strong>VOR ALIVE</strong></td>
<td>▶ ANNOUNCE “VOR ALIVE”</td>
<td>▶ ANNOUNCE “APPROACH MODE SET LOC WHITE, GS WHITE”</td>
</tr>
<tr>
<td><strong>LOC STAR (RWY AXIS IS CONFIRMED WHEN VOR IS CENTERED AND / OR RMI NEEDLE ON FINAL CRS)”</strong></td>
<td>▶ ANNOUNCE “CHECK” “RWY AXIS CONFIRMED”</td>
<td>▶ ANNOUNCE “LOC STAR”</td>
</tr>
<tr>
<td></td>
<td>▶ DO AND ANNOUNCE “RUNWAY HEADING SET, DUAL ILS SET”</td>
<td>▶ ORDER “SET RUNWAY HEADING, DUAL ILS”</td>
</tr>
<tr>
<td><strong>G/S ALIVE</strong></td>
<td>▶ ANNOUNCE “GLIDE SLOPE ALIVE”</td>
<td>▶ ORDER “FLAPS 15”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “SPEED BUG WHITE BUG + 10”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 15................................. SELECTED</td>
<td>▶ ORDER “GEAR DOWN”</td>
</tr>
<tr>
<td><strong>WHEN FLAPS 15 ON FLAPS INDICATOR</strong></td>
<td>▶ ANNOUNCE “FLAPS 15”</td>
<td>▶ ORDER AND DO “FLAPS 30”</td>
</tr>
<tr>
<td></td>
<td>▶ DO AND ANNOUNCE “SET”</td>
<td>▶ ORDER “FLAPS 30”</td>
</tr>
<tr>
<td><strong>G/S 1 DOT</strong></td>
<td>▶ ANNOUNCE “ONE DOT”</td>
<td>▶ ANNOUNCE “HALF DOT”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “SPEED CHECK”</td>
</tr>
<tr>
<td></td>
<td>▶ DO LANDING GEAR LEVEL .................................. DOWN</td>
<td>▶ DO FLAPS 30................................. SELECTED</td>
</tr>
<tr>
<td></td>
<td>PWR MGT ............................................. T/O</td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
</tr>
<tr>
<td></td>
<td>TAXI &amp; T/O LIGHTS .................................. ON</td>
<td>▶ ORDER “SPEED CHECK”</td>
</tr>
<tr>
<td><strong>WHEN 3 GREEN LIGHTS</strong></td>
<td>▶ ANNOUNCE “LDG GEAR DOWN”</td>
<td>▶ ORDER “SPEED BUG WHITE BUG + 10”</td>
</tr>
<tr>
<td><strong>G/S 1/2 DOT</strong></td>
<td>▶ ANNOUNCE “HALF DOT”</td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
</tr>
<tr>
<td><strong>42 not PEC</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “SPEED CHECK”</td>
</tr>
<tr>
<td><strong>72 not PEC</strong></td>
<td>▶ DO FLAPS 30................................. SELECTED</td>
<td>▶ ORDER “SPEED BUG WHITE BUG + 10”</td>
</tr>
<tr>
<td><strong>72 PEC</strong></td>
<td>▶ ORDER “SPEED CHECK”</td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
</tr>
<tr>
<td><strong>WHEN FLAPS 30 ON FLAPS INDICATOR</strong></td>
<td>▶ ANNOUNCE “FLAPS 30”</td>
<td>▶ ORDER “SPEED BUG WHITE BUG + 10”</td>
</tr>
<tr>
<td><strong>42 not PEC</strong></td>
<td>▶ DO AND ANNOUNCE “SET”</td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
</tr>
<tr>
<td><strong>72 not PEC</strong></td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
</tr>
<tr>
<td><strong>72 PEC</strong></td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
<td>▶ ORDER “SPEED BUG V APPROACH”</td>
</tr>
</tbody>
</table>
### 3.18.1. ILS precision approach (1/2)

**Flight events**

<table>
<thead>
<tr>
<th>Event Description</th>
<th>PNF Actions</th>
<th>PF Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEARED FOR APPROACH</td>
<td>➤ ANNOUNCE “CHECK”</td>
<td>➤ DO APP MODE ENGAGED</td>
</tr>
<tr>
<td>VOR ALIVE</td>
<td>➤ ANNOUNCE “VOR ALIVE”</td>
<td>➤ ANNOUNCE “LOC STAR”</td>
</tr>
<tr>
<td>LOC STAR (RWY AXIS IS CONFIRMED WHEN VOR IS CENTERED AND / OR RMI NEEDLE ON FINAL CRS)</td>
<td>➤ ANNOUNCE “CHECK”</td>
<td>➤ ORDER “FLAPS 15”</td>
</tr>
<tr>
<td></td>
<td>➤ ANNOUNCE “RWY AXIS CONFIRMED”</td>
<td>➤ ANNOUNCE “SPEED CHECK”</td>
</tr>
<tr>
<td></td>
<td>➤ DO FLAPS 15 SELECTED</td>
<td>➤ DO AND ANNOUNCE “SET”</td>
</tr>
<tr>
<td>G/S ALIVE</td>
<td>➤ ANNOUNCE “GLIDE SLOPE ALIVE”</td>
<td>➤ ANNOUNCE “SPEED CHECK”</td>
</tr>
<tr>
<td>WHEN FLAPS 15 ON FLAPS INDICATOR</td>
<td>➤ ANNOUNCE “FLAPS 15”</td>
<td>➤ DO AND ANNOUNCE “SET”</td>
</tr>
<tr>
<td>G/S 1 DOT</td>
<td>➤ ANNOUNCE “ONE DOT”</td>
<td>➤ ANNOUNCE “SPEED CHECK”</td>
</tr>
<tr>
<td>WHEN 3 GREEN LIGHTS</td>
<td>➤ ANNOUNCE “LDG GEAR DOWN”</td>
<td>➤ ANNOUNCE “SPEED CHECK”</td>
</tr>
<tr>
<td>WHEN FLAPS 25 ON FLAPS INDICATOR</td>
<td>➤ ANNOUNCE “FLAPS 25”</td>
<td>➤ DO FLAPS 25 SELECTED</td>
</tr>
<tr>
<td>G/S 1/2 DOT</td>
<td>➤ ANNOUNCE “HALF DOT”</td>
<td>➤ ANNOUNCE “SPEED CHECK”</td>
</tr>
<tr>
<td>WHEN FLAPS 35 ON FLAPS INDICATOR</td>
<td>➤ ANNOUNCE “FLAPS 35”</td>
<td>➤ DO AND ANNOUNCE “SET”</td>
</tr>
</tbody>
</table>
### 3.18.1. ILS precision approach (2/2)

#### Flight events

<table>
<thead>
<tr>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G/S STAR 72 PEC</td>
</tr>
<tr>
<td>G/S STAR 42 PEC</td>
</tr>
<tr>
<td>G/S STAR 42 not PEC</td>
</tr>
<tr>
<td>72 not PEC</td>
</tr>
</tbody>
</table>

#### PNF

- **G/S STAR 72 PEC**
  - Do and announce "CHECK"
  - Do and announce ADU: G.A. ALTITUDE SET "XXXX FT SET"
  - Announce "TOP OF DESCENT XX DME, CHECK"

- **G/S STAR 42 PEC**
  - Do and announce "CHECK"
  - Do and announce CL'S: ADU: G.A. ALTITUDE SET "MAX RPM, XXXX FT SET"
  - Announce "TOP OF DESCENT XX DME, CHECK"

- **G/S STAR 42 not PEC**
  - Do and announce "CHECK"
  - Do and announce ADU: G.A. ALTITUDE SET "MAX RPM, XXXX FT SET"
  - Announce "CHECK"

- **42 not PEC**
  - Do and announce "CHECK"
  - Do and announce ADU: G.A. ALTITUDE SET "MAX RPM, XXXX FT SET"
  - Announce "CHECK"

- **72 not PEC**
  - Do and announce "CHECK"
  - Do and announce ADU: G.A. ALTITUDE SET "MAX RPM, XXXX FT SET"
  - Announce "CHECK"

#### PF

- **G/S STAR 72 PEC**
  - Announce and order "GLIDE STAR, SET GO-AROUND ALTITUDE"
  - Announce "CHECK"

- **G/S STAR 42 PEC**
  - Announce and order "GLIDE STAR, MAX RPM, SET GO-AROUND ALTITUDE"
  - Announce "CHECK"

- **G/S STAR 42 not PEC**
  - Announce and order "GLIDE STAR, MAX RPM, SET GO-AROUND ALTITUDE"
  - Announce "CHECK"

- **42 not PEC**
  - Announce and order "GLIDE STAR, MAX RPM, SET GO-AROUND ALTITUDE"
  - Announce "CHECK"

#### When Aircraft Stabilized

- Announce and read "BEFORE LANDING CHECKLIST"
  - Refer to QRH 6.01
- Announce "CHECKLIST COMPLETE"

#### When Cl Complete

- Do and announce "HEADING BUG CENTERED"
  - Apply drift to maintain final track.

#### 1000 FT AGL IMC

- Announce "XXXX FT, STABILIZED"
  - Order "WE CONTINUE"

#### 1000 FT AGL IMC

- Announce "XXXX FT, NON STABILIZED"
  - Order "GO-AROUND"

#### Reaching DA + 500 FT

- Announce "FIVE HUNDRED ABOVE"

#### Reaching DA + 100 FT

- Announce "ONE HUNDRED ABOVE"

#### Reaching DA

- Announce "MINIMUM"
  - Order "LAND" OR "GO-AROUND"
Deviations and limits

Height

<table>
<thead>
<tr>
<th>Category</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>± 100 Ft</td>
</tr>
<tr>
<td>Beginning of go-around</td>
<td>+ 50 Ft</td>
</tr>
<tr>
<td>At decision height</td>
<td>0 Ft</td>
</tr>
</tbody>
</table>

Tracking

<table>
<thead>
<tr>
<th>Category</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>On radial</td>
<td>± 5 °</td>
</tr>
<tr>
<td>Precision approach</td>
<td>half deviation of LOC and GS, according to altitude</td>
</tr>
</tbody>
</table>

Speed

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both engines</td>
<td>+ 5 Kt / – 0 Kt</td>
</tr>
<tr>
<td>One engine</td>
<td>+ 10 Kt / – 0 Kt</td>
</tr>
</tbody>
</table>

Aircraft handling when performing a precision approach manually

LOCALIZER

Corrections must be done inside the heading bug.

GLIDE SLOPE

Pitch variations should not exceed ± 2°.

Note: PNF calls for any deviation:

- “SPEED” if +10/-0 Kt deviation exceeded.
- “GLIDE SLOPE” if ½ dot deviation exceeded.
- “LOCALIZER” if ½ dot deviation exceeded.

PF answer is:

- “CORRECTION” (and performs correction)
3.18.2. Non precision approach (1/2)

**Flight events**

<table>
<thead>
<tr>
<th><strong>CLEAR FOR APPROACH</strong></th>
<th><strong>PNF</strong></th>
<th><strong>PF</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▶ DO AND ANNOUNCE &quot;SET&quot;</td>
<td>▶ ORDER AND DO &quot;SPEED BUG 160 KT&quot;</td>
</tr>
<tr>
<td>4 NM BEFORE DESCENT POINT OR 2 MINUTES FROM DESCENT POINT (IF NO DME AVAILABLE)</td>
<td>▶ ANNOUNCE &quot;SPEED CHECK&quot; ▶ DO FLAPS 15 ................. SELECTED</td>
<td>▶ ORDER &quot;FLAPS 15&quot;</td>
</tr>
<tr>
<td>WHEN FLAPS 15 ON FLAPS INDICATOR</td>
<td>▶ ANNOUNCE &quot;FLAPS 15&quot; ▶ DO AND ANNOUNCE &quot;SET&quot; ▶ ANNOUNCE &quot;SPEED CHECK&quot; ▶ DO LANDING GEAR LEVEL .................... DOWN PWR MGT ............................................ T/O TAXI &amp; T/O LIGHTS ......................... ON</td>
<td>▶ ORDER AND DO &quot;SPEED BUG WHITE BUG + 10&quot; ▶ ORDER &quot;GEAR DOWN&quot;</td>
</tr>
<tr>
<td>WHEN 3 GREEN LIGHTS ON AT LEAST ONE LDG GEAR INDICATOR</td>
<td>▶ ANNOUNCE &quot;LDG GEAR DOWN&quot; ▶ ANNOUNCE &quot;SPEED CHECK&quot; ▶ DO FLAPS 30 ................. SELECTED</td>
<td>▶ ORDER &quot;FLAPS 30&quot;</td>
</tr>
<tr>
<td>WHEN FLAPS 30 ON FLAPS INDICATOR</td>
<td>▶ ANNOUNCE &quot;FLAPS 30&quot; ▶ DO AND ANNOUNCE &quot;SET&quot; ▶ DO AND ANNOUNCE &quot;MAX RPM, GO-AROUND ALTITUDE SET&quot; ▶ ORDER AND DO &quot;SPEED BUG V APPROACH&quot; ▶ ORDER &quot;MAX RPM, SET GO-AROUND ALTITUDE&quot;</td>
<td>▶ DO AND ANNOUNCE &quot;VS 0 FT/MIN SET&quot; ▶ REQUEST &quot;BEFORE LANDING CHECKLIST&quot;</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE &quot;CHECK&quot; ▶ ANNOUNCE AND READ &quot;BEFORE LANDING CHECKLIST&quot; Refer to QRH 6.01 ▶ ANNOUNCE &quot;CHECKLIST COMPLETE&quot;</td>
<td></td>
</tr>
</tbody>
</table>
### 3.18.2. Non precision approach (1/2)

