Normal Procedures

ATR Training & Flight Operations Services

Flight Crew Training Manual

Edition 2009

An Alenia Aeronautica and EADS joint venture

ATR

foreword

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.

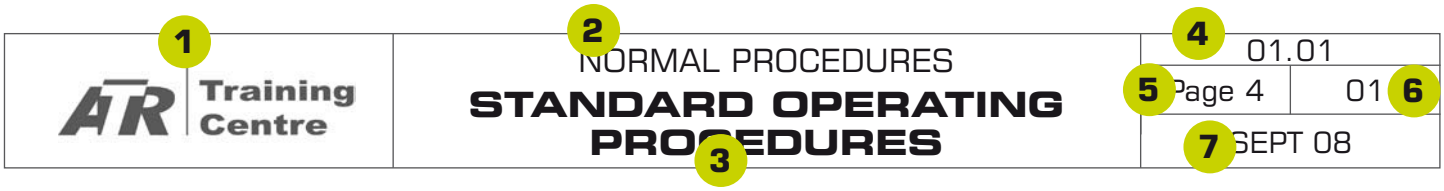
In the Emergency & Abnormal Procedures manual, the general management of abnormal situations is explained. Then, a detailed presentation of the procedures to apply per specific situation is made.

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.

TOP OF PAGE



1. ATC logo
2. Part title
3. Chapter title
4. Chapter & sections numbers
5. Page numbering for the section
6. Sequence number
7. Date of issue

LATERAL BOOKMARK

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

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 preceeded with all actions performed from memory.

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

2. Crew coordination

2.1. Crew function

FLIGHT PHASES		CM1	CM2
ON THE GROUND < 70Kt		PF	PNF
ON THE GROUND > 70Kt or IN FLIGHT	1st situation*	PF	PNF
	2nd situation*	PNF	PF

* 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

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Pilot flying transfer

• The PF function may be transfered, due to ~~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, wich 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	CM1	CM2
READY TO TAXI	▶ORDER "REQUEST TAXI CLEARANCE"	▶DO TAXI CLEARANCE..... REQUESTED
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	▶DO COCKPIT COM HATCH.... CLOSED BLOCK TIME..... ANNOUNCED SECURITY ..... CHECK LEFT SIDE TAXI & T/O LIGHT..... ON PARKING BRAKE..... RELEASED	▶DO SECURITY..... CHECK RIGHT SIDE
	BRAKES CHECK: for passengers comfort, the following procedure can be used: *– set taxi power* *– parking brake handle from ON to EMER position* *– then CM2 checks brakes (parking brake released)* *– then CM1 checks brakes (CM2 releases) and CM1 starts to taxi.*	
ON TAXIWAY	▶ORDER "TAXI PROCEDURE" ▶DO INSTRUMENTS ..... CHECK* * *CHECK HEADING, BEARINGS, HORIZON / RMI*	▶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

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Flight events	CM1	CM2
WHEN PF AND PNF READY	PF ▶DO T/O BRIEFING.....PERFORMED *Refer to 01.03 p. 37, take-off briefing*	
AFTER PF TAKE-OFF BRIEFING		▶ANNOUNCE "TAXI PROCEDURE COMPLETE"
WHEN TAXI PROCEDURE COMPLETE	▶REQUEST AND ANSWER "TAXI CHECKLIST"	▶ANNOUNCE AND READ "TAXI CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "C/L COMPLETE"

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.*

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There are 2 ways to execute a procedure:

• **SCANS** enable the checking of all PBs, switches and lights on the panel.

They are executed:

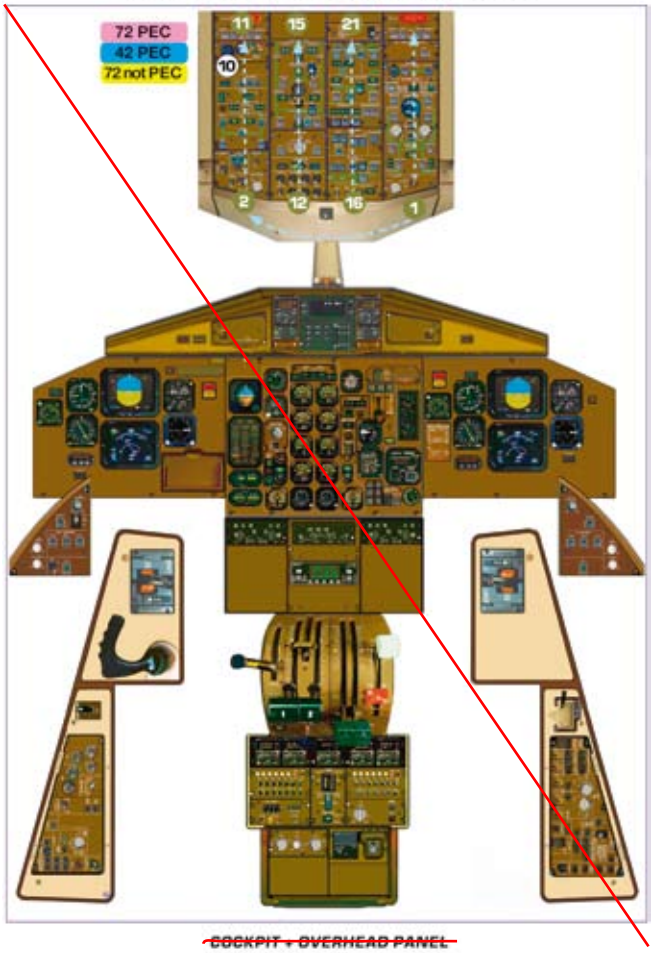
– from memory

– following a logical way (upward).

Example:

Preliminary cockpit preparation

PRELIMINARY COCKPIT PREPARATION SCAN (1/4)



COCKPIT + OVERHEAD PANEL

• **FLOWS** enable a predetermined order for actions.

They are executed:

– from memory

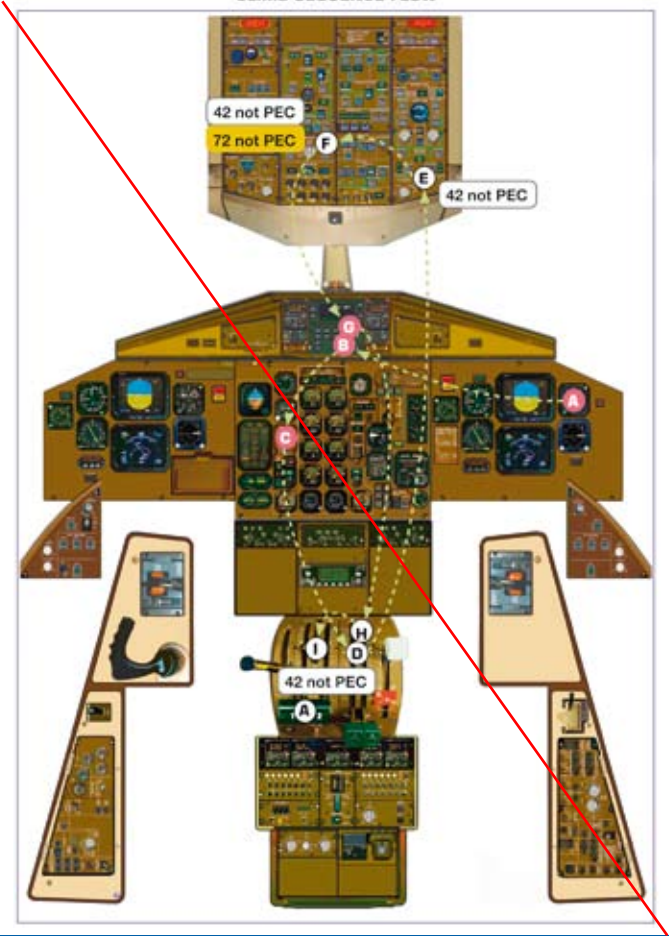
– following a specific order.

A flow is a reminder of the task sequence.

Example:

Climb sequence flow

CLIMB SEQUENCE FLOW



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2.5. Checklist Methodology / Challenge and Reply

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

On the ground	In flight
• C/L is requested by CM1 • C/L is read by CM2	• 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:

Flight events	PNF	PF
APPROACH PROCEDURE COMPLETE	▶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.

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2.6. Task sharing

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

FLIGHT EVENTS	PROCEDURES	CHECKLIST	TRIGGERED BY
Arrival at the aircraft	Flight preparation procedure		CM1 / CM2
CM2 enters the cockpit	Internal inspection procedure		CM2
Internal inspection complete	External inspection procedure		CM1
Internal inspection complete	Preliminary cockpit preparation procedure		CM2
Preliminary cockpit preparation procedure complete		Preliminary cockpit preparation checklist	CM1 / CM2
Preliminary cockpit preparation C/L complete	Final cockpit preparation procedure		CM1
Final cockpit preparation procedure complete		Final cockpit preparation checklist	CM1
Ready to start engine 2 in hotel mode	Before propeller rotation		CM1
Before propeller rotation procedure complete		Before propeller rotation checklist	CM1
Start up clearance receive	Before taxi procedure		CM1
Before taxi procedure complete		Before taxi checklist	CM1
On taxiway	Taxi procedure		CM1
Taxi procedure complete		Taxi checklist	CM1
Approaching holding point and "cabin ok" received	Before take-off procedure		CM1
Before take-off procedure complete		Before take-off checklist	CM1

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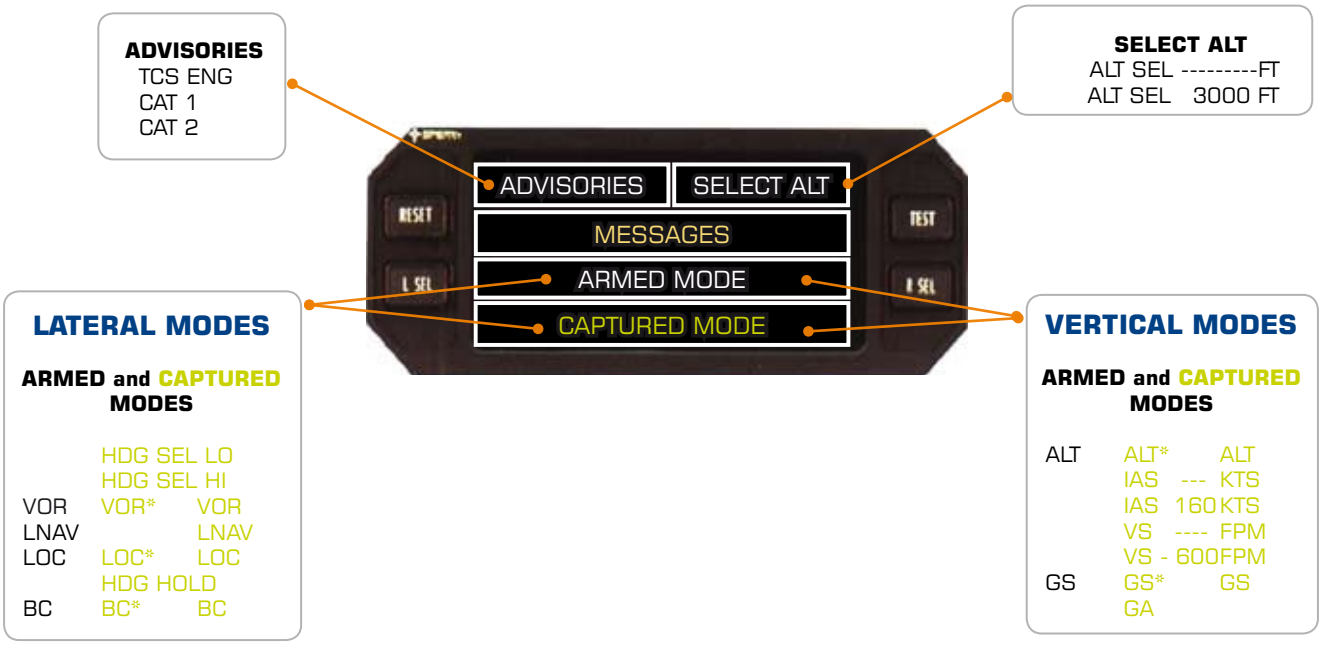
FLIGHT EVENTS	PROCEDURES	CHECKLIST	TRIGGERED BY
Reaching acceleration altitude	Climb sequence		PF
Altimeters setting performed		After take-off checklist	PF
Crossing FL 100	FL 100 procedure	No C/L	PF
Reaching cruise speed	Cruise procedure	No C/L	PF
10 minutes before T.O.D	Before descent procedure		PF
Arrival briefing complete		Descent checklist	PF
Crossing FL 100	FL 100 procedure	No C/L	PF
When cleared to an altitude or passing transition level	Approach procedure		PF
Approach procedure complete		Approach checklist	PF
Clear for approach	Before landing procedure		PF
Landing configuration		Before landing checklist	PF
Runway vacated	After landing procedure		CM1
When engine 1 is stopped		After landing checklist	CM1
Marshaller in sight	Parking procedure		CM1
Parking procedure complete		Parking checklist	CM1
All documentation filled	Leaving the aircraft procedure		CM1
Leaving the aircraft procedure complete		Leaving the aircraft checklist	CM1

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 Announciator).

Flight director modes are displayed on the FMA

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3.1.1. With AP engaged

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

AP ENGAGED
PF acts on AFCS

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)

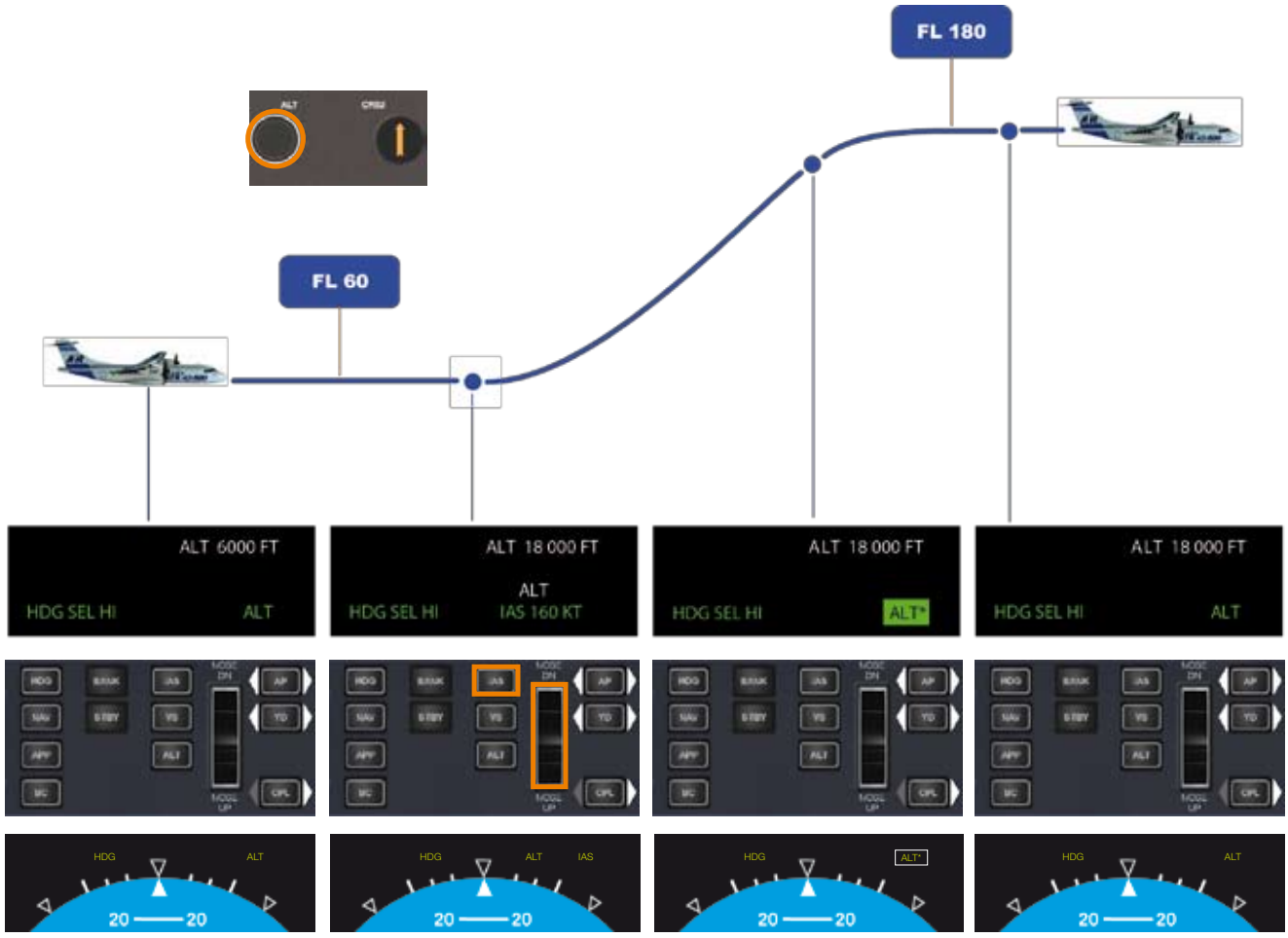
3) Adjust Np and power as needed.

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	PNF	PF
CLEARED TO FL 180	▶ANNOUNCE "CHECK"	▶DO ALT SEL..... 18000 SELECTED IAS ..... 160/170 SELECTED TORQUE / NP ..... CLIMB SETTING ▶ANNOUNCE "FL 180, IAS 160 (/170) SET ALT WHITE*"
ALT STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT STAR"
ALT GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT GREEN"

** 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.

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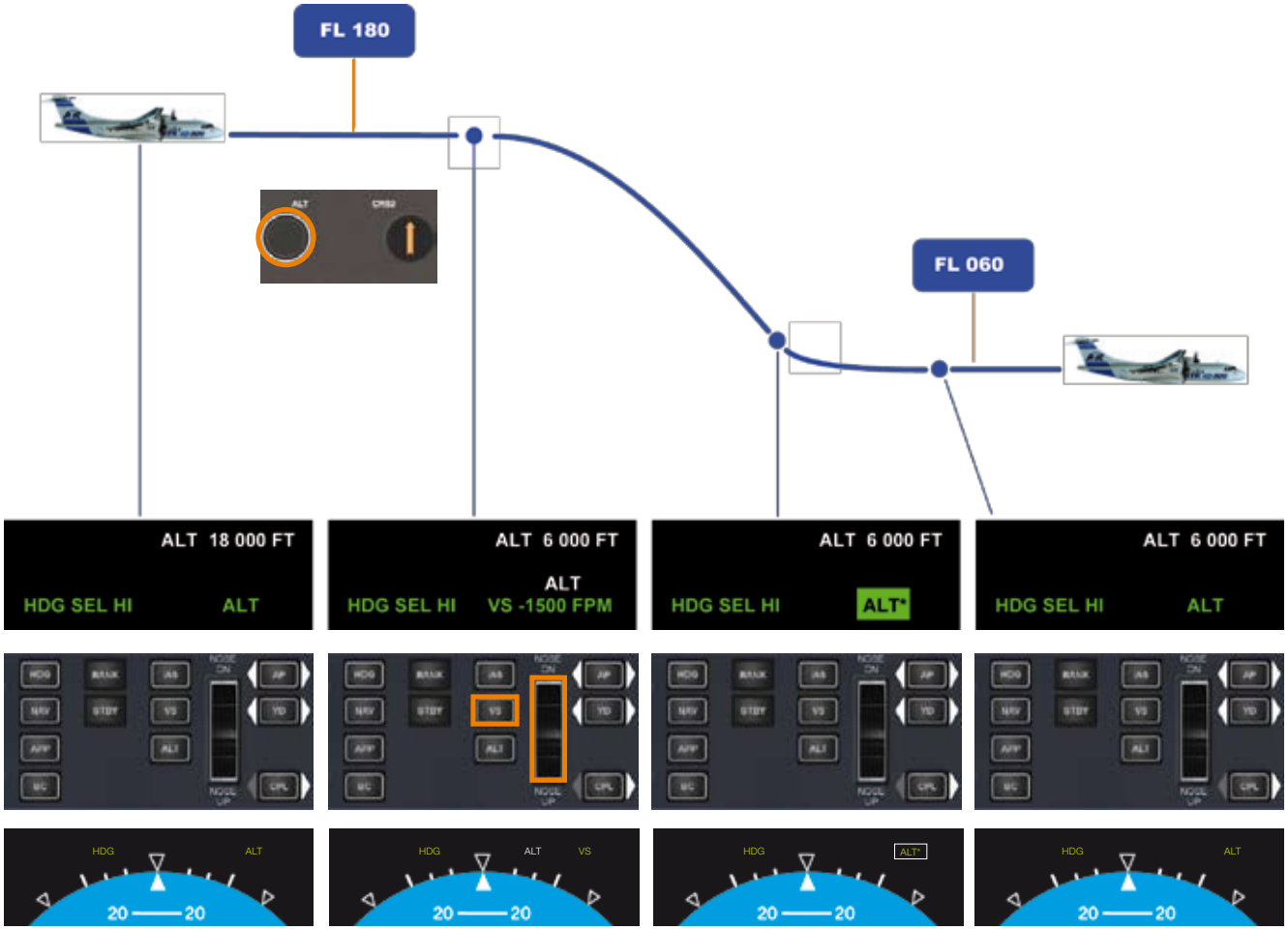
Descent mode (AP ON)



Flight events	PNF	PF
CLEARED TO FL 060	▶ANNOUNCE "CHECK"	▶DO ALT SEL..... 6000 SELECTED VS .....-1500 SELECTED TORQUE / NP ..... TORQUE SETTING ▶ANNOUNCE "FL 60 SET ALT WHITE, VS -1500 SET"
ALT STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT STAR"
ALT GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT GREEN"

NAV mode (AP ON)

Flight events	PNF	PF
CLEARED TO INTERCEPT RADIAL 270	▶ANNOUNCE "CHECK"	▶DO HDG BUG..... SET 045 ▶ANNOUNCE "HDG BUG LEFT 045 SET"
ESTABLISHED ON INTERCEPTION HEADING	▶ANNOUNCE "CHECK"	▶DO NAV MODE ..... SELECTED ▶ANNOUNCE "NAV MODE SET, VOR WHITE"
VOR STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "VOR STAR"
VOR GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "VOR GREEN"

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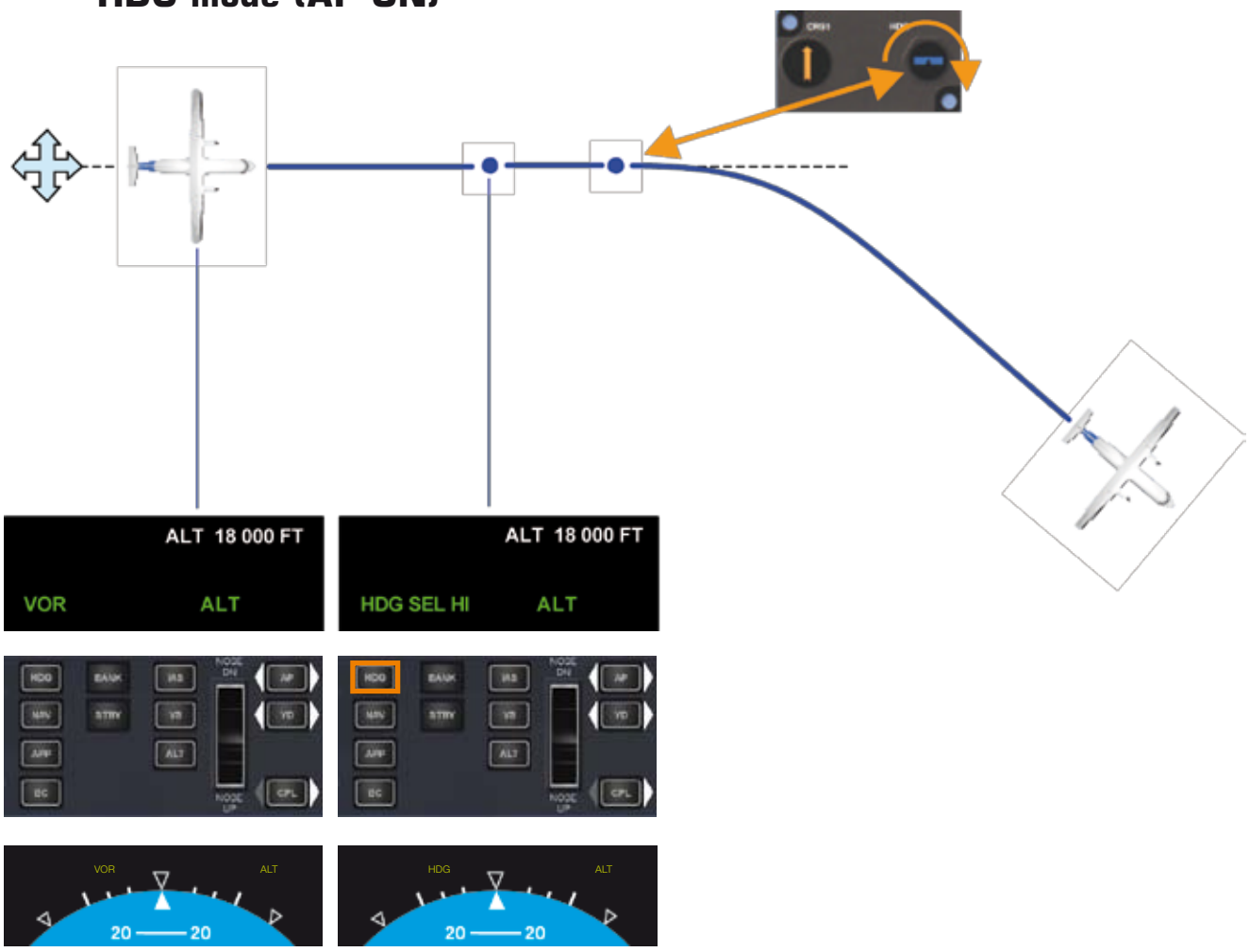
HDG mode (AP ON)