**Flight events**

<table>
<thead>
<tr>
<th>CLEARED FOR APPROACH</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ DO AND ANNOUNCE &quot;SET&quot;</td>
<td></td>
<td>▶ ORDER AND DO &quot;SPEED BUG 160 KT&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 NM BEFORE DESCENT POINT OR 2 MINUTES FROM DESCENT POINT (IF NO DME AVAILABLE)</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE &quot;SPEED CHECK&quot;</td>
<td></td>
<td>▶ ORDER &quot;FLAPS 15&quot;</td>
</tr>
<tr>
<td>▶ DO FLAPS 15 ......................... SELECTED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHEN FLAPS 15 ON FLAPS INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE &quot;FLAPS 15&quot;</td>
<td></td>
<td>▶ ORDER AND DO &quot;SPEED BUG WHITE BUG + 10&quot;</td>
</tr>
<tr>
<td>▶ DO AND ANNOUNCE &quot;SET&quot;</td>
<td></td>
<td>▶ ORDER &quot;GEAR DOWN&quot;</td>
</tr>
<tr>
<td>▶ ANNOUNCE &quot;SPEED CHECK&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ DO LANDING GEAR LEVEL ............ DOWN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWR MGT ............................................ T/O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAXI &amp; T/O LIGHTS ................. ON</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHEN 3 GREEN LIGHTS ON AT LEAST ONE LDG GEAR INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE &quot;LDG GEAR DOWN&quot;</td>
<td></td>
<td>▶ ORDER &quot;FLAPS 25&quot;</td>
</tr>
<tr>
<td>▶ ANNOUNCE &quot;SPEED CHECK&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ DO FLAPS 25 .............................. SELECTED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHEN FLAPS 25 ON FLAPS INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE &quot;FLAPS 25&quot;</td>
<td></td>
<td>▶ ORDER &quot;FLAPS 35&quot;</td>
</tr>
<tr>
<td>▶ ANNOUNCE &quot;SPEED CHECK&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ DO FLAPS 35 .............................. SELECTED</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>WHEN FLAPS 35 ON FLAPS INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ ANNOUNCE &quot;FLAPS 35&quot;</td>
<td></td>
<td>▶ ORDER AND DO &quot;SPEED BUG V APPROACH&quot;</td>
</tr>
<tr>
<td>▶ DO AND ANNOUNCE &quot;SET&quot;</td>
<td></td>
<td>▶ ORDER &quot;SET GO-AROUND ALTITUDE&quot;</td>
</tr>
<tr>
<td>▶ DO AND ANNOUNCE &quot;GO-AROUND ALTITUDE SET&quot;</td>
<td></td>
<td>▶ ORDER &quot;VS 0 FT/MIN SET&quot;</td>
</tr>
<tr>
<td>*Go-around altitude setting. Set only if present altitude below GA altitude. If not set present altitude + 300 ft to avoid ALT.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set GA altitude when passing GA alt -300 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ DO AND ANNOUNCE &quot;CHECK&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ ANNOUNCE AND READ &quot;BEFORE LANDING CHECKLIST&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refer to QRH 6.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ ANNOUNCE &quot;CHECKLIST COMPLETE&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.18.2. Non precision approach (1/2)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cleared for approach</strong></td>
<td>▶ <strong>DO</strong> AND ANNOUNCE <strong>&quot;SET&quot;</strong></td>
<td>▶ <strong>ORDER AND DO</strong> <strong>&quot;SPEED BUG 160 KT&quot;</strong></td>
</tr>
<tr>
<td><strong>4 NM before descent point or 2 minutes from descent point (if no DME available)</strong></td>
<td>▶ <strong>ANNOUNCE</strong> <strong>&quot;SPEED CHECK&quot;</strong>&lt;br&gt;<strong>DO</strong>&lt;br&gt;FLAPS 15 ......................... SELECTED</td>
<td>▶ <strong>ORDER</strong> <strong>&quot;FLAPS 15&quot;</strong></td>
</tr>
<tr>
<td><strong>When flaps 15 on flaps indicator</strong></td>
<td>▶ <strong>ANNOUNCE</strong> <strong>&quot;FLAPS 15&quot;</strong>&lt;br&gt;<strong>DO</strong>&lt;br&gt;<strong>ANNOUNCE</strong> <strong>&quot;SET&quot;</strong>&lt;br&gt;<strong>ANNOUNCE</strong> <strong>&quot;SPEED CHECK&quot;</strong>&lt;br&gt;<strong>DO</strong>&lt;br&gt;LANDING GEAR LEVEL ................... DOWN&lt;br&gt;PWR MGT ........................................... T/O&lt;br&gt;TAXI &amp; T/O LIGHTS ............................ ON</td>
<td>▶ <strong>ORDER</strong> <strong>&quot;SPEED BUG WHITE BUG + 10&quot;&quot;</strong>&lt;br&gt;<strong>ORDER</strong> <strong>&quot;GEAR DOWN&quot;</strong></td>
</tr>
<tr>
<td><strong>When 3 green lights on at least one LDG gear indicator and TLU green LT illuminated</strong></td>
<td>▶ <strong>ANNOUNCE</strong> <strong>&quot;LDG GEAR DOWN&quot;</strong>&lt;br&gt;<strong>ANNOUNCE</strong> <strong>&quot;SPEED CHECK&quot;</strong>&lt;br&gt;<strong>DO</strong>&lt;br&gt;FLAPS 30 ......................... SELECTED</td>
<td>▶ <strong>ORDER</strong> <strong>&quot;FLAPS 30&quot;</strong></td>
</tr>
<tr>
<td><strong>When flaps 30 on flaps indicator</strong></td>
<td>▶ <strong>ANNOUNCE</strong> <strong>&quot;FLAPS 30&quot;</strong>&lt;br&gt;<strong>DO</strong>&lt;br&gt;<strong>ANNOUNCE</strong> <strong>&quot;SET&quot;</strong>&lt;br&gt;<strong>DO AND ANNOUNCE</strong>&lt;br&gt;ADU ......................... G.A. ALTITUDE SET&lt;br&gt;<strong>GO-AROUND ALTITUDE SET</strong>&lt;br&gt;* Go-around altitude setting:&lt;br&gt;Set only if present altitude below GA altitude.&lt;br&gt;If not set present altitude + 300 ft to avoid ALT*&lt;br&gt;Set GA altitude when passing GA alt ~300 ft&lt;br&gt;<strong>DO AND ANNOUNCE</strong> <strong>&quot;CHECK&quot;</strong>&lt;br&gt;<strong>ANNOUNCE AND READ</strong>&lt;br&gt;<strong>BEFORE LANDING CHECKLIST</strong>&lt;br&gt;Refer to QRH 6.01&lt;br&gt;<strong>ANNOUNCE</strong> <strong>&quot;CHECKLIST COMPLETE&quot;</strong></td>
<td>▶ <strong>ORDER</strong> <strong>&quot;SPEED BUG V APPROACH&quot;</strong>&lt;br&gt;<strong>ORDER</strong> <strong>&quot;SET GO-AROUND ALTITUDE&quot;</strong>&lt;br&gt;<strong>ORDER</strong> <strong>&quot;VS 0 FT/MIN SET&quot;</strong>&lt;br&gt;<strong>REQUEST</strong> <strong>&quot;BEFORE LANDING CHECKLIST&quot;</strong></td>
</tr>
</tbody>
</table>
### 3.18.2. Non precision approach (2/2)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
</table>
| **0.3 NM BEFORE THE DESCENT POINT** | ▶ DO AND ANNOUNCE “VS - XXX FT/MIN SET” | ▶ ORDER “SET VS - XXX FT/MIN”  
▶ ANNOUNCE “CHECK” |
| **STARTING DESCENT (REFER TO NOTE 1)** | ▶ DO TIMING ……………………………START FLIGHT PATH …………………MONITORED | ▶ DO TIMING ……………………………START TO ………………………REDUCE TO 25% 
FLIGHT PATH …………………MONITORED |
| **WHEN ON FINAL** | ▶ DO AND ANNOUNCE “HEADING BUG CENTERED” | ▶ ANNOUNCE “CENTER HEADING BUG”  
Apply drift to maintain final track. |
| **1000 FT AGL IMC** | ▶ ANNOUNCE “XXXX FT, STABILIZED” | ▶ ORDER “WE CONTINUE” |
| **1000 FT AGL IMC** | ▶ ANNOUNCE “XXXX FT, NON STABILIZED” | ▶ ORDER “GO-AROUND” |
| **REACHING MDA + 500 FT** | ▶ ANNOUNCE “FIVE HUNDRED ABOVE” | ▶ ANNOUNCE “LAND” OR “GO-AROUND” |
| **REACHING MDA + 100 FT** | ▶ ANNOUNCE “ONE HUNDRED ABOVE” | ▶ ANNOUNCE “MINIMUM” |
| **MDA** | ▶ ANNOUNCE “MINIMUM” | ▶ ANNOUNCE “LAND” OR “GO-AROUND” |

**Note 1:**  
- PNF announces altitude versus distance, and altitude deviation above or below the desired one.  
- PF corrects by adjusting VS.

**Note 2:**  
When runway in sight, PF announces “LAND”. No more minima announcement done by PNF.

**Note 3:**  
Go-around may be initiated before MAPT, according to company policy.
3.19. Circle to land

• For circle to land based on a precision approach, please refer to 02.03 p. 49, *ILS precision approach*, for initial configuration.

• For circle to land based on a non-precision approach, please refer to 02.03 p. 52, *Non precision approach*, for initial configuration.

• Then, the following amendments must be taken into account:
  – Flaps remain at 15, until final descent initiated.
  – Speed will be White Bug +10 minimum, during all approach, until Flaps 30/35 extended.
  – Before landing C/L has to be performed during descent, before reaching MDA of the circle to land procedure.
  – Reaching MDA, PF orders /or executes:
    – set ALT, adjust PLs around 40%
    – set HDG MODE HI, select heading bug ± 45°, start timing.
  – Established on final, when PF orders “FLAPS 30/35”, PNF executes and announces “FLAPS 30, MAX RPM, BEFORE LANDING C/L COMPLETE”. (42 not PEC / 72 not PEC)
  – “FLAPS 30/35, BEFORE LANDING C/L COMPLETE”. (72 PEC / 42 PEC)

For landing phase, please refer to 02.03 p. 58, *Landing*. 
3.19. Circle to land (Cont’d)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
</table>
| **REACHING MDA** | ▶ ANNOUNCE “CHECK” | ▶ DO ALT MODE …… SELECTED  
▶ ANNOUNCE “ALT SET, ALT GREEN” |
| **AT LEVEL OFF** | ▶ DO TIMING ……………… START  
▶ ANNOUNCE “CHECK” | ▶ DO TIMING ……………… START  
▶ ANNOUNCE “HDG MODE SET, HEADING XXX SET, START TIMING” |
| **30 SEC OUTBOUND** | ▶ ANNOUNCE “CHECK” | ▶ DO AND ANNOUNCE HEADING BUG ……. ON DOWNWIND  
▶ ANNOUNCE “HDG BUG XXX SET” |
| **DOWN WIND - ABEAM THRESHOLD** | ▶ DO TIMING ……………… START  
▶ ANNOUNCE “CHECK” | ▶ DO TIMING ……………… START  
▶ ANNOUNCE “START TIMING” |
| **REACHING OUTBOUND TIME** | ▶ ANNOUNCE “CHECK” | ▶ DO HEADING BUG ……. ON BASE LEG  
▶ ANNOUNCE “HDG BUG XXX SET” |
| **END OF BASE LEG** | ▶ ANNOUNCE “CHECK” | ▶ DO HEADING BUG ……. ON FINAL  
▶ ANNOUNCE “HDG BUG XXX SET” |
| **ON FINAL** | ▶ ANNOUNCE “SPEED CHECK”  
▶ DO FLAPS 30 ………… SELECTED  
▶ ANNOUNCE “FLAPS 30, MAX RPM, BEFORE LANDING C/L COMPLETE” | ▶ ORDER “FLAPS 30, MAX RPM”  
▶ ORDER “WE CONTINUE” |
| **300 FT AGL** | ▶ ANNOUNCE “XXXX FT, STABILIZED” | ▶ ORDER “GO-AROUND”  
▶ ORDER “WE CONTINUE” |
| **300 FT AGL** | ▶ ANNOUNCE “XXXX FT, NON STABILIZED” | |
### 3.19. Circle to land (Cont’d)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACHING MDA</strong></td>
<td>▶️ ANNOUNCE “CHECK”</td>
<td>▶️ DO ALT MODE…………………………..SELECTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶️ ANNOUNCE “ALT SET, ALT GREEN”</td>
</tr>
<tr>
<td><strong>AT LEVEL OFF</strong></td>
<td>▶️ DO TIMING ............................................START</td>
<td>▶️ DO PLs ..........................around 40%</td>
</tr>
<tr>
<td></td>
<td>▶️ ANNOUNCE “CHECK”</td>
<td>▶️ HEADING MODE………………..SELECTED</td>
</tr>
<tr>
<td><strong>30 SEC OUTBOUND</strong></td>
<td>▶️ ANNOUNCE “CHECK”</td>
<td>▶️ ANNOUNCE “HDG MODE SET, HEADING XXX SET, START TIMING”</td>
</tr>
<tr>
<td><strong>DOWN WIND - ABEAM THRESHOLD</strong></td>
<td>▶️ DO TIMING ............................................START</td>
<td>▶️ ANNOUNCE “FLAPS 25, START TIMING”</td>
</tr>
<tr>
<td></td>
<td>▶️ DO AND ANNOUNCE “FLAPS 25”</td>
<td>▶️ DO TIMING ............................................START</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶️ ANNOUNCE “FLAPS 25, BEFORE LANDING C/L COMPLETE”</td>
</tr>
<tr>
<td><strong>REACHING OUTBOUND TIME</strong></td>
<td>▶️ ANNOUNCE “CHECK”</td>
<td>▶️ ANNOUNCE “HDG BUG XXX SET”</td>
</tr>
<tr>
<td><strong>END OF BASE LEG</strong></td>
<td>▶️ ANNOUNCE “CHECK”</td>
<td>▶️ DO HEADING BUG…………………..ON FINAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶️ ANNOUNCE “HDG BUG XXX SET”</td>
</tr>
<tr>
<td><strong>ON FINAL</strong></td>
<td>▶️ ANNOUNCE “SPEED CHECK”</td>
<td>▶️ ORDER “FLAPS 35”</td>
</tr>
<tr>
<td></td>
<td>▶️ DO FLAPS 35…………………..SELECTED</td>
<td>▶️ ORDER “WE CONTINUE”</td>
</tr>
<tr>
<td></td>
<td>▶️ ANNOUNCE “FLAPS 35, BEFORE LANDING C/L COMPLETE”</td>
<td>▶️ ORDER “GO-AROUND”</td>
</tr>
<tr>
<td><strong>300 FT AGL</strong></td>
<td>▶️ ANNOUNCE “XXXX FT, STABILIZED”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶️ ANNOUNCE “XXXX FT, NON STABILIZED”</td>
<td></td>
</tr>
<tr>
<td><strong>300 FT AGL</strong></td>
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</table>
### 3.19. Circle to land (Cont’d)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACHING MDA</td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ DO ALT MODE...SELECTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ ANNOUNCE “ALT SET, ALT GREEN”</td>
</tr>
<tr>
<td>AT LEVEL OFF</td>
<td>▶ DO TIMING START</td>
<td>▶ DO PLs...around 40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ ANNOUNCE “HDG MODE SET, HEADING XXX SET, START TIMING”</td>
</tr>
<tr>
<td>30 SEC OUTBOUND</td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ DO TIMING START</td>
</tr>
<tr>
<td>DOWN WIND - ABEAM THRESHOLD</td>
<td>▶ DO TIMING START</td>
<td>▶ ANNOUNCE “HDG BUG XXX SET”</td>
</tr>
<tr>
<td>REACHING OUTBOUND TIME</td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ORDER “FLAPS 30”</td>
</tr>
<tr>
<td>END OF BASE LEG</td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ORDER “WE CONTINUE”</td>
</tr>
<tr>
<td>ON FINAL</td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “GO-AROUND”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 30 SELECTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “FLAPS 30, BEFORE LANDING C/L COMPLETE”</td>
<td></td>
</tr>
<tr>
<td>300 FT AGL</td>
<td>▶ ANNOUNCE “XXXX FT, STABILIZED”</td>
<td></td>
</tr>
<tr>
<td>300 FT AGL</td>
<td>▶ ANNOUNCE “XXXX FT, NON STABILIZED”</td>
<td></td>
</tr>
</tbody>
</table>
### 3.20. Visual flight patterns (1/2)