Flight events	PNF	PF
CLEARED TO HEADING 130	▶**ANNOUNCE** **"CHECK"**	▶**DO** HDG MODE..... SELECTED ▶**ANNOUNCE** **"HDG MODE LO (or HI) BANK SET"*** **HI or LO according to flight conditions.*
HEADING SELECTION	▶**ANNOUNCE** **"CHECK"**	▶**DO** HDG BUG..... 130 SELECTED ▶**ANNOUNCE** **"HDG BUG RIGHT 130 SET"**

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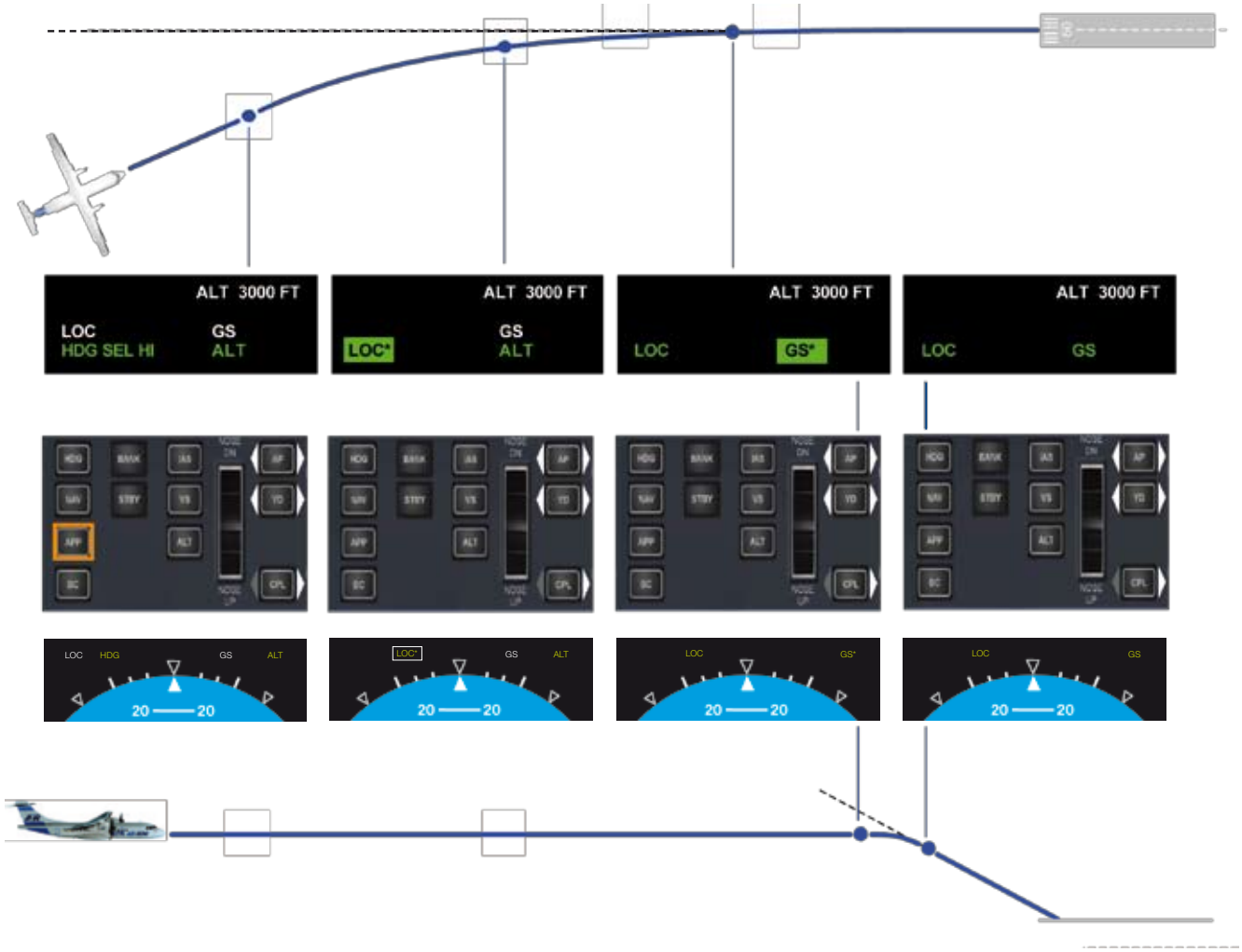
APP mode (AP ON)



Flight events	PNF	PF
CLEARED TO PERFORM AN ILS APPROACH	▶ANNOUNCE "CHECK"	▶DO APP MODE..... SELECTED ▶ANNOUNCE "LOC AND GS WHITE"
LOCALISER STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "LOC STAR"
LOCALISER GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "LOC GREEN"
GLIDE SLOPE STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "GS STAR"
GLIDE SLOPE GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "GS GREEN"

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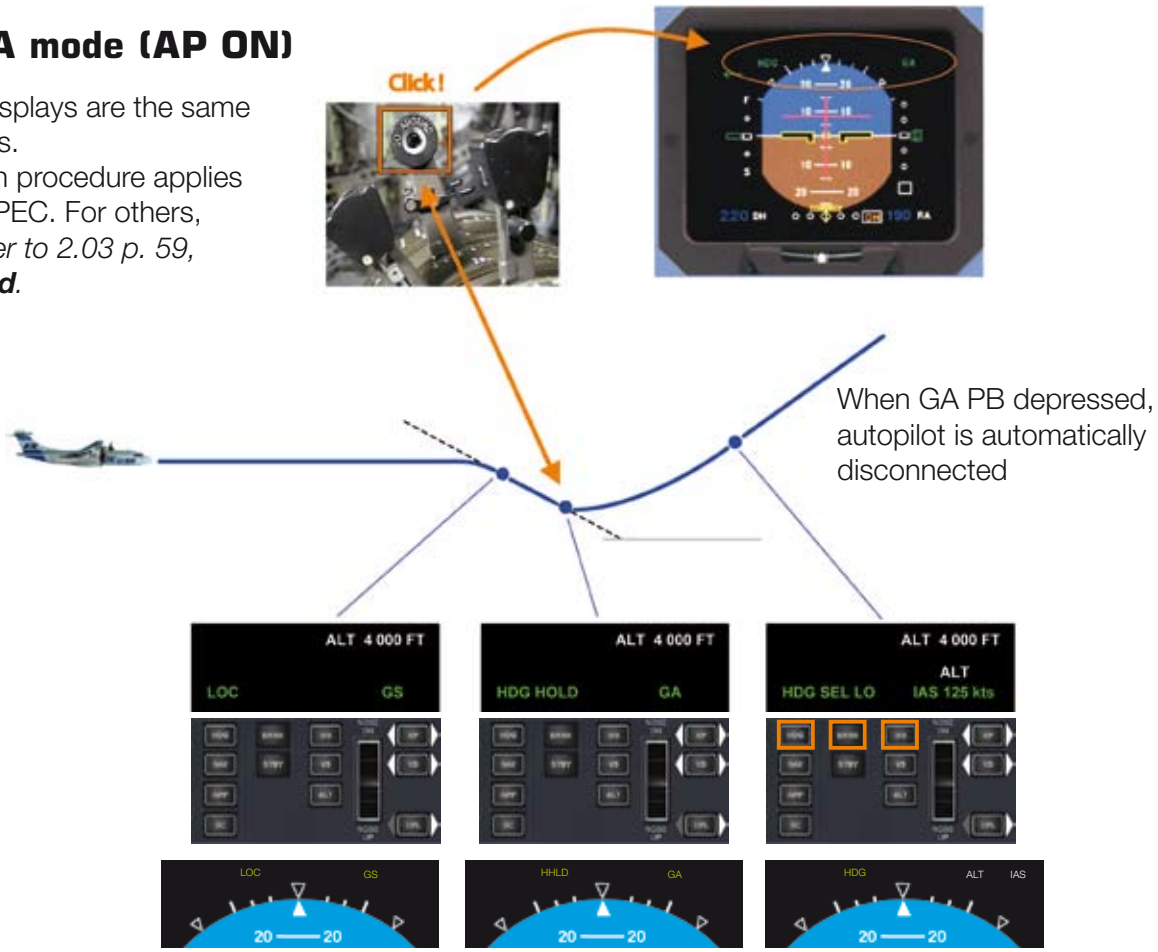
GA mode (AP ON)

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**.*



Flight events	PNF	PF
FULLY ESTABLISHED	▶ANNOUNCE "CHECK"	▶ANNOUNCE "LOC GREEN, ... GS GREEN"
AT DA OR MDA WHEN FLAPS AT 15 ON THE FLAPS INDICATOR	▶DO TQs .....CHECK/ADJUST GA FLAPS 15.....SELECTED ▶ANNOUNCE "FLAPS 15, POWER SET"	▶ORDER "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
WHEN POSITIVE CLIMB ON THE VSI	▶ANNOUNCE "POSITIVE RATE" ▶DO GEAR LEVER..... UP HDG MODE.....SELECTED LO BANK.....SELECTED IAS..... VGA SELECTED TAXI & T/O LIGHT.....OFF ▶ANNOUNCE "IAS XXX SET"	▶ORDER "GEAR UP, SET HEADING, LOW BANK, IAS VGA" ▶ANNOUNCE "CHECK"
WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL	▶ANNOUNCE "GEAR UP"	

42 not PEC

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

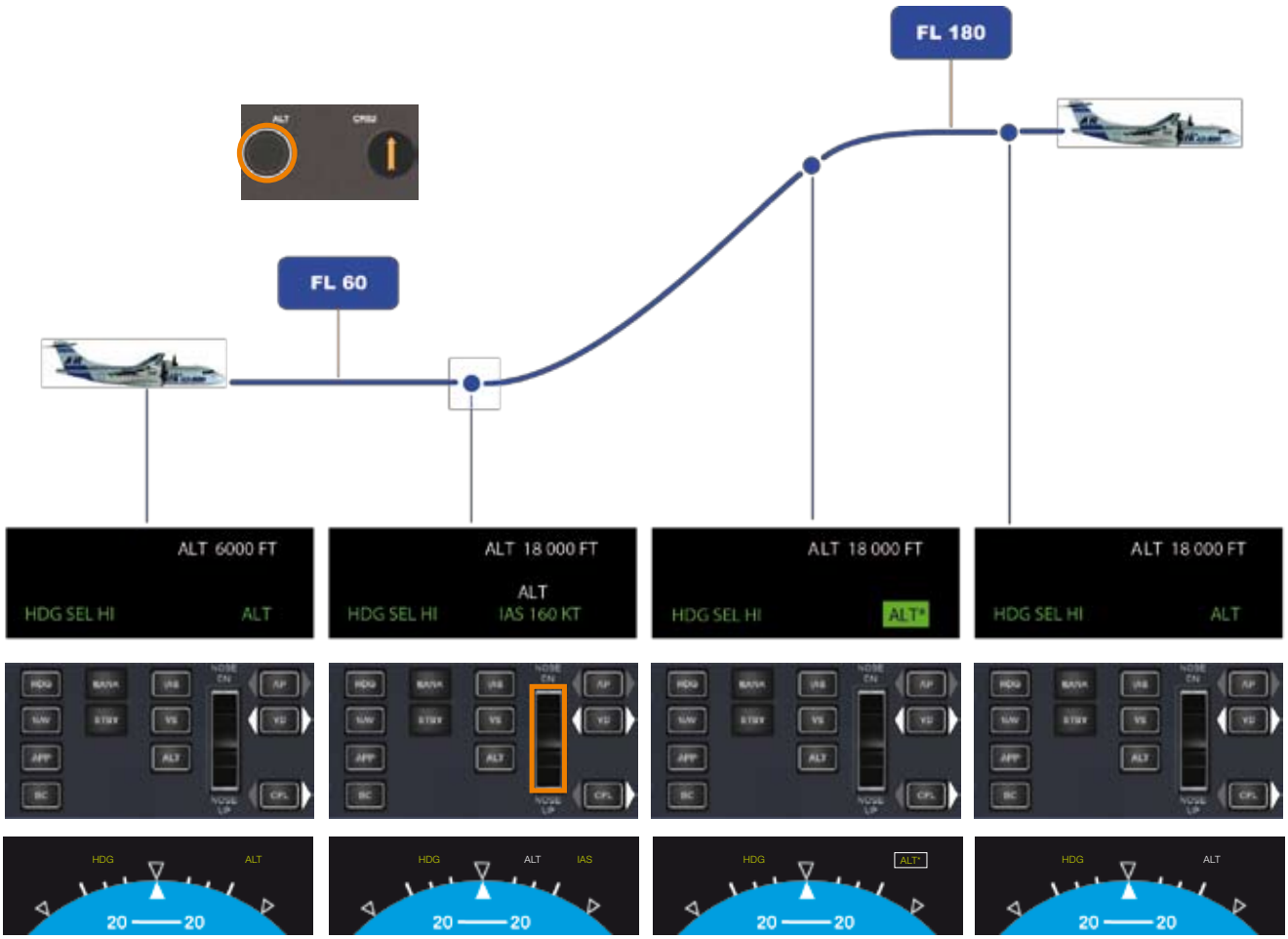
AP DISENGAGED
PNF acts on AFCS on PF request