From take-off to 1500 ft AAL, please refer to 02.03 p. 39, **Take-off** and further.

In this example, the PF flies manually by following FD bars (autopilot OFF).

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACHING 1500 FT AAL</strong></td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ANNOUNCE “ALT STAR”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ANNOUNCE “ALT GREEN”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ DO TQs .................................. 40%</td>
</tr>
<tr>
<td><strong>WHEN READY TO TURN</strong></td>
<td>▶ DO AND ANNOUNCE “DOWNWIND HEADING SET”</td>
<td>▶ ORDER “SET DOWNWIND HEADING”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PF has to take into account the crosswind component to apply a correct drift.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
</tr>
<tr>
<td><strong>DOWNWIND</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “FLAPS 15”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 15 ................................ SELECTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “FLAPS 15”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ DO AND ANNOUNCE “SET”</td>
<td>▶ ORDER “SPEED BUG WHITE BUG +10”</td>
</tr>
<tr>
<td><strong>WHEN FLAPS SET TO 15°</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “GEAR DOWN”</td>
</tr>
<tr>
<td></td>
<td>▶ DO LANDING GEAR LEVER .................. DOWN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “GEAR DOWN”</td>
<td></td>
</tr>
<tr>
<td><strong>ABEAM THRESHOLD</strong></td>
<td>▶ DO TIMING .................................. START</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outbound time = (H / 20) ±1° ±1 kt of head/tailwind.</td>
<td></td>
</tr>
<tr>
<td><strong>REACHING OUTBOUND TIME</strong></td>
<td>▶ DO, ANNOUNCE “RUNWAY HEADING SET, VS - 700 SET”</td>
<td>▶ ORDER “SET RUNWAY HEADING, VS - 700”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
</tr>
<tr>
<td><strong>RUNWAY IN SIGHT</strong></td>
<td>▶ ORDER “FLIGHT DIRECTOR STANDBY”</td>
<td></td>
</tr>
<tr>
<td><strong>ON FINAL</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “FLAPS 30, MAX RPM”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 30 ................................ SELECTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLs ......................................... MAX RPM</td>
<td></td>
</tr>
</tbody>
</table>
### 3.20. Visual flight patterns (1/2)

From take-off to 1500 ft AAL, please refer to 02.03 p. 39, *Take-off* and further.

In this example, the PF flies manually by following FD bars (autopilot OFF).

#### Flight events

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACHING 1500 FT AAL</strong></td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ANNOUNCE “CHECK”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ANNOUNCE “ALREADY STAR”</td>
</tr>
<tr>
<td><strong>WHEN READY TO TURN</strong></td>
<td>▶ DO AND ANNOUNCE “DOWNWIND HEADING SET”</td>
<td>▶ ORDER “SET DOWNWIND HEADING”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PF has to take into account the crosswind component to apply a correct drift.</td>
</tr>
<tr>
<td><strong>DOWNWIND</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “FLAPS 15”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 15 ……………………………..SELECTED</td>
<td>▶ ORDER “SPEED BUG WHITE BUG +10”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “FLAPS 15”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ DO AND ANNOUNCE “SET”</td>
<td></td>
</tr>
<tr>
<td><strong>ABEAM TOWER</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “GEAR DOWN”</td>
</tr>
<tr>
<td></td>
<td>▶ DO LANDING GEAR LEVER……………………………DOWN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “GEAR DOWN”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 25 ………………………………..SELECTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “FLAPS 25”</td>
<td></td>
</tr>
<tr>
<td><strong>ABEAM THRESHOLD</strong></td>
<td>▶ DO TIMING ……………………………………..START</td>
<td>▶ ORDER “SET DOWNWIND HEADING”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outbound time = (H / 20) ±1° / ±1 kt of head/tailwind.</td>
</tr>
<tr>
<td><strong>REACHING OUTFIELD TIME</strong></td>
<td>▶ DO, ANNOUNCE “RUNWAY HEADING SET, VS - 700 SET”</td>
<td>▶ ORDER “SET RUNWAY HEADING, VS - 700”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
</tr>
<tr>
<td><strong>RUNWAY IN SIGHT</strong></td>
<td>▶ ORDER “FLIGHT DIRECTOR STANDBY”</td>
<td>▶ ORDER “FLAPS 35”</td>
</tr>
<tr>
<td><strong>ON FINAL</strong></td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “FLAPS 35”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 35 ………………………………..SELECTED</td>
<td></td>
</tr>
</tbody>
</table>

---

**For Training Only**
### 3.20. Visual flight patterns (1/2)

From take-off to 1500 ft AAL, please refer to 02.03 p. 39, *Take-off* and further.

In this example, the PF flies manually by following FD bars (autopilot OFF).

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACHING 1500 FT AAL</td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ANNOUNCE “ALT STAR”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
<td>▶ ANNOUNCE “ALT GREEN”</td>
</tr>
<tr>
<td>WHEN READY TO TURN</td>
<td>▶ DO AND ANNOUNCE &quot;DOWNWIND HEADING SET&quot;</td>
<td>▶ ORDER “SET DOWNWIND HEADING”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PF has to take into account the crosswind component to apply a correct drift.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ ANNOUNCE “CHECK”</td>
</tr>
<tr>
<td>DOWNWIND</td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “FLAPS 15”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 15 ..................SELECTED</td>
<td>▶ ORDER “SPEED BUG WHITE BUG +10”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “FLAPS 15”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ DO AND ANNOUNCE “SET”</td>
<td></td>
</tr>
<tr>
<td>ABEAM TOWER</td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “GEAR DOWN”</td>
</tr>
<tr>
<td></td>
<td>▶ DO LANDING GEAR LEVER......DOWN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “GEAR DOWN”</td>
<td></td>
</tr>
<tr>
<td>ABEAM THRESHOLD</td>
<td>▶ DO TIMING ..................START</td>
<td>▶ DO TIMING ..................START</td>
</tr>
<tr>
<td></td>
<td>Outbound time=(H / 20) ±1” / ±1 kt of head/tailwind.</td>
<td>Outbound time=(H / 20) ±1” / ±1 kt of head/tailwind.</td>
</tr>
<tr>
<td>REACHING OUTBOUND TIME</td>
<td>▶ DO, ANNOUNCE ‘RUNWAY HEADING SET, VS - 700 SET’</td>
<td>▶ ORDER “SET RUNWAY HEADING, VS - 700”</td>
</tr>
<tr>
<td>RUNWAY IN SIGHT</td>
<td>▶ ORDER “FLIGHT DIRECTOR STANDBY”</td>
<td></td>
</tr>
<tr>
<td>ON FINAL</td>
<td>▶ ANNOUNCE “SPEED CHECK”</td>
<td>▶ ORDER “FLAPS 30”</td>
</tr>
<tr>
<td></td>
<td>▶ DO FLAPS 30 ..................SELECTED</td>
<td></td>
</tr>
</tbody>
</table>
### 3.20. Visual flight patterns (2/2)

**Flight events**

<table>
<thead>
<tr>
<th>WHEN FLAPS AT 30 ON FLAPS INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>42 not PEC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72 not PEC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **PNF**
  - ➤ **ANNOUNCE** “FLAPS 30, MAX RPM”
  - ➤ **DO AND ANNOUNCE** “SET”
  - ➤ **ANNOUNCE AND READ** “BEFORE LANDING CHECKLIST”
    - Refer to QRH 6.01
  - ➤ **ANNOUNCE** “CHECKLIST COMPLETE”

- **PF**
  - ➤ **ORDER** “SPEED BUG VAPP”
  - ➤ **REQUEST AND ANSWER** “BEFORE LANDING CHECKLIST”

**Flight events**

<table>
<thead>
<tr>
<th>WHEN FLAPS AT 35 ON FLAPS INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>42 PEC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **PNF**
  - ➤ **ANNOUNCE** “FLAPS 35”
  - ➤ **DO AND ANNOUNCE** “SET”
  - ➤ **ANNOUNCE AND READ** “BEFORE LANDING CHECKLIST”
    - Refer to QRH 6.01
  - ➤ **ANNOUNCE** “CHECKLIST COMPLETE”

- **PF**
  - ➤ **ORDER** “SPEED BUG VAPP”
  - ➤ **REQUEST AND ANSWER** “BEFORE LANDING CHECKLIST”

**Flight events**

<table>
<thead>
<tr>
<th>WHEN FLAPS AT 30 ON FLAPS INDICATOR</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>72 PEC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **PNF**
  - ➤ **ANNOUNCE** “FLAPS 30”
  - ➤ **DO AND ANNOUNCE** “SET”
  - ➤ **ANNOUNCE AND READ** “BEFORE LANDING CHECKLIST”
    - Refer to QRH 6.01
  - ➤ **ANNOUNCE** “CHECKLIST COMPLETE”

- **PF**
  - ➤ **ORDER** “SPEED BUG VAPP”
  - ➤ **REQUEST AND ANSWER** “BEFORE LANDING CHECKLIST”

**Flight events**

<table>
<thead>
<tr>
<th>300 FT AGL</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 FT AGL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **PNF**
  - ➤ **ANNOUNCE** “XXXX FT, STABILIZED”

- **PF**
  - ➤ **ORDER** “WE CONTINUE”

- **PNF**
  - ➤ **ANNOUNCE** “XXXX FT, NON STABILIZED”

- **PF**
  - ➤ **ORDER** “GO-AROUND”

---

Note: Flaps 15 have to be kept after T/O when performing a visual pattern below 1500 feet AAL.
3.21. Landing

Note: Use reverse to full stop only if necessary, according to the local noise abatement regulation (please refer to 04.02 p. 1, Noise abatement procedures). It is recommended to return to GI position at 40 kt to avoid flight control shaking.