• 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**

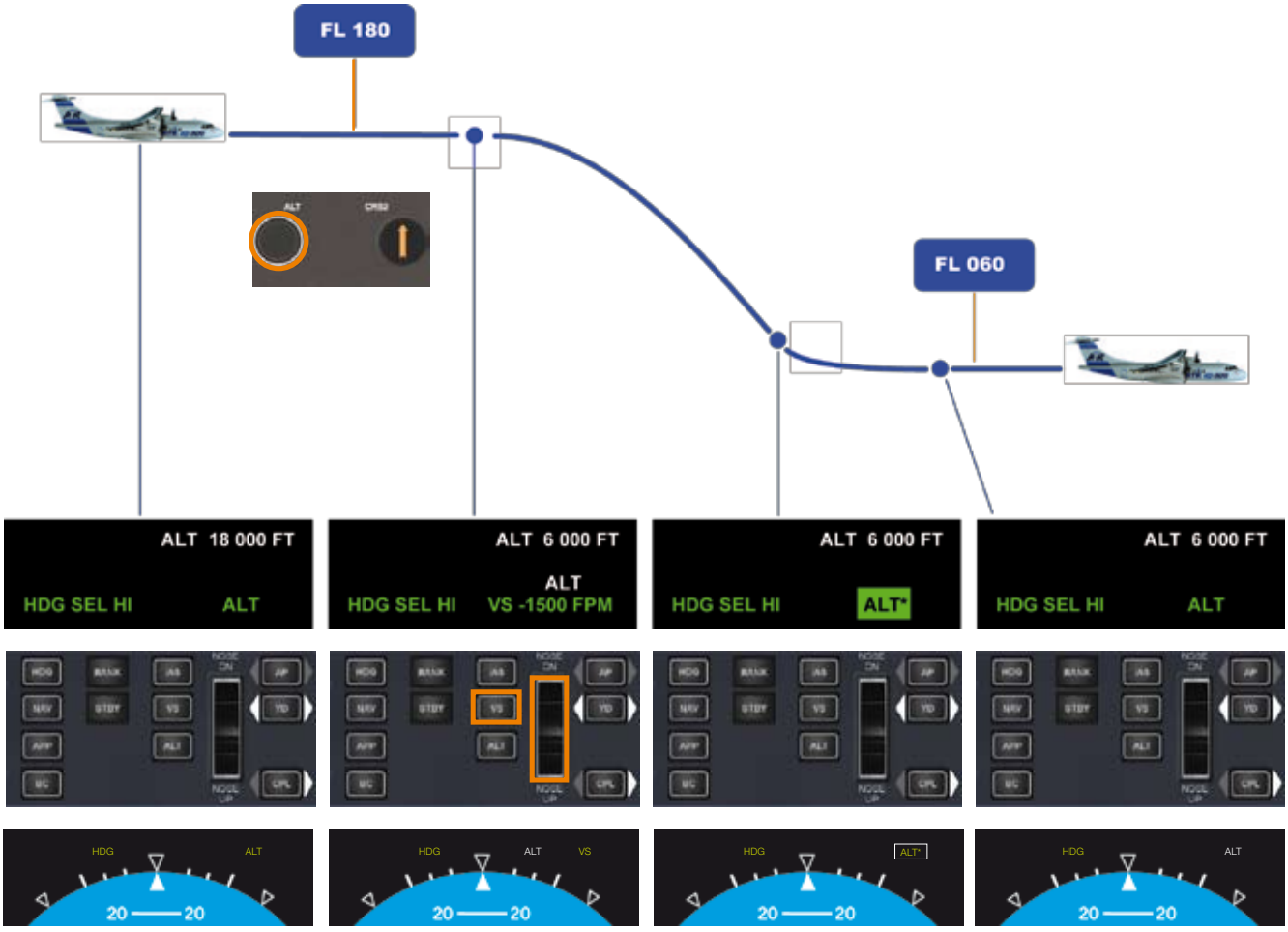
Climb mode (AP OFF)



Flight events	PNF	PF
CLEARED TO FL 180	▶DO ALT SEL..... FL 180 SELECTED IAS..... 160 / 170 SELECTED ▶ANNOUNCE "FL 180, IAS 160/170 SET, ALT WHITE"	▶ORDER "SET FL 180, IAS 160" ▶ANNOUNCE "CHECK" *CHECK OR ADJUST PWR LEVER TO AMBER TQ BUGS*
ALT STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT STAR"
ALT GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT GREEN"

ALL ATR

Descent mode (AP OFF)



Flight events	PNF	PF
CLEARED TO FL 60	▶DO ALT SEL..... FL 060 SELECTED VS.....–1500 SELECTED ▶ANNOUNCE "FL 60, VS - 1500 SET, ALT WHITE"	▶ORDER "SET FL 60, VS - 1500" ▶ANNOUNCE "CHECK"
ALT STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT STAR"
ALT GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "ALT GREEN"

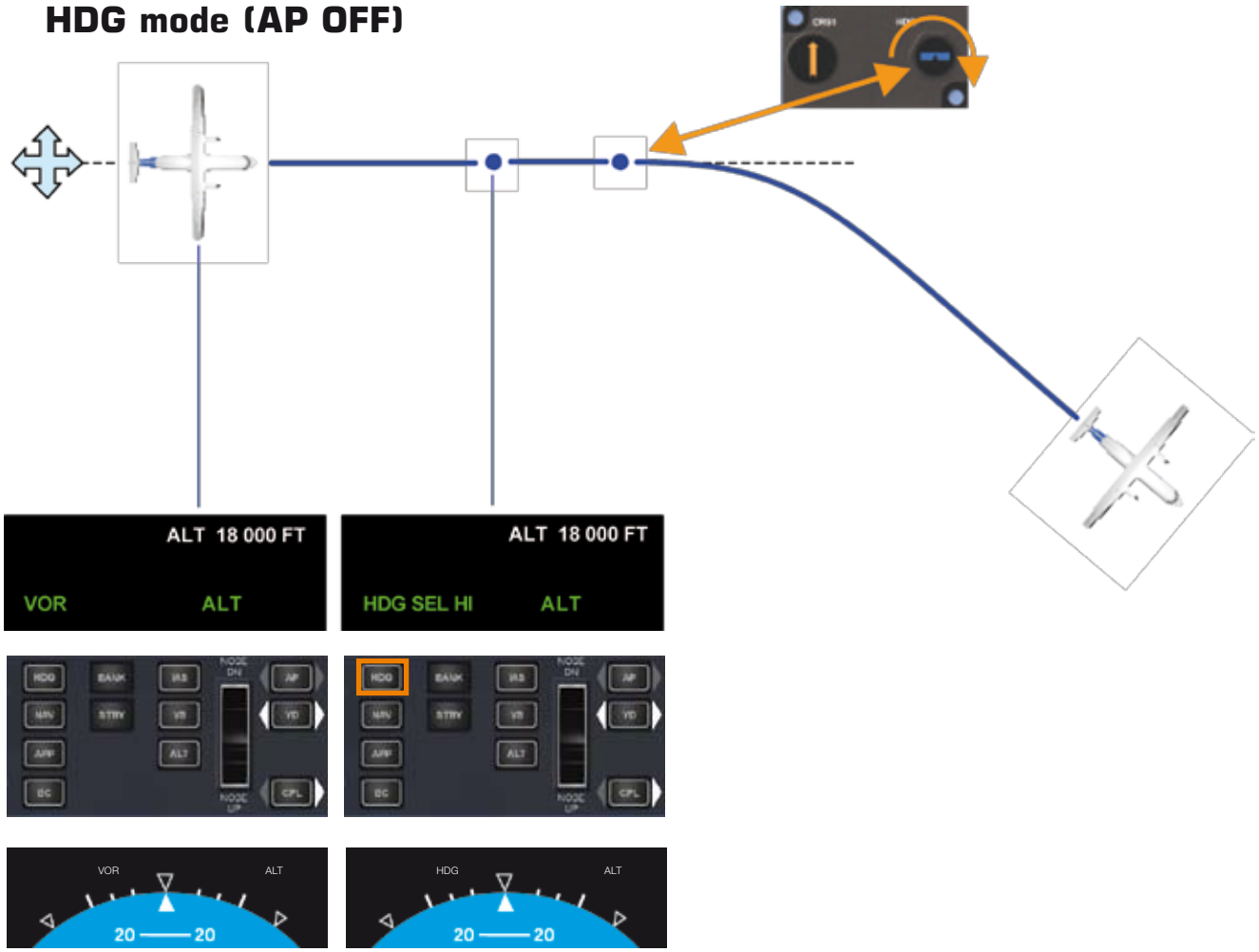
ALL ATR

NAV mode (AP OFF)

Flight events	PNF	PF
CLEARED TO INTERCEPT RADIAL 270	▶DO HDG BUG..... 045 ▶ANNOUNCE "HEADING BUG 045 SET"	▶ORDER "SET HEADING BUG LEFT 045" ▶ANNOUNCE "CHECK"
ESTABLISHED ON INTERCEPTION HEADING	▶DO NAV MODE .....SELECTED ▶ANNOUNCE "NAV MODE SET, VOR WHITE"	▶ORDER "SET NAV MODE" ▶ANNOUNCE "CHECK"
VOR STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "VOR STAR"
VOR GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "VOR GREEN"

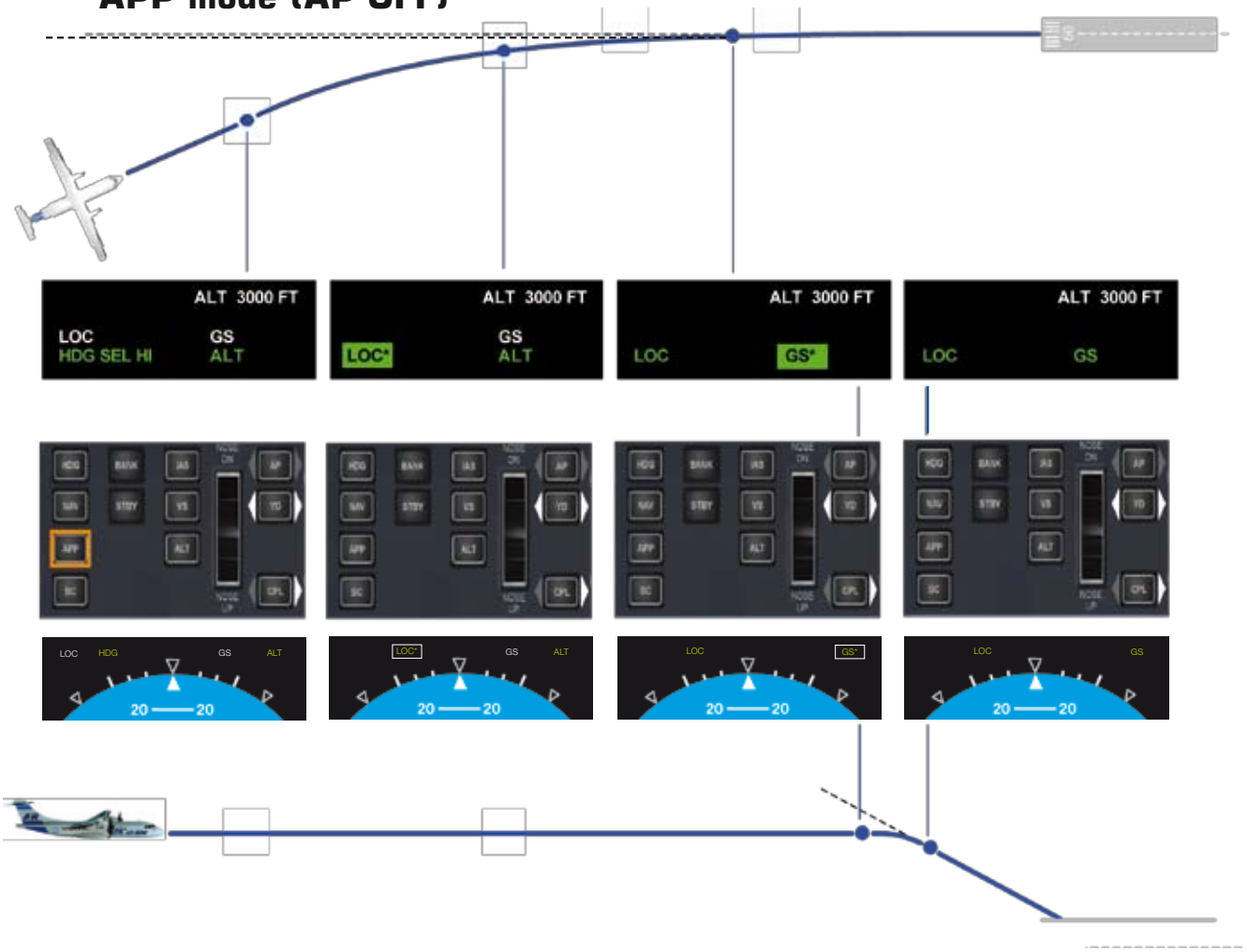
ALL ATR

HDG mode (AP OFF)



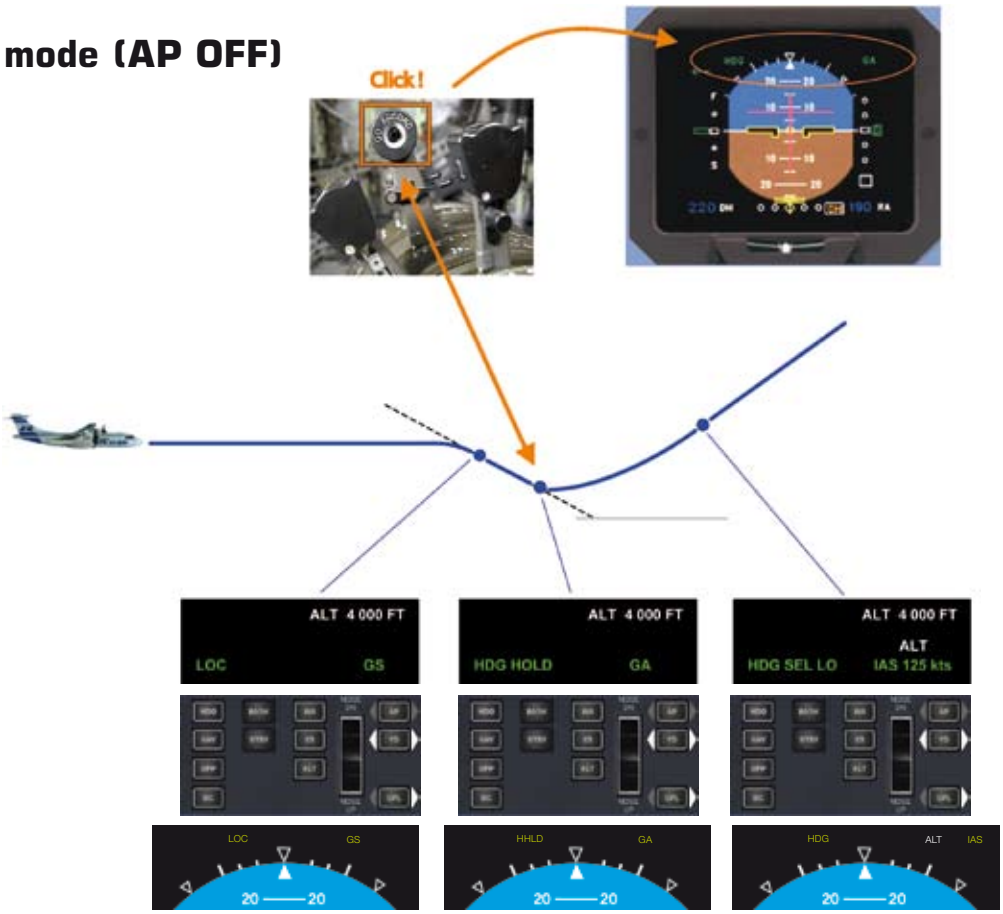
Flight events	PNF	PF
CLEARED TO HEADING 130	▶DO HDG MODE.....SELECTED ▶ANNOUNCE "HEADING LOW (or HI) BANK SET"* *HI or LO according to flight conditions.*	▶ORDER "SET HEADING MODE" ▶ANNOUNCE "CHECK"
	▶DO HDG MODE..... 130 SELECTED ▶ANNOUNCE "HEADING BUG 130 SET"	▶ORDER "SET HEADING BUG RIGHT 130" ▶ANNOUNCE "CHECK"

APP mode (AP OFF)



Flight events	PNF	PF
CLEARED TO PERFORM AN ILS APPROACH	▶DO APP MODE.....SELECTED ▶ANNOUNCE "APPROACH MODE SET, LOC AND GS WHITE"	▶ORDER "SET APPROACH MODE" ▶ANNOUNCE "CHECK"
LOC STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "LOC STAR"
LOC GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "LOC GREEN"
GS STAR	▶ANNOUNCE "CHECK"	▶ANNOUNCE "GS STAR"
GS GREEN	▶ANNOUNCE "CHECK"	▶ANNOUNCE "GS GREEN"

GA mode (AP OFF)



Flight events	PNF	PF
FULLY ESTABLISHED	▶ANNOUNCE "CHECK"	▶ANNOUNCE "LOC GREEN, ... GS GREEN"
AT DA OR MDA WHEN FLAPS AT XX ON THE FLAPS INDICATOR	▶DO TQs ..... CHECK/ADJUST GA FLAPS 15 ..... SELECTED ▶ANNOUNCE "FLAPS XX, POWER SET" *Note: ATR 42-500 SEE 02.02.03 page 96*	▶ORDER "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
WHEN POSITIVE CLIMB ON THE VSI	▶ANNOUNCE "POSITIVE RATE" ▶DO GEAR LEVER ..... UP HDG MODE ..... SELECTED LOW BANK ..... SELECTED IAS ..... VGA SELECTED TAXI & T/O LIGHT ..... OFF ▶ANNOUNCE "IAS XXX SET"	▶ORDER "GEAR UP, HEADING, LOW BANK, IAS VGA" ▶ANNOUNCE "CHECK"
WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL	▶ANNOUNCE "GEAR UP"	▶ANNOUNCE "CHECK"

ALL ATR

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 manoeuvers 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:

Flight events	PNF	PF
FLAPS EXTENSION	▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS LEVER.....SELECTED	▶ORDER "FLAPS XX"
FLAPS AT XX ON THE FLAPS INDICATOR	▶ANNOUNCE "FLAPS XX"	▶ANNOUNCE "CHECK"

Note: Select new speed only when the new configuration is obtained, during deceleration.

ALL ATR

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 manoeuvers 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:

Flight events	PNF	PF
LANDING GEAR EXTENSION	▶ANNOUNCE "SPEED CHECK" ▶DO LANDING GEAR LEVER.....DOWN PWR MGT.....TAKE-OFF TAXI & T/O LIGHTS .....ON	▶ORDER "GEAR DOWN"
3 GREEN LIGHTS ON THE LANDING GEAR INDICATOR	▶ANNOUNCE "GEAR DOWN"	▶ANNOUNCE "CHECK"

ALL ATR

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

Flight events	PNF	PF
QNH SETTING	▶DO QNH 1015 ..... SET ▶ANNOUNCE "1015 SET"	▶ORDER "SET QNH" ▶DO QNH 1015 ..... SET
DESIRED ALTITUDE	▶CHECK "CHECK" *If difference less than 50 feet* *or* " ± XX FT" *If difference more than 50 feet*	▶ANNOUNCE "XXXX FT, NOW"

* 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.

FLIGHT PHASE	ALTIMETERS		
	CAPTAIN	STANDBY	FIRST OFFICER
From ground till cleared to FL	QNH (departure airport)	QNH (departure airport)	QNH (departure airport)
From climb to FL till cleared down to altitude	STANDARD	QNH Regional	STANDARD
Cleared to altitude	QNH (arrival airport)	QNH (arrival airport)	QNH (arrival airport)

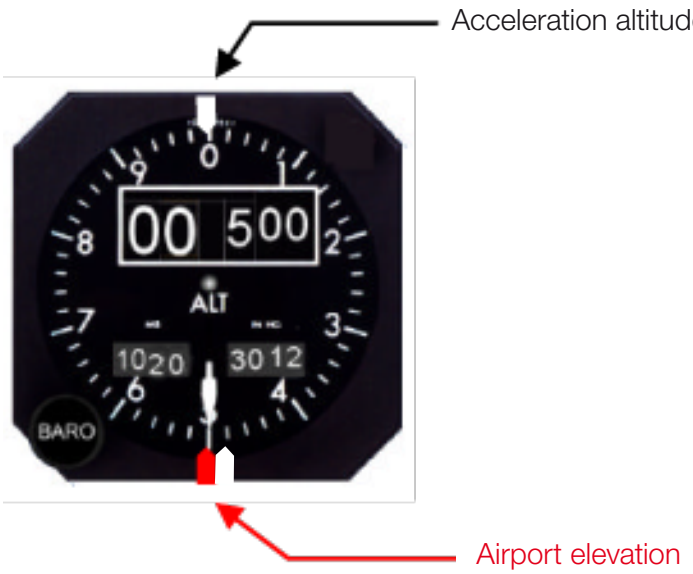
ALL ATR

Altimeter bugs (if installed)

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

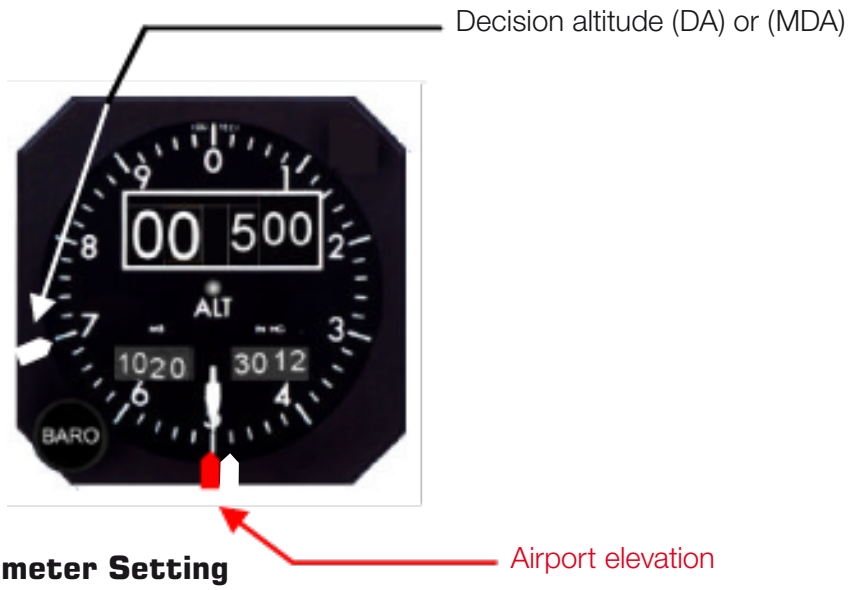
Take-off

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.

Flight events	PNF	PF
LANDING DATA CARD PROCEEDING	▶DO YELLOW BUG .....SELECTED ▶ANNOUNCE "103 SET" ▶DO WHITE BUG .....SELECTED ▶ANNOUNCE "131 SET" ▶DO RED BUG.....SELECTED ▶ANNOUNCE "145 SET"	▶ANNOUNCE "VGA 103" ▶DO YELLOW BUG .....SELECTED ▶ANNOUNCE "WHITE BUG 131" ▶DO WHITE BUG .....SELECTED ▶ANNOUNCE "RED BUG 145" ▶DO RED BUG.....SELECTED

Speed bug

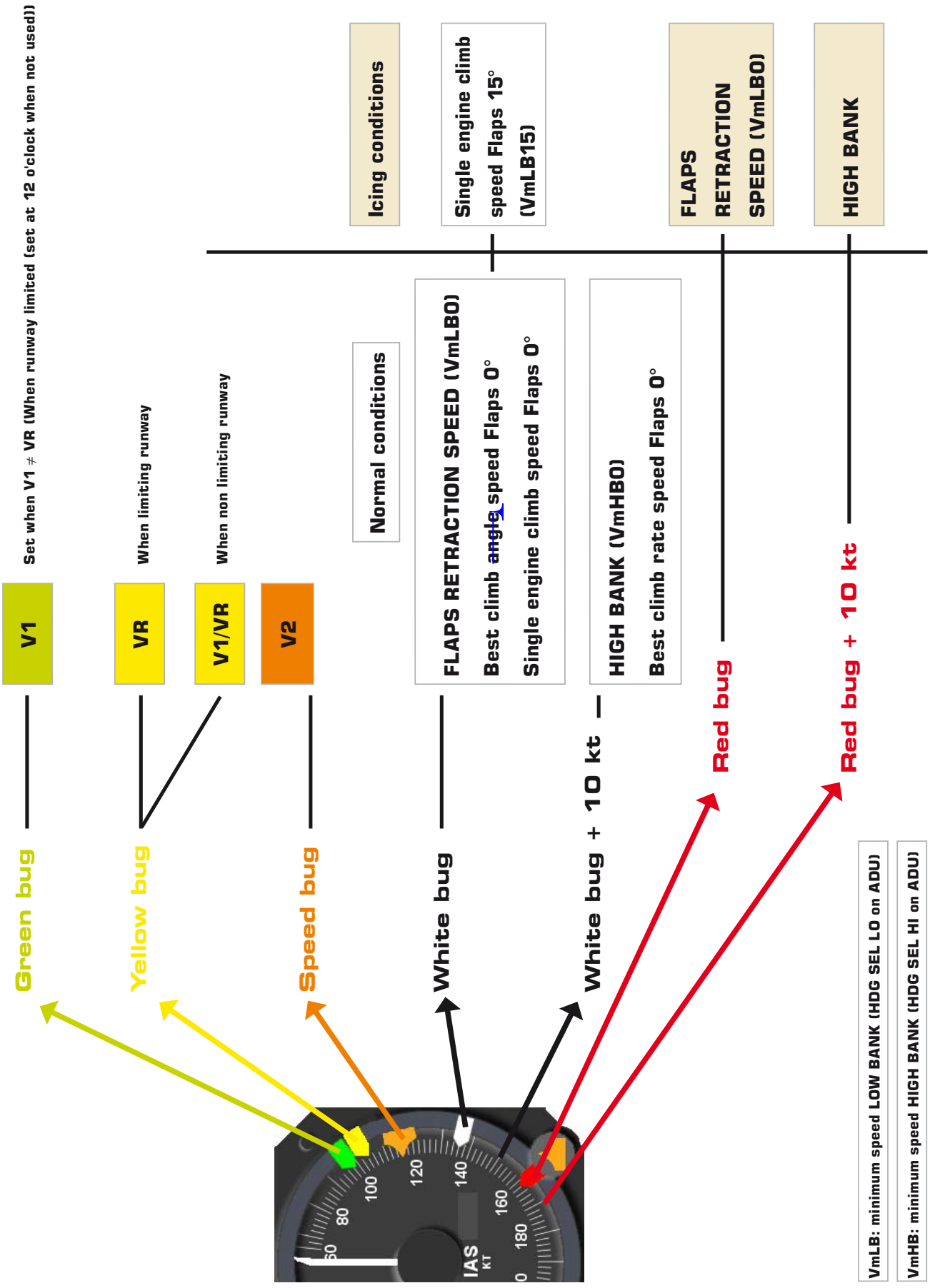
When aircraft configuration is obtained, PF orders new speed bug setting according to flight phase, on both sides. Speed bug manages Fast / Slow speed scale and must be considered also as a cross-check tool.