Reverse policy

<table>
<thead>
<tr>
<th>ENGINES</th>
<th>LO PITCH LIGHTS</th>
<th>PNF ANNOUNCES</th>
<th>PF ACTION ON REVERSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ENGINES</td>
<td>TWO ILLUMINATED</td>
<td>“TWO LOW PITCH”</td>
<td>NORMAL USE</td>
</tr>
<tr>
<td>1 ENGINE</td>
<td>ONLY ONE ILLUMINATED</td>
<td>“NO REVERSE”</td>
<td>NO USE, MAXI YAW EFFECT</td>
</tr>
<tr>
<td></td>
<td>ONE ILLUMINATED</td>
<td>“ONE LOW PITCH”</td>
<td>USE WITH CARE, YAW EFFECT</td>
</tr>
</tbody>
</table>

Flight events

<table>
<thead>
<tr>
<th>WHEN PNF CALLS 70 KT</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Use reverse to full stop only if necessary, according to the local noise abatement regulation (please refer to 04.02 p. 1, Noise abatement procedures). It is recommended to return to GI position at 40 kt to avoid flight control shaking.
3.22. Go-around

**Flight events**

**MINIMUM**

- **PNF**
  - ◀ ANOUNCE “MINIMUM”
  - ▶ DO
    - Tq,.......................... CHECK / ADJUST GA
    - FLAPS 15,.......................... SELECTED
  - ▶ ANNOUNCE “FLAPS 15, POWER SET”

- **PF**
  - ◀ ANNOUCE “GO-AROUND, SET POWER, FLAPS ONE NOTCH”
  - ▶ DO
    - GA PB ON PL .......................... DEPRESSED
    - ROTATE .......................... GA PITCH (+8° NOSE UP)
    - PLs .......................... ADVANCED TO WHITE MARK
    - CAVALRY CHARGE ....................... CANCEL

**DA OR MDA**

- (RUNWAY OR RAMP NOT IN SIGHT) OR OTHER EVENTS UNEXPECTED

- **72 not PEC**
  - ◀ ANNOUCE “FLAPS 15, POWER SET”

- **72 PEC**
  - ◀ ANNOUCE “GO-AROUND, SET POWER, FLAPS ONE NOTCH”

  ▶ DO
  - GA PB ON PL .......................... DEPRESSED
  - ROTATE .......................... GA PITCH (+8° NOSE UP)
  - PLs .......................... ADVANCED TO WHITE MARK
  - CAVALRY CHARGE ....................... CANCEL

**POSITIVE RATE**

- ◀ ANNOUCE “POSITIVE RATE”

- ▶ DO
  - GEAR LEVEL .......................... UP
  - HDG MODE .......................... SELECTED
  - LO BANK ......................... SELECTED
  - IAS ................................ VGA SELECTED
  - TAXI & T/O LIGHT ..................... OFF

- ▶ ANNOUNCE “IAS XXX SET”

- ▶ DO AND ANNOUNCE “SET”

**WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL**

- ◀ ANNOUCE “GEAR UP”

**REACHING ACCELERATION ALTITUDE**

- **42 not PEC**
  - NOTE: MINI 1000 FT AGL OR HIGHER IF REQUESTED

  ▶ ANNOUNCE “ACCELERATION ALTITUDE”

- ▶ DO
  - PL .......................... RETARD TO WHITE MARK

- ▶ ORDER “CLIMB SEQUENCE”

**REACHING ACCELERATION ALTITUDE**

- **72 not PEC**
  - NOTE: MINI 1000 FT AGL OR HIGHER IF REQUESTED

  ▶ ANNOUNCE “ACCELERATION ALTITUDE”

- ▶ DO
  - PL .......................... RETARD TO THE NOTCH

- ▶ ORDER “CLIMB SEQUENCE”

CONTINUE THE AFTER TAKE-OFF PROCEDURE - Refer to 02.03 p. 43. After take-off.
3.22. Go-around

**Flight events**

**MINIMUM**
- **PNF**: Announce “MINIMUM”
- **PF**: Announce “GO-AROUND, SET POWER, FLAPS ONE NOTCH”
- **DO**: TQs.......................... CHECK / ADJUST GA
  FLAPS 25 ...................... SELECTED
- **PNF**: Announce “FLAPS 25, POWER SET”
- **PF**: Do Ga Pb on Pl .............. DEPRESSED
  Rotate..................... GA PITCH (+8° NOSE UP)
  Pls.......................... ADVANCED TO RAMP CAVALRY CHARGE ................. CANCEL

**POSITIVE RATE**
- **PNF**: Announce “POSITIVE RATE”
- **PF**: Order “GEAR UP, HEADING, LOW BANK, IAS VGA”
- **DO**: Gear Level.......................... Up
  HDG Mode.......................... SELECTED
  Lo Bank.......................... SELECTED
  IAS.......................... VGA SELECTED
  Taxi & T/O Light................. Off
- **PNF**: Announce “IAS XXX SET”
- **PF**: Announce “CHECK”
- **DO**: Announce “SET”
  Order and do “SET SPEED BUG VGA”

**WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL**
- **PNF**: Announce “GEAR UP”
- **PF**: Order “CLIMB SEQUENCE”

**REACHING ACCELERATION ALTITUDE**
- **PNF**: Announce “ACCELERATION ALTITUDE”
- **PF**: Order “CHECK”
- **DO**: Announce “SET”
  Order and do “SET SPEED BUG VGA”

**REACHING WHITE BUG OR VGA + 15**
- **PNF**: Announce “CLIMB SEQUENCE COMPLETE”
- **PF**: Order “FLAPS 0”
- **DO**: Announce “WHITE BUG / VGA + 15”
  Note: PF will order flaps retraction to 15 when speed reaches VGA + 15kt or white bug, whichever is lower
- **DO**: Flaps lever.......................... SET TO 15°

**WHEN FLAPS AT 15 ON THE FLAPS INDICATOR**
- **PNF**: Announce “FLAPS 15”
- **PF**: Order “FLAPS 0”

**REACHING WHITE OR RED BUG**
- **PNF**: Announce “WHITE BUG” NORMAL CONDITIONS
  “RED BUG” ICING CONDITIONS
- **PF**: Order “FLAPS 0”
- **DO**: Flaps lever.......................... SET TO 0

**WHEN FLAPS AT 0 ON THE FLAPS INDICATOR**
- **PNF**: Announce “FLAPS 0”

**CONTINUE THE AFTER TAKE-OFF PROCEDURE**
Refer to 02.03 p. 43, After take-off.
PNF

1. FLAPS
   Select flaps one notch less than actual.

2. FLAPS: 25°
   When PF orders "FLAPS 25", select flaps 25.

3. TORQUE: ADJUSTED/CHECK
   Adjust/check torque to GA torque.

4. LANDING GEAR LEVER: UP
   Announce "POSITIVE RATE". When PF orders "GEAR UP", select landing gear lever up.

5. AFCS: SET
   Select HDG, LO BANK, IAS VGA.

6. TAXI & T/O LIGHTS: OFF

PF

1. GO-AROUND PB: DEPRESSED
   GA and HDG HOLD appears on FMA.

2. POWER LEVERS: WHITE MARK/RAMP
   At the same moment announce: "GO-AROUND, FLAPS ONE NOTCH, SET POWER".

3. PITCH: 8°
   Follow FD BARS, and cancel AP Cavalry charge.
### 3.23. After landing

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RUNWAY VACATED</strong></td>
<td>➤ ORDER</td>
<td>➤ ORDER</td>
</tr>
<tr>
<td></td>
<td>&quot;AFTER LANDING PROCEDURE&quot;</td>
<td>&quot;AFTER LANDING PROCEDURE COMPLETE&quot;</td>
</tr>
<tr>
<td><strong>IF LAST FLIGHT OF THE DAY</strong></td>
<td>➤ ORDER</td>
<td>➤ ORDER</td>
</tr>
<tr>
<td></td>
<td>&quot;ATPCS TEST&quot;</td>
<td>&quot;ATPCS TEST PERFORMED&quot;</td>
</tr>
<tr>
<td><strong>AFTER 1 MINUTE, PL IN GI POSITION</strong></td>
<td>➤ ORDER</td>
<td>➤ ORDER</td>
</tr>
<tr>
<td></td>
<td>&quot;CL1 FEATHER, THEN SHUT-OFF&quot;</td>
<td>&quot;CL1 FEATHER, SHUT-OFF&quot;</td>
</tr>
<tr>
<td></td>
<td>Wait 20 seconds before shut-off (for last flight of the day)</td>
<td>ACW BTC CHECK CLOSED</td>
</tr>
<tr>
<td><strong>WHEN ENG 1 IS STOPPED</strong></td>
<td>➤ REQUEST</td>
<td>➤ READ FOR HIMSELF</td>
</tr>
<tr>
<td></td>
<td>&quot;AFTER LANDING CHECKLIST&quot;</td>
<td>&quot;AFTER LANDING CHECKLIST&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Refer to QRH 6.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➤ ANNOUNCE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;CHECKLIST COMPLETE&quot;</td>
</tr>
</tbody>
</table>
AFTER LANDING FLOW

CM2

1. TCAS: STBY
2. XPDR: STBY
3. FLAPS: 0°
4. GUST LOCK: ENGAGED
   Pull control column backwards to lock ailerons and elevator.
5. RADAR: STBY
6. TRIMS: RESET
7. ADU: STBY & RESET
8. LIGHTS: OFF
   Switch off Landing and Strobe lights.
9. CONT RELIGHT: OFF
10. ANTI-ICING / DE-ICING: OFF
11. ATPCS TEST (DYNAMIC): PERFORMED (WHEN NECESSARY)

   ARM position:
   - ARM light illuminates green
   - TQ indication increases
   - NP and NH increase slightly

   ENG position:
   - Selected engine TQ decreases below 21%
   - Opposite engine: TQ does not change, UPTRIM light illuminates,
     NP and NH increase slightly.
   - 2.15 seconds later: concerned propeller is automatically feathered,
     ARM green light extinguishes.

   Caution:
   - During ATPCS dynamic test, ACW is temporarily lost and
     consequently both main hyd pumps are temporarily lost as well.
   - Do not perform ATPCS test while taxiing if DC HYD PUMP is not
     operating.
   - If braking is required during test, it will be performed using EMER
     brake handle as required.
   - Wait for 10 minutes if another ATPCS test has to be performed.

12. CONDITION LEVER: FEATHER THEN SHUT-OFF
   Wait for 1 minute in GI position to select CL1 to feather then shut-off (Last flight of the day, wait for 20 seconds before CL1 shut-off. It enables ground staff to check OIL level).

13. ACW BTC: CHECK
   CM2 checks ACW BTC is illuminated and ACW BUS 1 fault light is extinguished.
### 3.24. Parking

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARSHALLER IN SITE</td>
<td>▶ DO TAXI &amp; TO LIGHT.......................... OFF</td>
<td>▶ CHECK AND ANNOUNCE HYDRAULIC PRESS .......... 3X3000 PSI &quot;HYDRAULIC CHECK&quot;</td>
</tr>
<tr>
<td>AT THE GATE</td>
<td>▶ DO PARKING CL2 BRK.......................... ON</td>
<td>▶ DO TIMING........................................... START</td>
</tr>
<tr>
<td></td>
<td>CL 2............................................... FEATHERED</td>
<td>PRP 2........................................... CHECKED STOP</td>
</tr>
<tr>
<td></td>
<td>READY LT.......................................... CHECKED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PROP BRK.......................................... ON</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NP BELLOW 20 %................................. ON/LOCKED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BEACON............................................. OFF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEAT BELT......................................... OFF</td>
<td></td>
</tr>
<tr>
<td>WHEN GPU AVAILABLE</td>
<td>▶ DO DC EXT PWR PB.................. DEPRESSED</td>
<td>▶ READ FOR HIMSELF &quot;PARKING CHECKLIST&quot;</td>
</tr>
<tr>
<td></td>
<td>CL2................................. FUEL SHUT OFF</td>
<td>Refer to QRH 6.01</td>
</tr>
<tr>
<td>PARKING PROCEDURE COMPLETE</td>
<td>▶ REQUEST &quot;PARKING CHECKLIST&quot;</td>
<td>▶ ANNOUNCE &quot;CHECKLIST COMPLETE&quot;</td>
</tr>
</tbody>
</table>
**CM1**

1. **TAXI AND T.O LIGHT**: OFF
2. **PARKING BRAKE**: ON
3. **ENG 2**: FEATHERED
4. **PROP BRAKE**: ON / LOCKED
   Check READY green light illuminated and NP <20%
   Then switch Prop Brake ON.
5. **BEACON LIGHT**: OFF
6. **SEAT BELTS**: OFF
7. **DC EXTERNAL PWR**: ON
   Check voltage first on the lateral panel.
8. **CONDITION LEVER 2**: SHUT-OFF
   Only for last flight of the day, wait 20 seconds before engine 2 shut off (will enable later OIL LEVEL checks).

**CM2**

9. **TIMING**: START
   Only for last flight of the day, wait 20 seconds before engine 2 shut off (will enable later OIL LEVEL checks).
### 3.25. Leaving the aircraft

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL DOCUMENTATION FILLED</td>
<td>ORDER</td>
<td>READ FOR HIMSELF</td>
</tr>
<tr>
<td>&quot;LEAVING THE AIRCRAFT PROCEDURE&quot;</td>
<td>&quot;LEAVING THE AIRCRAFT PROCEDURE COMPLETE&quot;</td>
<td>&quot;LEAVING THE AIRCRAFT CHECKLIST COMPLETE&quot;</td>
</tr>
</tbody>
</table>

- **DO**
  - ICE AND RAIN PROTECTION .......... OFF
  - EFIS ........................................ OFF
  - RADAR ........................................ OFF
  - FUEL PUMPS ............................... OFF
  - EMBR EXIT LT ............................. DISARM
  - CDLS (if installed) ..................... OFF
  - CDLS CTL Panel FAULT LIGHT .......... CHECK
  - EXT POWER .................................... OFF
  - BAT ........................................... OFF

- **ANNOUNCE**
  - "LEAVING THE AIRCRAFT PROCEDURE COMPLETE"

- **READ FOR HIMSELF**
  - "LEAVING THE AIRCRAFT CHECKLIST"
  - Refer to QRH 6.01

- **ANNOUNCE**
  - "CHECKLIST COMPLETE"
LEAVING THE AIRCRAFT FLOW

CM2

1. OXYGEN MAIN SUPPLY: OFF
2. ICE AND RAIN PROTECTION: OFF
3. EXTERNAL LIGHTS OFF
4. CM1 EFIS: OFF
5. CM2 EFIS: OFF
6. RADAR: OFF
7. COMs / NAVs / XPDR: OFF
8. BOTH FUEL PUMPS: OFF
9. EMER EXIT LIGHT: DISARM
10. EXT PWR: OFF
11. BATTERY: OFF
1. Global Navigation Satellite System (GNSS)

On ATR aircraft, the GNSS on board is the Honeywell HT1000.