Example:

Flight events	PNF	PF
ACCELERATING TO 160 KT	▶DO SPEED BUG.....SELECTED ▶ANNOUNCE "SET"	▶ANNOUNCE "SPEED BUG 160" ▶DO SPEED BUG..... SELECTED

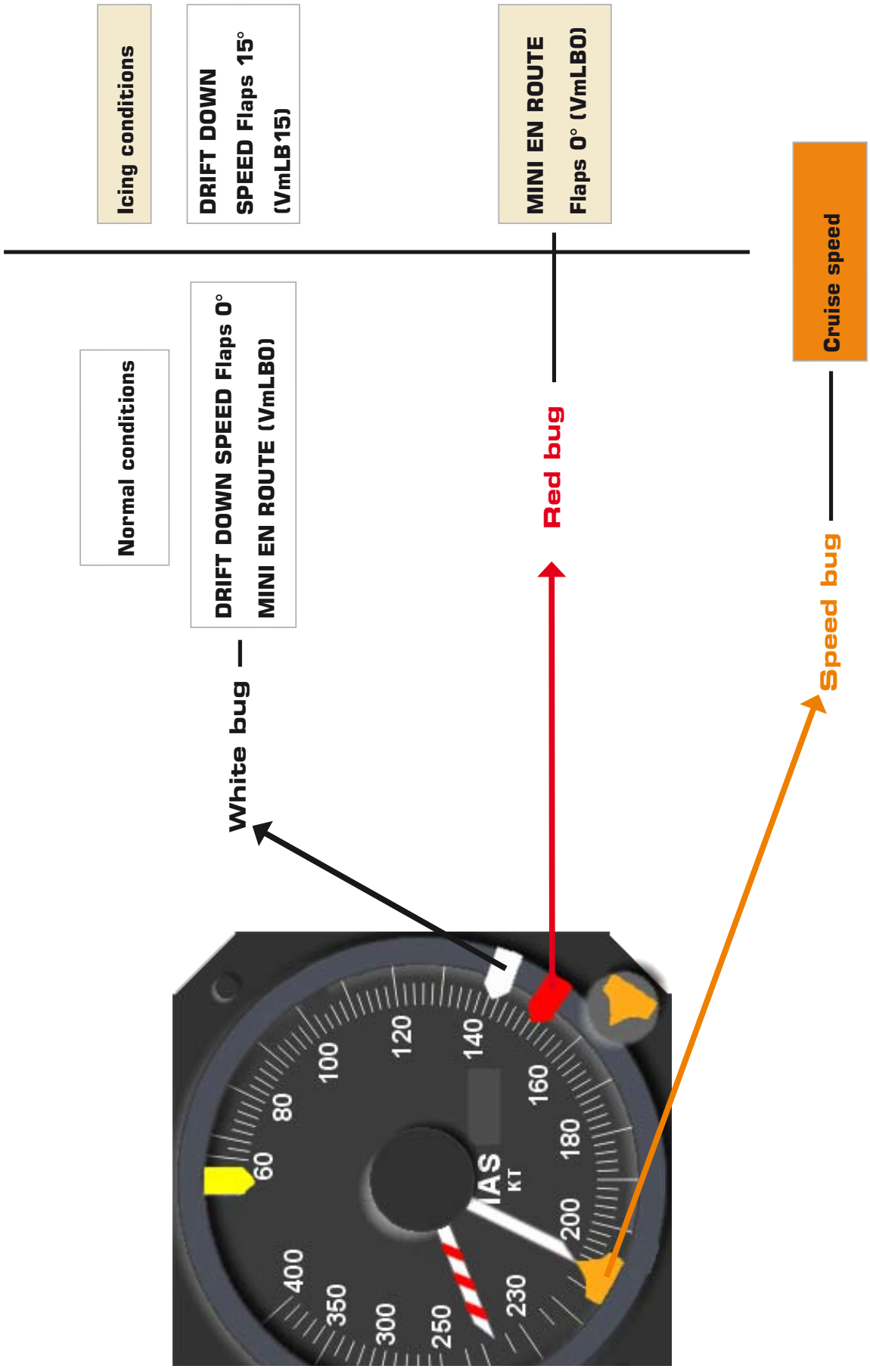
ALL ATR

3.5.1. Take-off bugs

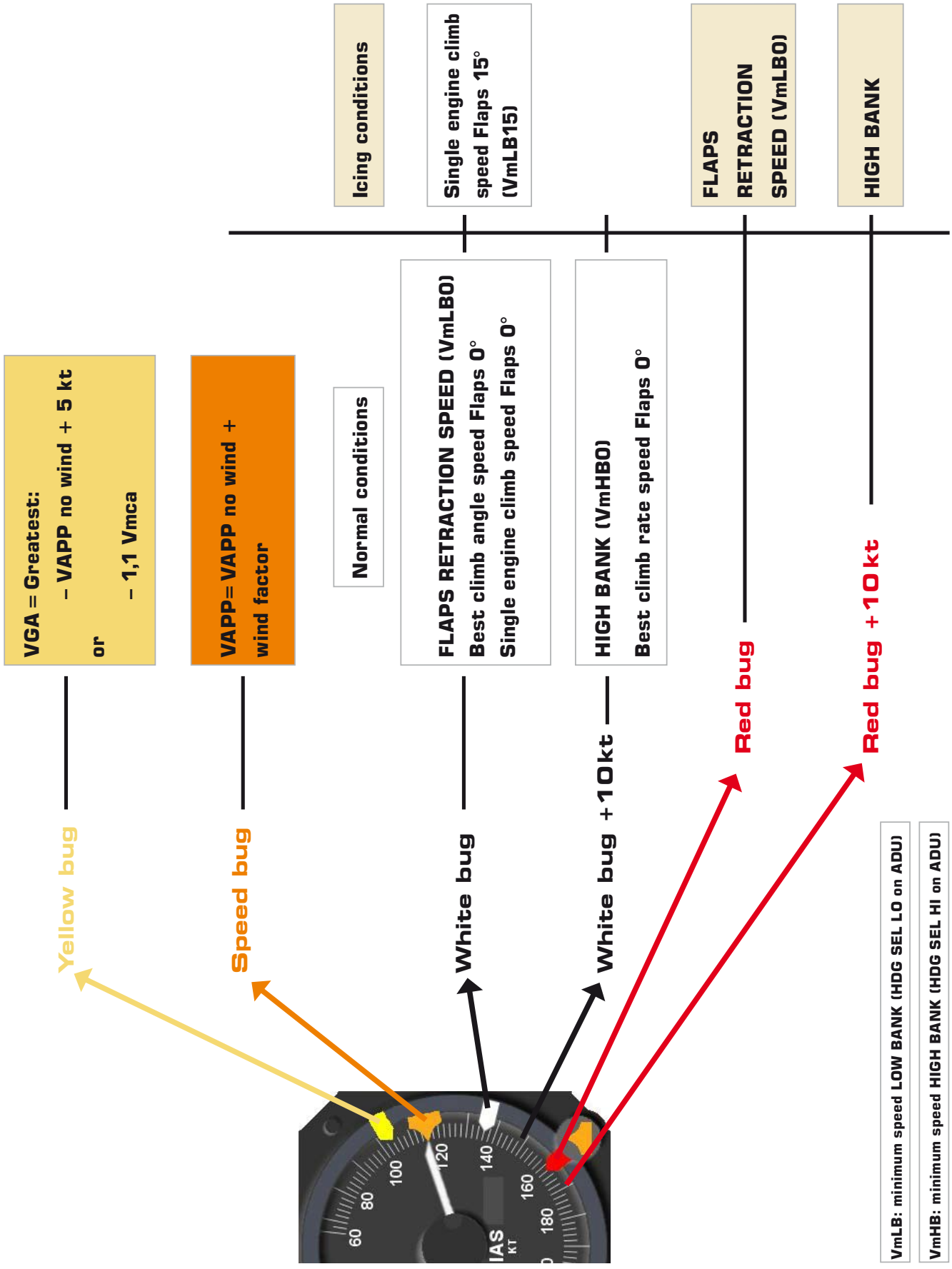


ALL ATR

3.5.2. Cruise bugs



3.5.3. Approach bugs



ALL ATR

3.5.4. Best angle and best rate speed

	2 ENGINES	1 ENGINE
NORMAL CONDITIONS	BEST ANGLE: WHITE BUG BEST RATE: WHITE BUG +10 FLAPS 0° 0°	WHITE BUG
ICING CONDITIONS	RED BUG FLAPS 0° 15°	WHITE BUG

3.6. Torque bugs

3.6.1. Take-off bugs

Example: Airport pressure altitude is 1000 ft and OAT is 10°C.

TAKE OFF TORQUE — VC = 50. KT

SAT (°C) / AIR COND. OFF	PROPELLER SPEED 100 % — PRESSURE ALTITUDE (FT)								
	-1000.	0.	1000.	2000.	3000.	4000.	5000.	6000.	7000.
-40.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
-10.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
-8.	92.0	92.0	92.0	91.5	91.0	9.05	90.0	90.0	90.0
-6.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
-4.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
-2.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
0.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
2.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	90.0
4.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	89.4
6.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	88.0
8.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	90.0	86.7
10.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	89.3	85.4
12.	92.0	92.0	92.0	91.5	91.0	90.5	90.0	87.5	83.7
14.	92.0	92.0	92.0	91.5	91.0	90.5	89.5	85.7	81.9
16.	92.0	92.0	92.0	91.5	91.0	90.5	87.6	83.9	80.2

RESERVE TAKE OFF TORQUE — VC = 50. KT

SAT (°C) / AIR COND. OFF	PROPELLER SPEED 100 % — PRESSURE ALTITUDE (FT)								
	-1000.	0.	1000.	2000.	3000.	4000.	5000.	6000.	7000.
-40.	100	100	100	100	100	100	100	100	100
-10.	100	100	100	100	100	100	100	100	100
-8.	100	100	100	100	100	100	100	100	100
-6.	100	100	100	100	100	100	100	100	100
-4.	100	100	100	100	100	100	100	100	100
-2.	100	100	100	100	100	100	100	100	100
0.	100	100	100	100	100	100	100	100	100
2.	100	100	100	100	100	100	100	100	100
4.	100	100	100	100	100	100	100	100	99.5
6.	100	100	100	100	100	100	100	100	97.8
8.	100	100	100	100	100	100	100	100	96.3
10.	100	100	100	100	100	100	100	99.2	94.9
12.	100	100	100	100	100	100	100	97.2	93.0
14.	100	100	100	100	100	100	99.5	95.2	91.0
16.	100	100	100	100	100	100	97.4	93.2	89.1

3.6.2. Cruise bugs

Cruise torque bug, automatically computed by the FDAU.

The FDAU torque is checked in the cruise performance chart.

MAX CRUISE 2 ENGINES

FLIGHT LEVEL	Δ ISA													
	–10		–5		0		+5		+10		+15		+20	
80	90.0 343 **235** 259	*90.0* *317* ***225*** *248*	90.0 343 **234** 260	*90.0* *317* ***224*** *249*	90.0 343 **233** 261	*90.0* *318* ***223*** *250*	84.8 328 **227** 257	*90.0* *318* ***222*** *252*	79.5 3[illegible]3 **220** 2[illegible]2	*88.7* *314* ***220*** *251*	74.4 298 **213** 246	*83.0* *299* ***213*** *245*	69.4 283 **206** 240	*77.5* *283* ***206*** *239*
100	90.0 336 **233** 264	*90.0* *312* ***223*** *253*	90.0 337 **231** 265	*90.0* *312* ***222*** *254*	87.3 329 **228** 263	*90.0* *313* ***221*** *256*	82.0 314 **221** 258	*90.0* *313* ***220*** *257*	77.1 3[illegible]0 **215** 2[illegible]3	*86.0* *302* ***215*** *253*	72.2 286 **208** 248	*80.5* *287* ***208*** *247*	67.5 272 **201** 242	*75.3* *273* ***201*** *241*
120	90.0 330 **230** 269	*90.0* *307* ***221*** *259*	89.5 329 **229** 270	*90.0* *307* ***220*** *260*	84.5 315 **222** 265	*90.0* *308* ***219*** *261*	79.2 300 **216** 260	*88.3* *304* ***216*** *260*	74.4 2[illegible]7 **209** 2[illegible]4	*83.0* *289* ***209*** *255*	69.9 273 **203** 249	*77.9* *275* ***202*** *248*	65.5 261 **196** 243	*73.0* *262* ***195*** *242*
140	90.0 325 **228** 274	*90.0* *302* ***218*** *263*	85.9 313 **222** 271	*90.0* *303* ***217*** *264*	81.2 300 **216** 266	*90.0* *303* ***216*** *266*	76.5 287 **210** 261	*85.3* *291* ***210*** *261*	71.6 2[illegible]3 **203** 2[illegible]5	*79.9* *276* ***204*** *255*	67.4 261 **197** 250	*75.1* *263* ***197*** *249*	63.2 249 **191** 243	*70.5* *250* ***190*** *242*
160	86.8 311 **222** 276	*90.0* *298* ***216*** *268*	82.1 297 **216** 271	*90.0* *299* ***214*** *269*	77.4 284 **210** 266	*86.3* *289* ***210*** *266*	73.0 272 **203** 261	*81.3* *276* ***204*** *261*	68.5 2[illegible]9 **197** 2[illegible]5	*76.4* *262* ***197*** *255*	64.0 246 **190** 248	*71.3* *248* ***189*** *247*	60.1 235 **183** 242	*66.9* *236* ***182*** *240*
180	[illegible] 290 **214** 274	[illegible] *295* ***213*** *273*	[illegible] 278 **208** 270	[illegible] *284* ***208*** *269*	[illegible] 266 **202** 265	[illegible] *271* ***202*** *264*	[illegible] 255 **196** 259	[illegible] *259* ***196*** *259*	65.1 2[illegible]5 **190** 254	*72.6* *248* ***189*** *253*	61.1 233 **183** 247	*68.1* *235* ***181*** *245*	57.2 222 **175** 239	*63.7* *223* ***174*** *238*
200	76.8 273 **206** 272	*85.5* *279* ***206*** *272*	73.0 262 **200** 268	*81.3* *267* ***200*** *268*	69.1 250 **195** 263	*77.0* *255* ***194*** *263*	65.3 240 **188** 258	*72.8* *244* ***188*** *257*	61.6 230 **182** 251	*68.6* *233* ***181*** *250*	58.1 220 **175** 244	*64.7* *222* ***174*** *243*	54.5 210 **167** 236	*60.7* *211* ***166*** *234*
220	72.0 256 **197** 270	*80.3* *262* ***197*** *270*	68.5 245 **191** 265	*76.3* *250* ***191*** *265*	65.0 235 **186** 260	*72.4* *240* ***185*** *259*	61.5 225 **179** 254	*68.4* *229* ***179*** *253*	58.1 216 **173** 247	*64.6* *219* ***171*** *245*	54.7 206 **165** 239	*60.9* *209* ***164*** *237*	51.5 197 **157** 230	*57.3* *199* ***156*** *228*
240	65.9 235 **186** 263	*73.4* *240* ***186*** *263*	63.9 229 **182** 260	*71.2* *234* ***182*** *260*	60.6 219 **176** 255	*67.5* *224* ***175*** *254*	57.5 210 **169** 248	*63.9* *214* ***168*** *246*	54.3 201 **162** 240	*60.3* *204* ***160*** *237*	51.2 192 **154** 231	*56.8* *194* ***152*** *227*	48.0 183 **143** 216	*53.2* *185* ***139*** *211*
250	62.9 224 **180** 259	*70.0* *229* ***180*** *259*	61.1 219 **176** 256	*68.0* *224* ***176*** *256*	58.4 211 **170** 251	*65.0* *216* ***169*** *250*	55.3 202 **163** 243	*61.5* *206* ***162*** *241*	52.3 193 **156** 235	*58.1* *196* ***154*** *232*	49.2 184 **146** 223	*54.5* *186* ***142*** *217*		

TQ % NP = 86 %
KG/H/ENG
IAS
TAS

TQ % NP = 77 %
KG/H/ENG
IAS
TAS

NP 77 %
NOT MECH. LIMITED

ALL ATR

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.

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

• 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).

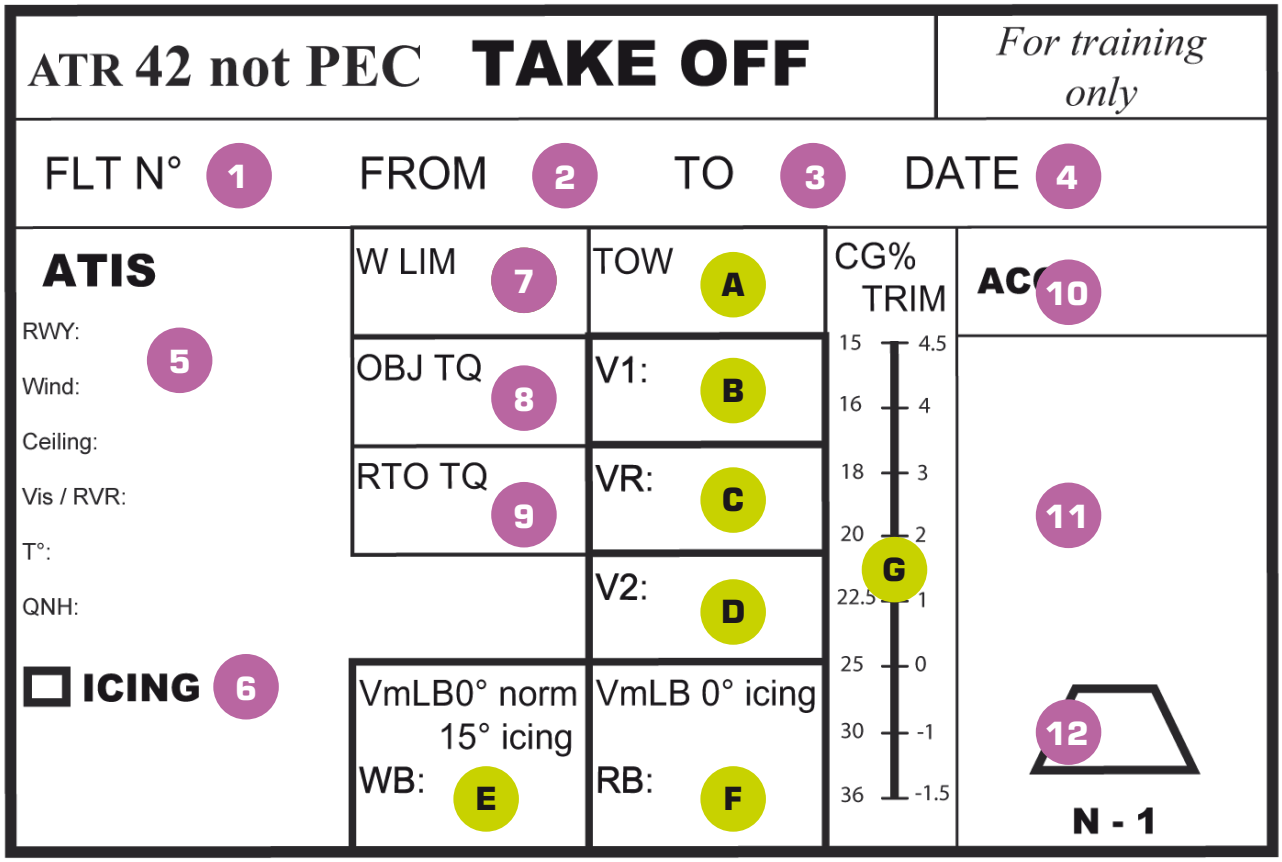
3.7. Data card

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...)



1 **FLT N°**
Write the flight number.

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

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

4 **DATE**
Write the present date.

5 **ATIS**
Write the ATIS data.

6 **ICING**
Tick the box when icing conditions prevail at take-off.

7 **W LIM**
Write the lowest limitation value.

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

9 **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.

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

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

12 **HDG**
Write runway in use for take-off.

After load and trim sheet proceeding:

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

B **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.

C **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.

D **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.

E **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°)

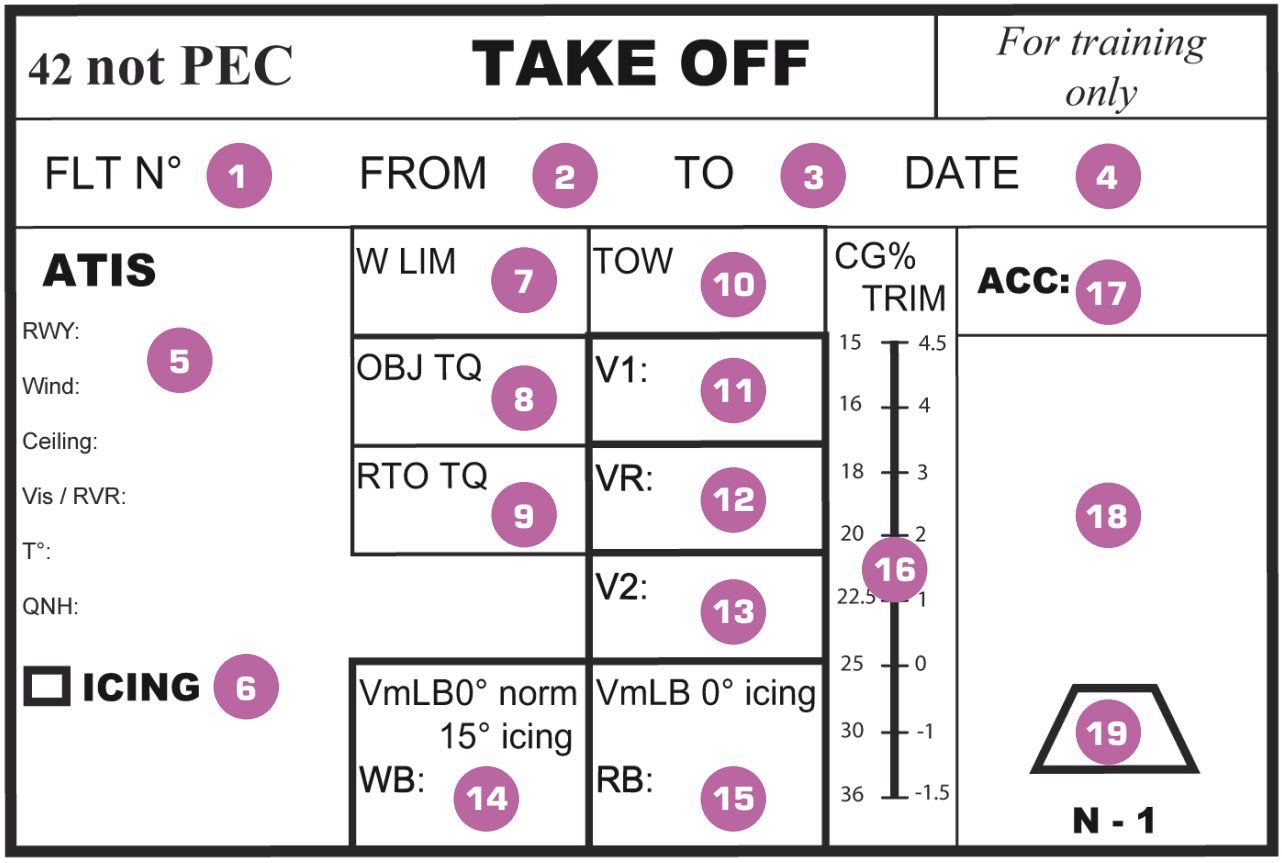
F **VmLB 0° (RB)**
Write the value of VmLB0 in icing conditions read in the QRH.

G **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?…".



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.