1.1. Policy

1.1.1. On the ground:

- IDENT page must be displayed. If not, press DATA, then IDENT.
- GNSS is filled in by PF, according to known (runway in use, cruise flight level, SID,...) or expected data.
- PNF must crosscheck the LEGS and PERF INIT pages during the PF departure briefing.
- Conventional radio navigation means must be set for stand-by use, to assure a safe flight path in case of GNSS failure.

1.1.2 In flight:

- PF manages GNSS with PNF crosscheck when autopilot is engaged.
- Below FL100, GNSS is managed by PNF on PF orders.
- Any flight path modification (horizontal or vertical) must be clearly announced and checked by both crew members.
- In case of flight track change due to ATC, the procedures and phraseology hereafter shall be used:

**IF AUTOPILOT ENGAGED:**

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW WAYPOINT ACKNOWLEDGED</td>
<td>▶ ANNOUNCE “CONFIRM”</td>
<td>▶ ANNOUNCE “DIRECT TO XXXXX, CONFIRM?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ DO EXEC KEY …………………. DEPRESSED NEW FLIGHT PATH ………….. MONITORED</td>
</tr>
</tbody>
</table>

**IF AUTOPILOT DISCONNECTED:**

<table>
<thead>
<tr>
<th>Flight events</th>
<th>PNF</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW WAYPOINT ACKNOWLEDGED</td>
<td>▶ DO AND ANNOUNCE “DIRECT TO XXXXX, SET”</td>
<td>▶ ORDER “SET DIRECT TO XXXXX”</td>
</tr>
<tr>
<td></td>
<td>▶ DO EXEC KEY …………………. DEPRESSED</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ DO NEW FLIGHT PATH ………….. MONITORED</td>
</tr>
</tbody>
</table>
1.2. Pre-flight

- Check aircraft model, engines model and navigational database.
- Depress LSK 6R (Line Select Key).

- Check present position, time.
- Depress LSK 6R

- Route 1 page on which you insert your flight plan.
- Enter departure airport ICAO code in the scratchpad (e.g. LFBO)
- Depress LSK 1L to replace the origin box prompts by LFBO.

- Check LFBO written under ORIGIN.
- Enter destination airport ICAO code in the scratchpad (e.g. LFBD)
- Depress LSK 1R
• Check ART 01 written under FLT NO.

• Enter departure runway in the scratchpad (e.g. RWY 32R).
• Depress LSK 2L.

• Check LFBD written under DEST.
• Enter flight number in the scratchpad (e.g. ATR 01).
• Depress LSK 2R.

• Check RW32R 01 written under RUNWAY.
• Depress LSK 6R to activate route 1.

• Depress EXEC KEY to execute the activation.
• Depress LSK 6R to get the PERF INIT page.

• Enter gross weight, in tons, in the scratchpad (e.g. 16.2).
• Depress LSK 1L.

• Enter block fuel, in tons, in the scratchpad (e.g. 2.4).
• Depress LSK 2L.

• Check 16.20 written under GR WT.

• Check 2.40 CALC written under FUEL.
• Check correct zero fuel weight indication under ZFW.
• Enter cruise FL in the scratchpad (e.g. 160).
• Depress LSK 1R.

• Check FL160 written under CRZ ALT.
• Depress EXEC KEY to activate modifications.

• Enter fuel reserves, in tons, in the scratchpad (e.g. 0.65).
• Depress LSK 4L.

• Check 0.65 written under RESERVES.

• Check speeds for climb, cruise and descent phase.
• Check speed transition and transition altitude.
• Depress RTE KEY.

• Depress LSK 5L to copy the route 1 as route 2 to have a second route in case of in flight replanification.
• Check RTE COPY COMPLETE in LSK 5L.
• Depress LSK 6L.

• Check <SEL> 32R under RUNWAYS.
• Depress EXEC KEY to activate modifications.

• Runway 32R is used for departure.
• Depress LSK 4R.

• Check <ACT> 32R under RUNWAYS.
• Depress LSK 1L.
• Check AFRIC 5B <SEL> under SIDS.
• Depress EXEC KEY to activate modifications.

• Depress LSK 2R.

• ILS 23 is expected on arrival.
• Depress LSK 1R.

• Check <SEL> ILS 23 under APPROACHES.
• BGC4 STAR is expected.
• Depress LSK 1L.

• Check BGC 4 <SEL> under STARS.
• Transition will be done through LIBRU.
• Depress LSK 4R.
• Check <SEL> LIBRU under TRANS.
• Depress EXEC KEY to activate modifications.

• Check all <SEL> replaced by <ACT>.
• Depress RTE KEY.

• After AFRIC, no waypoint (route discontinuity), then BGC.

• Insert MEN VOR/DME between AFRIC and BGC.
• Enter MEN in the scratchpad.
• Depress LSK 2R.

• Select MEN VOR/DME located in France.
• Depress LSK 1L.

• Check DIRECT MEN in line 2.
• Depress EXEC KEY to activate modifications.
• Check MOD RTE 1 replaced by ACT RTE 1.
• Route discontinuity has to be cleared.
• Depress LSK 4R.

• Check MOD RTE 1 replaced by ACT RTE 1.
• Depress LSK 3R

• Check discontinuity cleared.
• Depress EXEC KEY to activate modifications.

• Check ACT RTE 1 page 3/3.
• Depress LEGS KEY.

• Check ACT RTE 1 LEGS page 1/5 (track, distance, altitude constraint)
• Depress NEXT KEY.
• Check ACT RTE 1 LEGS page 2/5 (track, distance, altitude constraint)
• Depress NEXT KEY.

• Check ACT RTE 1 LEGS page 3/5 (track, distance, altitude constraint)
• Depress NEXT KEY.

• Check ACT RTE 1 LEGS page 4/5 (track, distance, altitude constraint)
• Depress NEXT KEY.

• Check ACT RTE 1 LEGS page 5/5 (holding point).
1.3. User waypoints

- Data Index page obtained by depressing the Data Key.
- Depress LSK 5L.

- User waypoints can be defined by geographic coordinates or point - bearing - distance or point - bearing / point - bearing.

- Check Point under IDENT.

- Depress LSK 4L.

- User waypoints list is empty.
- Depress LSK 6L.

- User waypoints can be defined by geographic coordinates or point - bearing - distance or point - bearing / point - bearing.

- Enter the waypoint name (e.g. point) in the scratchpad.
- Depress LSK 2L.

- User waypoints list is empty.
- Depress LSK 6L.

- User waypoints can be defined by geographic coordinates or point - bearing - distance or point - bearing / point - bearing.

- Depress LSK 4L.
• Check TOU230.0/027.0 under PB/D OR PB/PB.
• Check geographic coordinates automatically computed.

• Enter N4323.76E00052.27 in the scratchpad (geographic coordinates).
• Depress LSK 3L.

• Check N43°23.76 E000°52.27 under LAT/LONG.
• Depress LSK 5R.

• Check USER WPT SAVE COMPLETE displayed for a couple of seconds.
• Depress LSK 6L.

• Check POINT inserted in the user waypoints list..
1.4. Flight in progress

- ATR01 PROGRESS page obtained by pressing PROG KEY.
- Depress LEGS KEY.

- Inbound FINOT (23.7 Nm to go), you are cleared direct MEN.
- Depress LSK 3L to get MEN in the scratchpad.

- Check MEN replaced FINOT.
- Depress EXEC KEY to activate modifications.

- Depress LSK 1L to go direct to MEN.

- Check MOD RTE 1 LEGS replaced by ACT RTE 1 LEGS.
• Inbound TOU (1.8 Nm to go), you want to remove LACOU from your FPL.
• Depress CLR KEY to get DELETE in the scratch-pad.

• Check LACOU removed and route discontinuity displayed.
• Depress LSK 4L.

• Check route discontinuity cleared.
• Depress EXEC KEY to activate modifications.

• Check MOD RTE 1 LEGS replaced by ACT RTE 1 LEGS.
2. Aircraft Performance Monitoring (APM)

The APM is an onboard system for detecting ice effects on aircraft, developed to enhance the aircraft safety and protection. It acquires the aircraft performance parameters in real time and compares them to the expected values. The monitored performance parameters are the IAS and the drag. Any abnormal increase on one of those parameters leads to an alarm to alert the flight crew. There are three different levels of alarms, depending on the severity of the discrepancy found.

2.1. APM cockpit interface

The interface is composed of:
- a twelve position rotactor selector
- 3 indicators placed in front of the captain and co-pilot to display the performance degradation information
- a FAULT/OFF light button to inform the crew of a problem with APM or to select the APM OFF
- a Push To Test button to test the APM indicators
2.2. Normal procedures

2.2.1. Take-Off weight Selection

To determine the aircraft theoretical and “in flight” performance, the aircraft weight must be known.

As the weight measure is not available, the crew must enter the take-off weight value in the system with a twelve-position rotary selector.

To take into account the new take-off weight value:
– the rotactor must be moved (even if actual weight is the same as the previous flight) to the minimum TO weight and then back to the nearest TO weight
– the selection must be done before the IAS reaches 30 kt
– the selection must be done with both engines running. Indeed, some micro cuts can occur on the DC EMER BUS during the start phase.

⚠️

If the selected weight is below the real one, the performance of the aircraft will be degraded compared to the computed one, and spurious alerts may be triggered. Inversely, if a higher weight is selected, alerts may be hidden, and more specifically, cases of severe icing may be not detected.

Note: Any change of the rotary selector in flight will have no effect

If the crew does not select the take-off weight before take-off with the rotactor, the APM will perform its own take-off weight computation. Computation is performed during the first minutes of the flight and before the APM begins the drag analysis.

APM calculation is less accurate than the flight crew manual selection: analyses of several hundreds of revenue flight have shown that the APM maximum deviation is around ±1500kg for take-off weight computation.

2.2.2. APM Testing

APM testing is activated by the crew daily, to check all APM components work properly.
1. Hotel mode use

1.1. Start up without GPU during long transit (1/4)

- CM2 alone may start eng 2 if necessary.
- Refuel must be complete
# 1.1. Start up without GPU during long transit (2/4)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>READY TO START ENGINE 2 IN HOTEL MODE</td>
<td>▶ ANNOUNCE “GROUND FROM COCKPIT READY TO START ENG 2 IN HOTEL MODE, CONFIRM SERVICE DOOR CLOSED AND AREA CLEAR”</td>
<td>▶ ANNOUNCE “RIGHT SIDE CLEAR, READY TO START ENG 2?”</td>
</tr>
<tr>
<td></td>
<td>▶ ANNOUNCE “I AM READY”</td>
<td>▶ DO SERVICE DOOR ......................... CLOSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WING LIGHTS .............................. ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROP BRAKE ................. ON/PROP BRK blue light</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ENGINE START SELECT .... A+B (or A or B)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“A+B” for the first start of the day, then for the next start, “A” for odd days and “B” for even days, to detect ignition system hidden failure</td>
</tr>
<tr>
<td>AFTER OUTSIDE VISUAL CHECK</td>
<td>▶ DO TIMING* .................................... START</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>START 2 .................................... CHECK ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“For starter limitation time, 30 s maxi when starter off (45%NH)”</td>
</tr>
<tr>
<td>NH=10% (UNTIL NH=19% IF ITT&gt;200°C)</td>
<td>▶ DO ENGINE PARAMETERS...................... CHECK</td>
<td></td>
</tr>
<tr>
<td>ITT INCREASING</td>
<td>▶ ANNOUNCE “IGNITION”</td>
<td></td>
</tr>
<tr>
<td>NH=25%</td>
<td>▶ DO ENGINE PARAMETERS...................... CHECK</td>
<td></td>
</tr>
<tr>
<td>NH=45%</td>
<td>▶ ANNOUNCE “IGNITION”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“When FAULT amber light extinguished “ECU””</td>
<td></td>
</tr>
<tr>
<td>NH=61.5%</td>
<td>▶ ANNOUNCE “PARAMETERS STABILIZED”</td>
<td></td>
</tr>
<tr>
<td>PARAMETERS STABILIZED</td>
<td>CM1 orders GPU disconnection to ground staff</td>
<td>▶ DO ENGINE START ...................... OFF &amp; START ABORT</td>
</tr>
<tr>
<td></td>
<td>DC GEN 2 FAULT ..................... EXTINGUISHED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DC BTC ................................. CHECK CLOSED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BLEED / PACKS / X VALVE .................. OPEN</td>
<td></td>
</tr>
</tbody>
</table>
1.1. Start up without GPU (3/4)

**Flight events**

**AFTER ENG 2 STARTED IN HOTEL MODE**

**CM1**

**CM2**

**SCAN ON OVERHEAD PANEL**

<table>
<thead>
<tr>
<th>Light/Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annunciator Light</td>
<td>Test</td>
</tr>
<tr>
<td>Dome Light</td>
<td>As required</td>
</tr>
<tr>
<td>Standby Compass</td>
<td>Off</td>
</tr>
<tr>
<td>Storm Light</td>
<td>Off</td>
</tr>
<tr>
<td>Fuel X-Feed</td>
<td>Check</td>
</tr>
<tr>
<td>ENG 1 Pump</td>
<td>On</td>
</tr>
<tr>
<td>Doors</td>
<td>Test</td>
</tr>
<tr>
<td>Spoiler Lights</td>
<td>Off</td>
</tr>
<tr>
<td>LDG Gear Indicator</td>
<td>Check</td>
</tr>
<tr>
<td>ENG 1 Fire</td>
<td>3 Tests</td>
</tr>
<tr>
<td>External Lights</td>
<td>As required</td>
</tr>
<tr>
<td>DC/AC Panel</td>
<td>Check</td>
</tr>
<tr>
<td>Sign Panel</td>
<td>Check</td>
</tr>
<tr>
<td>De-icing/Anti-icing</td>
<td>Lights Off</td>
</tr>
<tr>
<td>Probes Heating</td>
<td>On</td>
</tr>
<tr>
<td>Windshield Heating</td>
<td>On</td>
</tr>
<tr>
<td>ACW Panel</td>
<td>Check</td>
</tr>
<tr>
<td>Hyd Panel</td>
<td>Check</td>
</tr>
<tr>
<td>Emer Loc XTM R</td>
<td>Auto</td>
</tr>
<tr>
<td>Air Cond Panel</td>
<td>Check</td>
</tr>
<tr>
<td>Avionics Vent</td>
<td>Auto</td>
</tr>
<tr>
<td>Oxygen</td>
<td>Check</td>
</tr>
<tr>
<td>Comp Smk</td>
<td>Test</td>
</tr>
<tr>
<td>Exhaust Mode</td>
<td>Reset</td>
</tr>
</tbody>
</table>

**SCAN ON PEDESTAL**

<table>
<thead>
<tr>
<th>Item</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lights</td>
<td>As required</td>
</tr>
<tr>
<td>FDEP (if installed), Flight Number + Date</td>
<td>Test and set neutral</td>
</tr>
<tr>
<td>Trims</td>
<td>Test and set neutral</td>
</tr>
<tr>
<td>TCAS</td>
<td>Test/STBY</td>
</tr>
<tr>
<td>VHF</td>
<td>On/TEST</td>
</tr>
<tr>
<td>ADF</td>
<td>On/TEST</td>
</tr>
<tr>
<td>Transponder</td>
<td>STBY/TEST</td>
</tr>
<tr>
<td>Idle Gate</td>
<td>Pulled</td>
</tr>
<tr>
<td>Emer Audio Cancel</td>
<td>Guarded</td>
</tr>
<tr>
<td>Radar</td>
<td>STBY/TEST</td>
</tr>
<tr>
<td>ECP</td>
<td>Test/SET</td>
</tr>
<tr>
<td>GPS</td>
<td>On</td>
</tr>
<tr>
<td>MCDU (if installed with the MPC)</td>
<td>Set</td>
</tr>
<tr>
<td>CDLS</td>
<td>Daily check</td>
</tr>
</tbody>
</table>

**ATC recommendation:**

In case of dual installation check both system using:
- System 1 / A for odd days.
- System 2 / B for even days.

Example: Transponder, Ignition, ADC switch (if installed).
1.1. Start up without GPU during long transit (4/4)

**AFTER CENTRAL PANEL SCAN**

**CM1**

- **SCAN ON CENTRAL PANEL**
  - FUEL QTY: TEST / CHECK
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENGINE INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENGINE INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENGINE INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENGINE INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENGINE INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENGINE INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON
  - FUEL USED: RESET
  - ENG INDICATORS: TEST / CHECK
  - ENG PANEL: CHECK
  - CAB PRESS PANEL: CHECK
  - AUTO PRESS: T/O / LANDING
  - TAT/SAT: CHECK
  - CAP: CLR
  - STBY INSTRUMENTS: .CHECK
  - PWR MGT: T/O
  - SYNCHROPHASER: ON

**CM2**

- **SCAN ON GLARE SHIELD**
  - FO BARS: ON
  - NAV 1 AND 2: ON / TEST
  - ADU: BRT

- **SCAN ON LEFT LATERAL PANEL**
  - NW STEERING: GUARDED
  - OXYGEN MASK: TEST
  - MARKERS: TEST / LO
  - AHRS: CHECK
  - AUDIO 1 SEL: CHECK
  - CAPT SWITCHING PANEL: CHECK
  - CM1: GUARDED

- **SCAN ON LEFT INSTRUMENT PANEL**
  - CLOCK: SET
  - AIR SPEED INDICATOR: CHECK
  - RMI/EHSI: CHECK
  - EADI: CHECK
  - CM1: TEST
  - ALTIMETER: SET
  - VERTICAL AIR SPEED: CHECK

- **SCAN ON RIGHT LATERAL PANEL**
  - EXTRACT AIR FLOW: OPEN
  - OXYGEN MASK: TEST
  - AHRS: CHECK
  - F/O SWITCHING PANEL: CHECK
  - AUDIO 2 SEL: CHECK

- **SCAN ON RIGHT INSTRUMENT PANEL**
  - CM1: TEST
  - VERTICAL AIR SPEED: CHECK
  - ALTIMETER: SET
  - EADI: CHECK
  - CM1: CHECK
  - AHRS: CHECK
  - RMI/EHSI: CHECK
  - CLOCK: CHECK
1. Hotel mode use

1.1. Start up without GPU during long transit (1/4)

- CM2 alone may start eng 2 if necessary.
- Refuel must be complete

**CM1**

- **FUEL X-FEED TEST:**
  - ENG 1 PUMP ON: FEED LO PR 1 Extinguished; FEED LO PR 2 Illuminated
  - FUEL X-FEED in line: FEED LO PR 1 and 2 Extinguished
  - FUEL X-FEED closed: FEED LO PR 1 Extinguished; FEED LO PR 2 Illuminated
  - ENG 2 PUMP ON: FEED LO PR 1 and 2 Extinguished

**CM2**

- **DO**
  - CARGO DOOR CONTROL
  - PANEL COVER ......................... CLOSED
  - EMERGENCY EQUIPMENT ............... CHECK
  - GEARS PINS .............................. ON BOARD
  - DOCUMENTATION ....................... ON BOARD
  - C/B ........................................... CHECK
  - STBY HORIZON ERECTION
  - KNOB .............................. PULL AND MAINTAINED
  - BATTERY ................................. CHECK
  - STBY HORIZON ERECTION
  - KNOB .............................. RELEASED
  - MFC .......................................... CHECK
  - VHF 1 ...................................... ON
  - ATPCS ........................................ TEST
  - COCKPIT COM HATCH ........................ OPEN
  - BRAKE HANDLE ............................ PARKING
  - PL 1 AND 2 ................................. GI
  - GUST LOCK ................................. ON
  - CL 1 AND 2 ................................. FUEL S/O
  - FLAPS LEVER ............................... CHECK
  - EEC 1 AND 2 ............................... CHECK
  - LANDING GEAR LEVER ................. DOWN
  - WIPERS ................................. OFF
  - PROP BRK ................................. ON
  - FUEL PUMP 2 ............................. ON
  - ENG 2 FIRE TEST ....................... PERFORMED

**DO**

- EXTERNAL INSPECTION

**READ AND CHECK**

Refer TO QRH 3.01 (DOWN TO ENG 2 START IN HOTEL MODE)
1.1. Start up without GPU during long transit (2/4)

**Flight events**

**READY TO START ENGINE 2 IN HOTEL MODE**

► **ANNOUNCE**

"GROUND FROM COCKPIT READY TO START ENG 2 IN HOTEL MODE, CONFIRM SERVICE DOOR CLOSED AND AREA CLEAR"

► **ANNOUNCE**

"I AM READY"

**AFTER OUTSIDE VISUAL CHECK**

► **DO**

TIMING* ...................... START
START 2 ..................... CHECK ON

* For starter limitation time, 30 s max when starter off (45% NH)

► **ANNOUNCE**

"FUEL OPEN"

* For ignition time, it should rise within 10 seconds

► **DO**

ENGINE PARAMETERS .............. CHECK

► **ANNOUNCE**

"IGNITION"

TIMING ...................... STOP

**NH=10%**

(UNTIL NH=19% IF ITT>200°C)

► **DO**

CL 2 .................................. FEATHER
TIMING* ................................ START

"FUEL OPEN"

► **DO AND ANNOUNCE**

ENGINE PARAMETERS .............. CHECK

**NH=45%**

► **ANNOUNCE**

"STARTER OFF"

*If not, select rotary selector OFF/START ABORT

► **DO**

TIMING ................................ STOP

**NH=61.5%**

► **ANNOUNCE**

"ITT XXX °C"

► **DO**

IT MAX .................................. CHECK

► **ANNOUNCE**

"ITT XXX °C"

► **DO**

ENGINE START ....... OFF & START ABORT
DC GEN 2 FAULT .......... EXTINGUISHED
DC BTC ....................... CHECK CLOSED
BLEED / PACKS / X VALVE ....... OPEN

**CM1 orders GPU disconnection to ground staff**
1.1. Start up without GPU during long transit (3/4)

**Flight events**

- AFTER ENG 2 STARTED IN HOTEL MODE

**CM1**

- DO EXTERNAL INSPECTION

**CM2**

**SCAN ON OVERHEAD PANEL**
- ANNUNCIATOR LIGHT........... TEST
- DOME LIGHT .................. AS REQUIRED
- STANDBY COMPASS ............ OFF
- STORM LIGHT .................. OFF
- FUEL X-FEED .................. CHECK
- ENG 1 PUMP .................. ON
- DOORS .......................... TEST
- STANDBY COMPASS .......... OFF
- STORM LIGHT ................. OFF
- FUEL X-FEED ................. CHECK
- ENG 1 PUMP .................. ON
- DOORS .......................... TEST
- STANDBY COMPASS .......... OFF
- STORM LIGHT ................. OFF
- FUEL X-FEED ................. CHECK
- ENG 1 PUMP .................. ON
- DOORS .......................... TEST
- STANDBY COMPASS .......... OFF
- STORM LIGHT ................. OFF
- FUEL X-FEED ................. CHECK
- ENG 1 PUMP .................. ON
- DOORS .......................... TEST

**SCAN ON PEDESTRAL LIGHTS**
- AS REQUIRED
- FDEP (If installed) ....... FLIGHT NUMBER+DATE
- TRIMS .................. TEST AND SET NEUTRAL
- TCAS .................... TEST/STBY
- VHF ...................... ON/TEST
- ADF ....................... ON/TEST
- TRANSPONDER ............... STBY/TEST
- IDLE GATE ................. PULLED
- EMER AUDIO CANCEL ........ GUARDED
- RADAR .................. STBY
- ECP ...................... TEST/SET
- GPS ...................... ON
- MCDU (If installed with the MPC) ....... ON
- CDLS .......................... Daily check

**ATC recommendation:**
In case of dual installation check both system using:
- System 1 / A for odd days.
- System 2 / B for even days.
Example: Transponder, Ignition, ADC switch (if installed).
### 1.1. Start up without GPU during long transit (4/4)

<table>
<thead>
<tr>
<th>Flight events</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AFTER CENTRAL PANEL SCAN</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SCAN ON CENTRAL PANEL
- Fuel qty: Test / Check
- TAT/SAT: Check
- CAP: CLR
- STBY instruments: Check
- PWR MGT: T/O
- PEC 1 & 2: ON
- Fuel Used: Reset
- Engine Indicators: Test / Check
- ENG PANEL: Check
- CAB Press Panel: Check
- AUTO PRESS: Test / Landing Elevation
- Trim Indicator: Check
- Flaps Indicator: Check
- Stick Pusher: Depressed
- Hydraulics: Check

#### SCAN ON GLARE SHIELD
- FD bars: On
- NAV 1 and 2: On / Test
- ADU: BRT

#### SCAN ON LEFT LATERAL PANEL
- NW steering: On / Guarded
- Oxygen mask: Test
- Markers: Test / LO
- AHRS: Check
- Audio 1 SEL: Check
- Capt Switching Panel: Check
- (E)GPWS: Guarded

#### SCAN ON LEFT INSTRUMENT PANEL
- Clock: Set
- Air Speed Indicator: Check
- RMI/EHSI: Check
- EADI: Check
- (E)GPWS: Test
- Altimeter: Set
- Vertical air speed: Check
- ADC switch: 1 or 2

#### SCAN ON RIGHT LATERAL PANEL
- Extract air flow: Open
- Oxygen mask: Test
- AHRS: Check
- F/O switching panel: Check
- Audio 2 SEL: Check

#### SCAN ON RIGHT INSTRUMENT PANEL
- APM (if installed): Daily test
- (E)GPWS: Test
- Vertical air speed: Check
- Altimeter: Set
- EADI: Check
- RM/EHSI: Check
- Air speed indicator: Check
- Clock: Set
### CM1

1. **MECHANICAL CALL: PERFORMED**
   Start timing when CM2 announces “Starter ON”.

2. **TIMING: START**
   Start timing when CM2 announces “Starter ON”.

3. **STARTER 2: CHECK ON**

4. **ENGINE PARAMETERS: MONITOR**
   According to the CM2 callouts.

5. **START OFF: CHECK**
   At 45% NH, check Start ON light is extinguished and announce “STARTER OFF” and stop timing.

---

### CM2

1. **“U” CHECK: PERFORMED**
   - **DOORS**: CLOSED
   - Check the UNLK amber light is extinguished.
   - **WING LIGHTS**: ON, to visually inform that start is in Hotel Mode.
   - **Fuel Pump N°2**: RUN
   - **PROPELLER BRAKE**: ON
   - If no AC GPU, press HYD AUX PUMP, in order to get the READY green light, then propeller brake switch to ON.
   - **ENGINE START ROTARY SELECTOR** (or A or B)

2. **START PB: DEPRESSED**
   - **START 2 PB**: ON
   - Depress START 2 PB after a visual check on right side. Announce: “STARTER ON”.

3. **CL2: FEATHER**
   - Advance CL 2 to feather when NH reaches 10% and announce: “FUEL OPEN”.

4. **TIMING: START**

5. **ENGINE PARAMETERS: MONITOR**
   - When the ITT needle increases, announce: “IGNITION”.
   - ITT must increase within 10 sec on CM2 Timing. Otherwise CL2 shut off.

6. **ECU FAULT LIGHT: EXTINGUISH**
   - At 25% NH, check ECU fault light extinguishes, announce “ECU ON”.

7. **ENGINE PARAMETERS: MONITOR**
   - At 45% NH, announce “45%”.

8. **ENGINE START ROTARY SELECTOR: OFF**
   - When engine parameters are stabilised, announce “PARAMETERS STABILISED”, then turn the rotary selector to OFF/START ABORT.

9. **BLEED 2 / PACKS 1+2 / X VALVE: OPEN**
   - When only one BLEED is OPEN on ground, the X VALVE is opened to supply both packs.
1.2. Start up without GPU during short transit

ENG 2 FIRE tests are performed before starting engine 2 in Hotel mode.

1.3. Ramp arrival without GPU

ENG 2 runs until "Leaving the Aircraft Procedure".

Flight events

CM1

CM2

DO

DO

EXTERNAL INSPECTION

"LEAVING THE AIRCRAFT PROCEDURE"

DO

DO

"LEAVING THE AIRCRAFT PROCEDURE COMPLETE"

READ FOR HIMSELF

"LEAVING THE AIRCRAFT CHECKLIST"

Refer to QRH 6.01

ANNOUNCE

"CHECKLIST COMPLETE"
CM2
1. OXYGEN MAIN SUPPLY: OFF
2. ICE AND RAIN PROTECTION: OFF
3. EXTERNAL LIGHTS OFF
4. CM1 EFIS: OFF
5. CM2 EFIS: OFF
6. RADAR: OFF
7. COMs: OFF
8. CL 2: FUEL S/O
9. BOTH FUEL PUMPS: OFF
10. EMER EXIT LIGHT: DISARM
11. BATTERY: OFF
2. Noise abatement procedures

The noise abatement procedures contained in PANS-OPS (Vol 1 Part I section 7) have been designed for application to turbojet aeroplanes only.

Even if not required for turbopropeller aeroplanes, ATR recommends the following procedures for noise reduction on the ground.

- Do not use reverse while taxiing
- Minimize the use of reverse at landing

No particular noise abatement procedures are recommended in flight.

Note:

1. “Nothing in these procedures shall prevent the pilot-in-command from exercising authority for the safe operation of the aeroplane” [PANS-OPS Vol 1 Part I section 7 chap 1]

2. These procedures should not be required in adverse operating conditions such as:
   a) if the runway is not clear and dry, i.e. if it is adversely affected by snow, slush, ice or water, or by mud, rubber, oil or other substances.
   b) In conditions when the ceiling is lower that 150 m (500ft) above aerodrome elevation, or when the horizontal visibility is less than 1.9 km

3. These procedures should not be required in case of any technical problem affecting the safe operation of the aeroplane

Local aerodrome procedures: Refer to published airport manuals (In Jeppesen charts, the Noise Abatement page is usually in chapter 10-4).
3. Icing conditions

Please refer to “Cold Weather Operations” book.
4. Operations on wet and contaminated runways

Please refer to the “Performance” book.
5. Push-back operations

5.1. Power back

- Power back is done after ATC clearance.
- Ground staff area checked cleared before and during power back, by using conventional signs and / or headphones with several people, as per prevailing airline policy.
- To avoid moving forward, apply slight power back just before releasing brake.
- Each crew member keeps his feet on the floor. NEVER USE BRAKES during power back (to avoid tail strike).
- Nose wheel steering remains ON.
- Use Ground Idle or positive power to decrease speed or stop.
- Power back is performed at low speed.
- No specific ground staff phraseology.

5.2. Push-back with Tug

- **CAUTION:** To avoid NAC OVHT triggering, the wind direction has to be taken into account for the push back in hotel mode.
- Push back is done after ATC clearance.
- Ground staff remains connected with the aircraft by using conventional signs and / or headphones with several persons according to airline policy. Parking brake released and steering OFF.
- Each crew member keeps his feet on the floor. NEVER USE BRAKES during push back (to avoid tail strike and / or constraint on towing system). Wait for disconnection of the tow bar by the ground staff before switching ON the steering
- Set nose wheel steering to ON. Caution: never set the hydraulic of the steering before the deconnection of the tow bar.
- Specific phraseology is used:
6. Start up engine n°1 during taxiing

The ATR Training Center uses "start of both engines on stand". Nevertheless, ATR's planes are technically able to start ENG 1 during taxiing. This procedure is an operator's choice and under its responsibility. For safety reasons, engine 1 start must be performed on a clear taxiway, and in low workload environment.

Flight events

<table>
<thead>
<tr>
<th>ON CAPTAIN DECISION</th>
<th>CM1</th>
<th>CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AFTER OUTSIDE VISUAL CHECK</strong></td>
<td>▶ ORDER “START ENGINE 1, RADIO MY SIDE”</td>
<td>▶ ANNOUNCE “STARTING ENG 1”</td>
</tr>
<tr>
<td>NH = 10% (UNTILL NH=19% IF ITT&gt;200°C)</td>
<td>▶ DO START 1 PB DEPRESSED TIMING START</td>
<td>▶ DO AND ANNOUNCE CL 1 FEATHERED “FUEL OPEN”</td>
</tr>
<tr>
<td>ITT INCREASING</td>
<td>▶ ANNOUNCE “IGNITION”</td>
<td>▶ DO ENGINE PARAMETERS CHECK</td>
</tr>
<tr>
<td>NH = 25%</td>
<td>▶ ANNOUNCE “ECU”</td>
<td></td>
</tr>
<tr>
<td>NH INCREASING</td>
<td>▶ DO AND ANNOUNCE ENGINE PARAMETERS CHECK “OIL PRESS”</td>
<td></td>
</tr>
<tr>
<td>NH = 45%</td>
<td>▶ ANNOUNCE “45%, STARTER OFF”</td>
<td></td>
</tr>
<tr>
<td>NH = 61.5%</td>
<td>▶ ANNOUNCE “ITT XXX °C”</td>
<td></td>
</tr>
<tr>
<td>PARAMETERS STABILIZED</td>
<td>▶ ORDER “CL1 MAX RPM”</td>
<td></td>
</tr>
<tr>
<td>WHEN NP STABILISED AROUND 71%</td>
<td>▶ ANNOUNCE “LOW PITCH”</td>
<td>▶ CHECK ACW GEN 1 ON LINE</td>
</tr>
</tbody>
</table>
6. Start up engine n°1 during taxiing

The ATR Training Center uses "start of both engines on stand". Nevertheless, ATR’s planes are technically able to start ENG 1 during taxiing. This procedure is an operator’s choice and under its responsibility. For safety reasons, engine 1 start must be performed on a clear taxiway, and in low workload environment.

**NORMAL PROCEDURES**

**ADDITIONAL STANDARD OPERATING PROCEDURES**

**ON CAPTAIN DECISION**

**AFTER OUTSIDE VISUAL CHECK**

**NH = 10%**

- \( \) UNTILL NH = 19% IF ITT > 200°C

**ITT INCREASING**

**NH INCREASING**

- \( \) NH = 45%

**NH = 61.5%**

**PARAMETERS STABILIZED**

- 42 PEC
- 72 PEC
- 72 not PEC

**WHEN LOW PITCH AND SGL CH LIGHTS ILLUMINATED**

**WHEN NP STABILISED AROUND 71%**

**FLIGHT EVENTS**

**CM1**

- ▶ ORDER “START ENGINE 1, RADIO MY SIDE”
- ▶ ANNOUNCE “STARTING ENG 1”
- ▶ ORDER “CL1 AUTO”
- ▶ ORDER “CL1 MAX RPM”
- ▶ ANNOUNCE “SINGLE CHANNEL…….. LOW PITCH”
- ▶ ORDER “CL1 AUTO”
- ▶ ORDER “CL1 MAX RPM”
- ▶ ANNOUNCE “LOW PITCH”
- ▶ CHECK ACW GEN 1 ......................... ON LINE

**CM2**

- ▶ ORDER “CL1 AUTO”
- ▶ ORDER “CL1 MAX RPM”
- ▶ ANNOUNCE “OIL PRESS”
- ▶ ANNOUNCE “45%, STARTER OFF”
- ▶ DO STARTER OFF ......................... CHECK
  - TIMING ..................................... STOP
  - ITT MAX .................................... CHECK
- ▶ ANNOUNCE “ITT XXX °C”
- ▶ ANNOUNCE “PARAMETERS STABILIZED”
- ▶ ORDER “CL1 AUTO”
- ▶ ORDER “CL1 MAX RPM”
- ▶ ANNOUNCE “SINGLE CHANNEL…….. LOW PITCH”
- ▶ ORDER “CL1 AUTO”
- ▶ ORDER “CL1 MAX RPM”

**FOR TRAINING ONLY**
ENgINE 1 START DURING TAXI FLOW

CM2

1. ENGINE START ROTARY SELECTOR: A+B
   START 1 PB: ON
   Depress the START 1 PB after a visual check on left side.

2. TIMING: START

3. CONDITION LEVER 1: FEATHER
   Advance condition lever 1 to feather when NH reaches 10% and announce: "FUEL OPEN".

4. ENGINE PARAMETERS: MONITOR
   When the ITT needle increases, announce: "IGNITION".

5. ECU FAULT LIGHT: EXTINGUISH
   At 25% NH, check that the ECU fault light extinguishes, announce "ECU ON".

6. ENGINE PARAMETERS: MONITOR
   OIL PRESS needle increase, announce "OIL PRESS"
   At 45% NH, announce "45%"
   Stop timing, announce "STARTER OFF" if ON, white light extinguished on START 1 PB.

7. ENGINE START ROTARY SELECTOR: OFF
   When engine parameters are stabilised, announce "PARAMETERS STABILISED", then turn the rotary selector to OFF/START ABORT.

8. CONDITION LEVER 1: MAX RPM/AUTO

9. PEC SINGLE CHANNEL TEST: CHECK
   Check SGL CH is illuminated, then extinguished.

10. LO PITCH LIGHT: ILLUMINATED

11. ACW GEN 1: ON LINE
    Check ACW BTCs OPEN.
7. Operating minima

7.1. Definitions

**MEA (Minimum En-route IFR Altitude)**

The lowest published altitude (or Flight Level) between radio fixes that meets obstacle clearance requirements between those fixes and in many countries assures acceptable navigational and radio signal coverage.

**MORA (Minimum Off-Route Altitude)**

A MORA route provides reference point clearance within 10 NM (18.5 km) of the route centerline (regardless of the route width) and end fixes.

A MORA grid altitude provides a reference point clearance within the section outlined by latitude and longitude lines.

MORA values clear all reference points by 1000-ft (300 m) in areas where the highest reference points are 5000-ft (1500 m) MSL, or lower.

MORA values clear all reference points by 2000-ft (600 m) in areas where the reference points are above 5000-ft (1500 m) MSL.

When a MORA is shown along a route as “unknown” or within a grid as “unsurveyed” a MORA is not shown due to incomplete or insufficient information.

**MOCA (Minimum Obstruction Clearance altitude)**

The lowest published altitude in effect between radio fixes on VOR airways, off-airways routes, or route segments, which meets obstacle clearance requirements for the entire route segment.

**MSA (Minimum Sector Altitude)**

Altitude depicted on instrument approach, SID or STAR charts and identified as the minimum safe altitude which provides a 1000 ft (300 m) obstacle clearance within a 25 NM (46 km) (or other value as stated) radius from the navigational facility upon which the MSA is predicated.

**Terminal area**

Except during IFR approach or departure, when on track with a published minimum altitude on airport charts, the minimum altitude must not be lower than the Minimum Sector Altitude (MSA).
7.2 Approach minima

7.2.1. Classification of airplanes

For approach, aircraft are classified in categories: A, B, C, D, and E.

The criteria taken into account for the classification of airplanes is the indicated airspeed at threshold ($V_{AT}$) in landing configuration at the maximum certified landing weight.

$V_{AT} = 1.3 \times VS$ for ATR 42 – 300 or $V_{AT} = 1.23 \times VS1G$ for the other ATR models. ATR aircraft are classified class B.

The airplane categories corresponding to $V_{AT}$ values are in the table 2 below:

### Aircraft category (multi-engine) - Extracted from Appendix 2 to OPS 1.430 c

<table>
<thead>
<tr>
<th>Aeroplane Category</th>
<th>$V_{AT}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$V_{AT} &lt; 91$ kt</td>
</tr>
<tr>
<td>B</td>
<td>$91 \text{ kt } \leq V_{AT} &lt; 121$ kt</td>
</tr>
<tr>
<td>C</td>
<td>$121 \text{ kt } \leq V_{AT} &lt; 141$ kt</td>
</tr>
<tr>
<td>D</td>
<td>$141 \text{ kt } \leq V_{AT} &lt; 166$ kt</td>
</tr>
<tr>
<td>E</td>
<td>$166 \text{ kt } \leq V_{AT} &lt; 211$ kt</td>
</tr>
</tbody>
</table>

7.2.2 Procedure protections

ATR is integrated in category B

<table>
<thead>
<tr>
<th>Vat</th>
<th>91/120 Kt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Approach</td>
<td>120/180/(170) Kt*</td>
</tr>
<tr>
<td>Final Approach</td>
<td>85/130 Kt</td>
</tr>
<tr>
<td>Circle to land</td>
<td>135 Kt</td>
</tr>
<tr>
<td>Missed approach</td>
<td>130/150 Kt</td>
</tr>
</tbody>
</table>

* Speed use in parallel entry
7.2.3. Obstacle clearance

The arrow represents the radius for the circle to land protection zone.

<table>
<thead>
<tr>
<th>ATR is integrated in category B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
</tr>
<tr>
<td>Radius</td>
</tr>
<tr>
<td>Obstacle clearance</td>
</tr>
<tr>
<td>OCH</td>
</tr>
<tr>
<td>Minimum visibility</td>
</tr>
</tbody>
</table>

7.2.4. Entry in the standard Patterns:

- (1) parallel entry
  Parallel holding course, turn left and return to holding fix or intercept holding course

- (2) teardrop entry
  Proceed on outbound track of 30° to holding course, turn right to intercept holding course.

- (3) direct entry
  Turn right and fly the pattern.
7.3. **RVR / visibility**

All tables are extracted from the OPS 1.430 appendix 1.

### 7.3.1. Take-off

<table>
<thead>
<tr>
<th>Facilities</th>
<th>RVR / Visibility (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil (day only)</td>
<td>500 m</td>
</tr>
<tr>
<td>Runway edge lighting and/or centreline marking</td>
<td>250/300 m (1) (2)</td>
</tr>
<tr>
<td>Runway edge and centreline lighting</td>
<td>200/250 m (1)</td>
</tr>
<tr>
<td>Runway edge, centreline lighting and multiple RVR information</td>
<td>150/200 m (1) (4)</td>
</tr>
</tbody>
</table>

(1) Higher values apply to Category D aircraft.
(2) For night operations, at least the runway edge and runway end lights are required.
(3) The Reported Visibility Representative / RVR for the initial part of the take-off run may be replaced by a pilot assessment.
(4) The required RVR value must be achieved for all of the relevant RVR reporting points except as stated in (3), above.

### 7.3.2. Non-precision approach

<table>
<thead>
<tr>
<th>Facility (approach aid)</th>
<th>lowest MDH (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILS with no glide path (LLZ)</td>
<td>250</td>
</tr>
<tr>
<td>SRA (terminating at 1/2 NM.)</td>
<td>250</td>
</tr>
<tr>
<td>SRA (terminating at 1 NM.)</td>
<td>300</td>
</tr>
<tr>
<td>SRA (terminating at 2 NM.)</td>
<td>350</td>
</tr>
<tr>
<td>VOR</td>
<td>300</td>
</tr>
<tr>
<td>VOR/DME</td>
<td>250</td>
</tr>
<tr>
<td>NDB</td>
<td>300</td>
</tr>
<tr>
<td>VDF (QDM and QGH)</td>
<td>300</td>
</tr>
</tbody>
</table>
7.3.3. Cat I approach

<table>
<thead>
<tr>
<th>Decision Height (7)</th>
<th>Facilities/RVR (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full (1)(6)</td>
</tr>
<tr>
<td></td>
<td>Intermediate (2)(6)</td>
</tr>
<tr>
<td></td>
<td>Basic (3)(6)</td>
</tr>
<tr>
<td></td>
<td>Nil (4)(6)</td>
</tr>
<tr>
<td>200 ft</td>
<td>550 m</td>
</tr>
<tr>
<td></td>
<td>700 m</td>
</tr>
<tr>
<td></td>
<td>800 m</td>
</tr>
<tr>
<td></td>
<td>1000 m</td>
</tr>
<tr>
<td>201-250 ft</td>
<td>600 m</td>
</tr>
<tr>
<td></td>
<td>700 m</td>
</tr>
<tr>
<td></td>
<td>800 m</td>
</tr>
<tr>
<td></td>
<td>1000 m</td>
</tr>
<tr>
<td>251-300 ft</td>
<td>650 m</td>
</tr>
<tr>
<td></td>
<td>800 m</td>
</tr>
<tr>
<td></td>
<td>900 m</td>
</tr>
<tr>
<td></td>
<td>1200 m</td>
</tr>
<tr>
<td>301 ft and above</td>
<td>800 m</td>
</tr>
<tr>
<td></td>
<td>900 m</td>
</tr>
<tr>
<td></td>
<td>1000 m</td>
</tr>
<tr>
<td></td>
<td>1200 m</td>
</tr>
</tbody>
</table>

(1) Full facilities comprise runway markings, 720 metres of HI/MI approach lights, runway edge lights, threshold and end lights. Lights must be on.
(2) Intermediate facilities comprise runway markings, 420-719 metres of HI/MI approach lights, runway edge, threshold and end lights. Lights must be on.
(3) Basic facilities comprise runway markings, less than 420 metres of HI/MI approach lights, runway edge, threshold and end lights. Lights must be on.
(4) Nil approach light facilities comprise runway markings, runway edge, threshold and end lights or no lights at all.
(5) The RVR values are either as reported, or met visibility converted as in the previous table.
(6) The above figures are only applicable to conventional approaches with a slope not exceeding 4°.
(7) The DH mentioned in the table refers to the initial calculation of DH; when selecting the associated RVR it is not necessary to take account of ‘rounding up’ to the nearest ten feet which may be done for operational purposes.

7.3.4. RVR / visibility conversion

<table>
<thead>
<tr>
<th>Lighting element in operation</th>
<th>RVR = Reported Meteorological visibility multiplied by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day</td>
</tr>
<tr>
<td>HI approach and runway lighting</td>
<td>1.5</td>
</tr>
<tr>
<td>Any type of lighting installation other than above</td>
<td>1.0</td>
</tr>
<tr>
<td>No lighting</td>
<td>1.0</td>
</tr>
</tbody>
</table>

* This table can be used only for flight management, never for flight preparation.
7.4. Flight preparation

- TAKE-OFF AIRPORT
  - Visibility / RVR > takeoff minima
    - NO
      - NO-GO
    - YES
      - IF WEATHER CONDITIONS & ATR PERFORMANCES > landing minima
        - NO
          - 1 TAKE-OFF ALTERNATE AIRPORT REQUIRED
            - For 1 hour before and after ETA:
              - Flight time < 1 hour single engine (around 170 Nm for an ATR 42-300)
              - RV/YSI > minima
              - Cloud layer > minima for non-precision approach
        - YES
          - DESTINATION AIRPORT
            - For 1 hour before and after ETA:
              - Flight time < 5 hours
              - 2 runways with 2 instrument approach procedures established with 2 independent radio aids
              - Visibility > 5000 m
              - Cloud layer > 2000 ft or MDA circling + 500 ft
            - NO
              - NO-LANDING ALTERNATE REQUIRED
            - YES
              - 1 LANDING ALTERNATE REQUIRED
                - For 1 hour before and after ETA:
                  - RV/YSI > RVR minimum
                  - CLOUD LAYER > MDH of non-precision approach
      - NO-LANDING ALTERNATE REQUIRED
      - 1 LANDING ALTERNATE REQUIRED
      - 2 LANDING ALTERNATES REQUIRED

- For flight preparation, apply the following minima:
  - For 1 hour before and after ETA:

<table>
<thead>
<tr>
<th>Type of approach</th>
<th>Planning minima</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat II and Cat III</td>
<td>Cat I minima (RVR)</td>
</tr>
<tr>
<td>Cat I</td>
<td>Non-precision approach minima (MDH / RVR)</td>
</tr>
<tr>
<td>Non-precision</td>
<td>Non-precision approach minima plus 200 ft/1000 m (MDH/MDA + 200 ft / RV/1/1000 m)</td>
</tr>
<tr>
<td>Circling</td>
<td>Circling minima</td>
</tr>
</tbody>
</table>
7.5. Airport approach facilities

7.5.1. Runway approach line

- Full facilities comprise runway markings, 720 meters of HI/MI approach lights, runway edge lights, threshold and end lights. Lights must be on.

- Intermediate facilities comprise runway markings, 420-719 meters of HI/MI approach lights runway edge, threshold and end lights. Lights must be on.

- Basic facilities comprise runway markings, less than 420 meters of HI/MI approach lights, runway edge, threshold and end lights. Lights must be on.

- Nil approach light facilities comprise runway markings, runway edge, threshold and end lights or no lights at all.
7.5.2. Visual aids

**VASI STANDARD**
(Used for ATR cockpit)

- **HIGH**
- **HIGH**
- **ON SLOPE**
- **LOW**

**VASI 2 BARS**

- **HIGH**
- **ON SLOPE**
- **LOW**

**PAPI**

- **HIGH**
- **SLIGHTLY HIGH**
- **ON SLOPE**
- **SLIGHTLY LOW**
- **LOW**
1. Take-off

Normal or icing conditions

- **NORMAL PROCEDURES SCHEMATICS**

- **CALL OUT**
  - PF actions
  - PNF actions

- **CHECK, I HAVE CONTROL**
  - TAKE OFF AT V1... V1... KT

- **SET POWER**
  - CM1 release PLs

- **GEAR UP**
  - CM1 release PLs

- **SET POWER**
  - 70 Kt V1 VR

- **ATPCS ARMED, POWER SET**
  - Adjust/check torques
  - Check APCS armed
  - Set landing gear lever UP
  - Set Yaw Damper ON
  - Set Taxi & TO light OFF

- **ACCELERATION ALTITUDE**
  - Increases IAS (pitch wheel)
  - Set PWR, MGT CLB
  - Check torques # 80 % (to avoid overtorque)
  - Set CLs to white mark
  - Set bleed ON
  - Set CONT RLT ON/OFF on PF demand
  - Set IAS 160 kr/170 kr
  - Set No=86%, 42 not PEC
  - Set torques = amber bars

- **FACES**
  - White bug +10
  - Red bug +10

- **CLIMB SEQUENCE**
  - FLAPS 0°

- **SPEED BUG 160/170°**

- **SET HIGH BANK**

- **AFTER TAKE OFF CLs**
  - Allimeters setting

**Common faults:**
1. Incorrect power settings.
2. Insufficient rudder inputs to maintain runway axis.
3. At rotation, a too rapid pitch increase which could result in speed control problems during engine failure.
4. Wrong or no calls.
5. Incorrect hand movements.
6. No "positive rate" check and/or announcement before gear retraction.
7. No speed check/announcement before flap retraction.
8. Inadequate crosswind correction.
2. ILS 2 Engines  
Normal or icing conditions

**Note 1**  White bug + 10 is conservative for High bank with flaps 15, in normal and in icing conditions.

*Common faults*:  
1. Presets not used (torque and pitch).  
2. Standard calls forgotten by the PNF.  
3. Overcontrol by the PF.

*Note*: PNF calls for any deviation  
- "SPEED", if +10/-0 Kt deviation exceeded.
- "GLIDE SLOPE", if ≥ dot deviation exceeded.
- "LOCALISER", if ≥ dot deviation exceeded.

PF actions:  
- Setting  
- GO AROUND  
- LAND  
- FLAPS 30
- FLAPS 15
- FLAPS 25
- FLAPS 10
- FLAPS 5
- FLAPS 0
- FLAPS -2
- FLAPS -5

PNF actions:  
- Calling  
- GO AROUND  
- LAND  
- FLAPS 30
- FLAPS 15
- FLAPS 25
- FLAPS 10
- FLAPS 5
- FLAPS 0
- FLAPS -2
- FLAPS -5

Respect Stabilization Screen Height: 1000 FT IMC / 500 FT VMC, IF NOT: GO AROUND
3. Non precision approach

Normal or icing conditions

Before leaving the holding pattern:
- Landing data must be set.
- MDA must be set on altimeter.
- New alt is must be set (VOR / ADF).
- Arrival briefing complete.
- Descent and Approach C/L complete.

Locator approach:
- CRS set on final course
- Use HDG mode for approach

VOR approach:
- PF CRS set on final course
- PNF CRS set on outbound if necessary then final course
- Use HDG mode for approach
- If DME collocated, NAV mode can be used

ATR recommendation:
Go Around at MDA if no visual

Legend:
- CALL OUT
- PF action
- PNF action

Note 1: White bag + 10 is conservative for high bank with flaps 15, in normal and in icing conditions.

Note 2: Vapp = wind + wind factor

Note 3: Or set actual Mda + 300 ft if GA altitude is lower than actual

Note 4: Centered on average heading when drift corrected, if necessary (corrections inside HDG bug)
4. Circling approach

Normal or icing conditions

**CAUTION:** White bug + 10 may exceed 135kts. In this specific case, refer to operators SOR.

**Note 1** White bug + 10 is conservative for high bank with flaps 15 in normal and in icing conditions.

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**SPEED BUG TO WHITE BUG + 10**

**BEFORE LANDING C/L**

Standard glide slope interception

**C/L COMPLETE, EXCEPT FLAPS 30/35**

**MINIMUM**

MDA of circle to land

**FLAPS 30**

**FLAPS 35**

**MINIMUM**

White bug + 10

Standard calls on final

42 not PEC

72 not PEC

42 PEC

72 PEC

**SPEED BUG VAPP**

**ALT SET, HEADING XXX SET**

**CALL OUT**

PF actions

PNF actions

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Abeam threshold, start timing:
(Height/20) + 1 sec. / kt of head/tail wind = outbound time in seconds

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**Note:**
- The figure illustrates the circling approach for normal or icing conditions.
- The diagram includes critical points such as speed bug, white bug, and minimum altitude.
- Additional notes and caution statements are provided for specific conditions.
5. Go-around 2 engines

Normal or icing conditions

**Common faults**:
1. PF forgets to depress G/A P/B.
2. PNF forgets standard calls.
3. PNF forget to select upper modes on ADU.

- Set landing gear lever UP
- Check Yaw Damper ON
- Set HDG mode
- Set Low Bank
- Set IAS mode with VGA
- Set Taxi & P/O lights OFF

**Note 1**
The highest value between:
- 1000 feet AAL,
- the value specified on Jeppesen chart,
- a specific computation.
6. Standard visual pattern 1500 ft AAL

Normal or icing conditions

Note 1: White bug + 10 is conservative for high bank with flaps 15 in normal and in icing conditions.

Note 2: Before landing C/L must be complete before reaching 500 ft AAL.
Dear Readers,
Every effort has been made to ensure document quality.

However please do not hesitate to share your comments and information with us by using the following address: flight-ops-support@atr.fr

Yours faithfully

Your ATR Training and Flight Operations support team.