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

7 **W LIM**
Announce W LIM

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

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

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

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

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

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

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

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

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

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

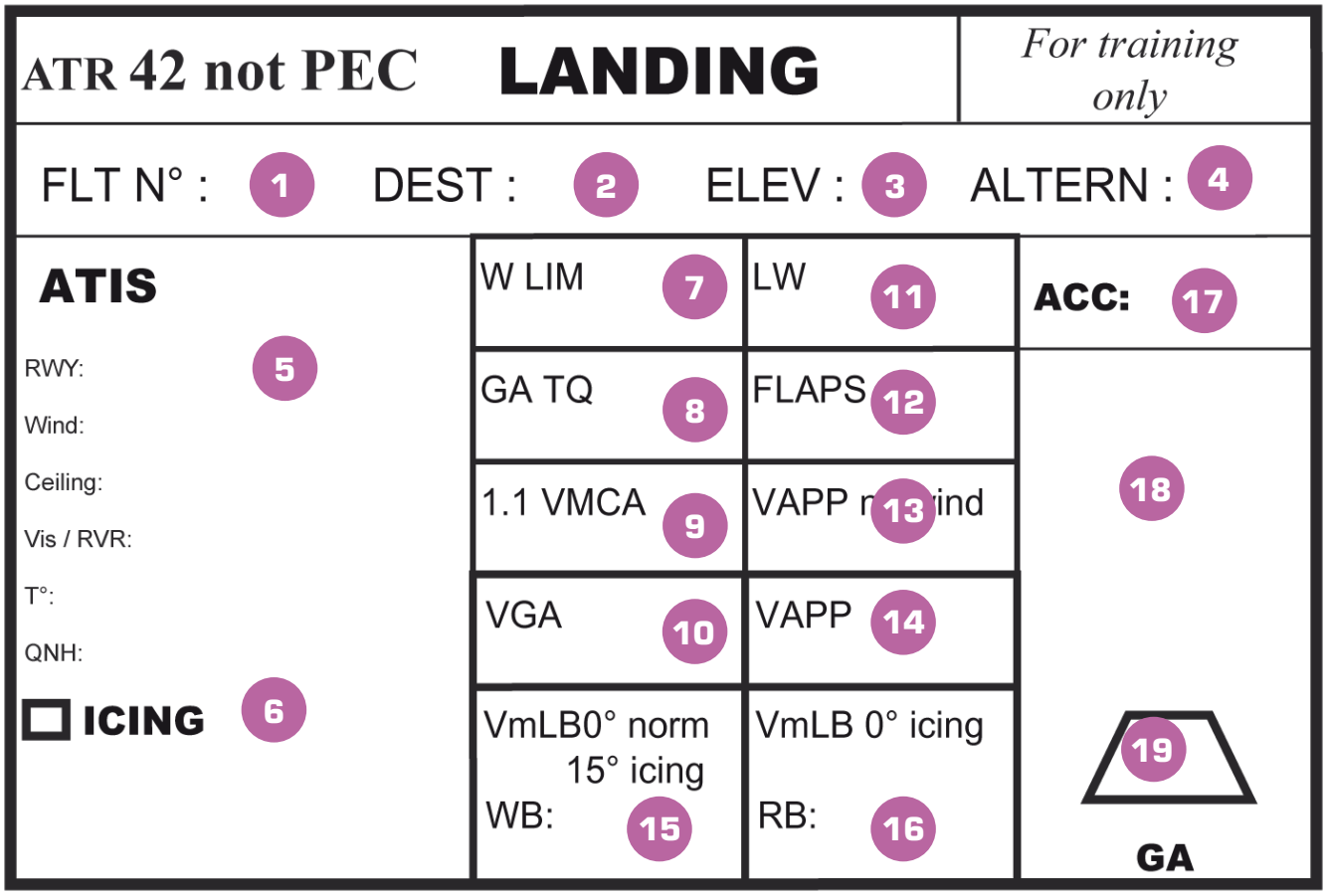
18 **SINGLE ENGINE PROCEDURE**
Confirm the single engine procedure according to weather conditions.

19 **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.



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.

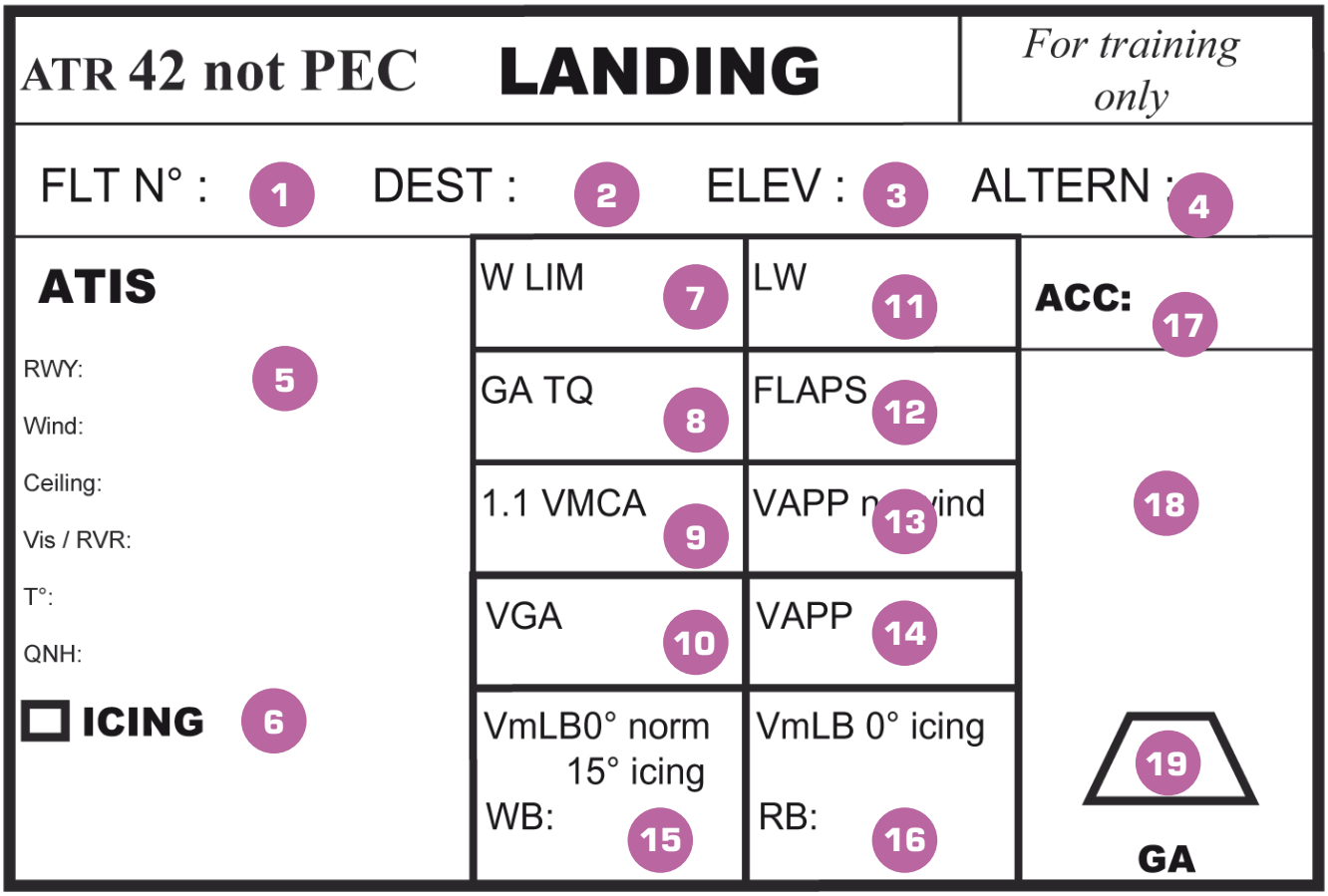
18 **GO-AROUND PROCEDURE**
Draw the first segment of the go-around procedure (first heading, first altitude, first turn).

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.



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**
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.

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...)

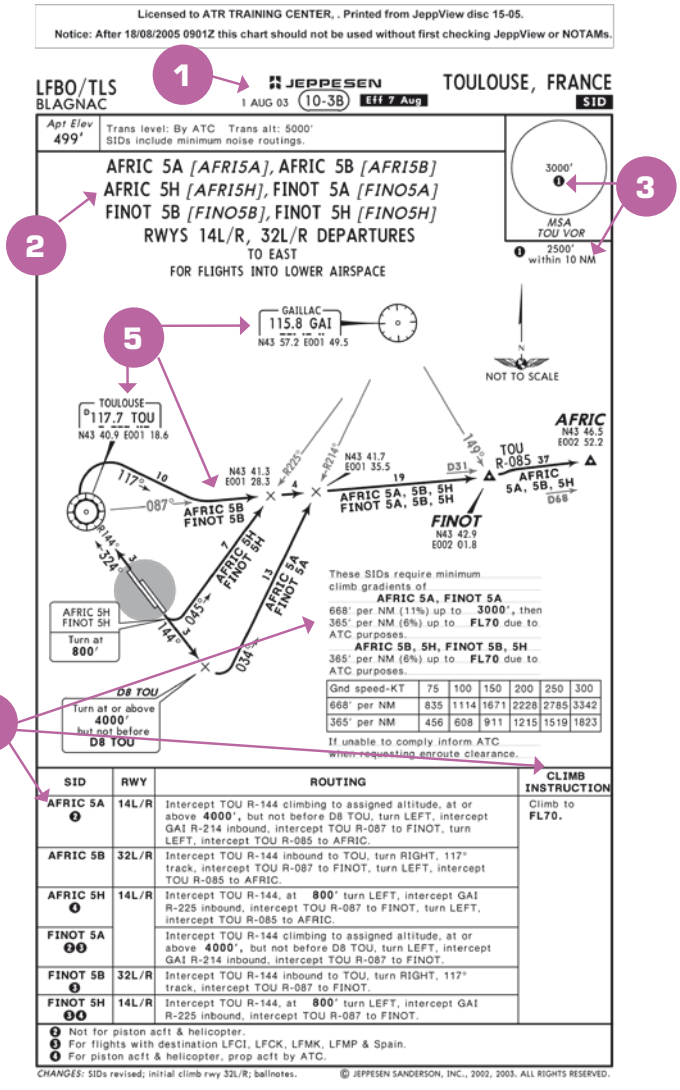
Taxi

- 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"

ALL ATR

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

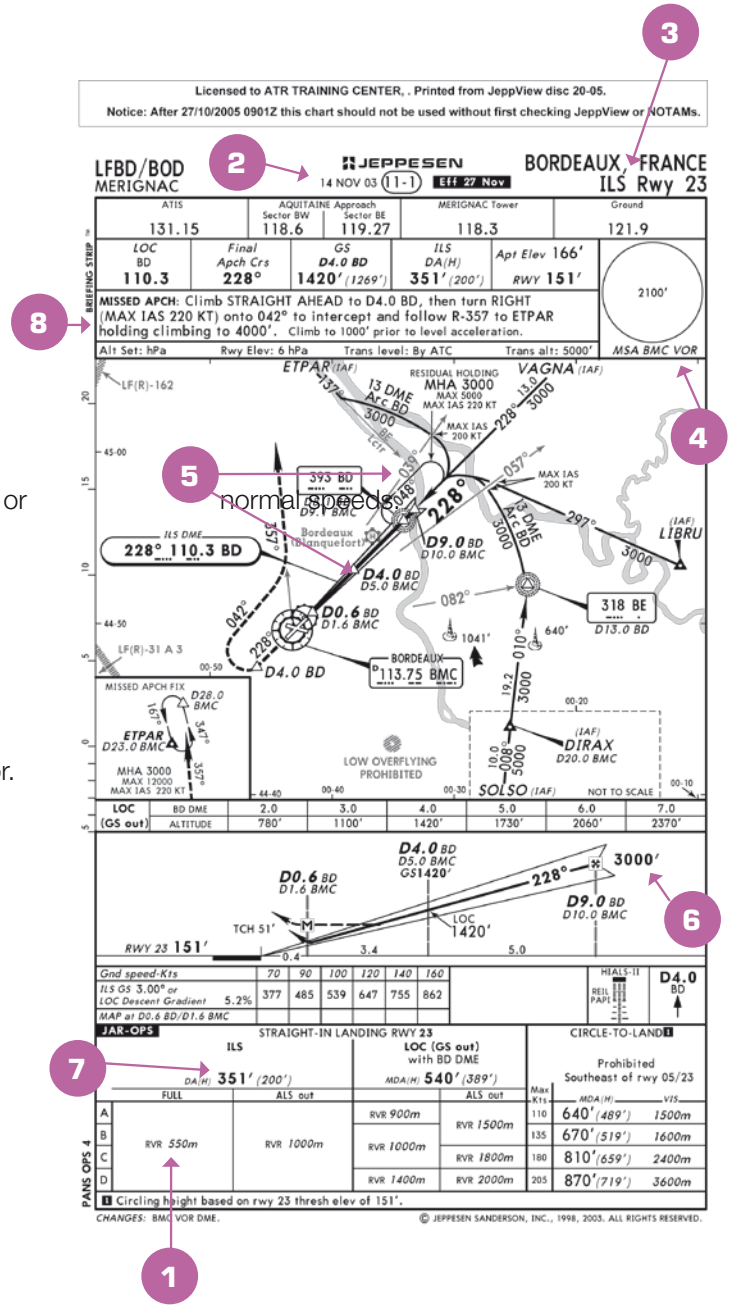
• Airport equipment failure...

• 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

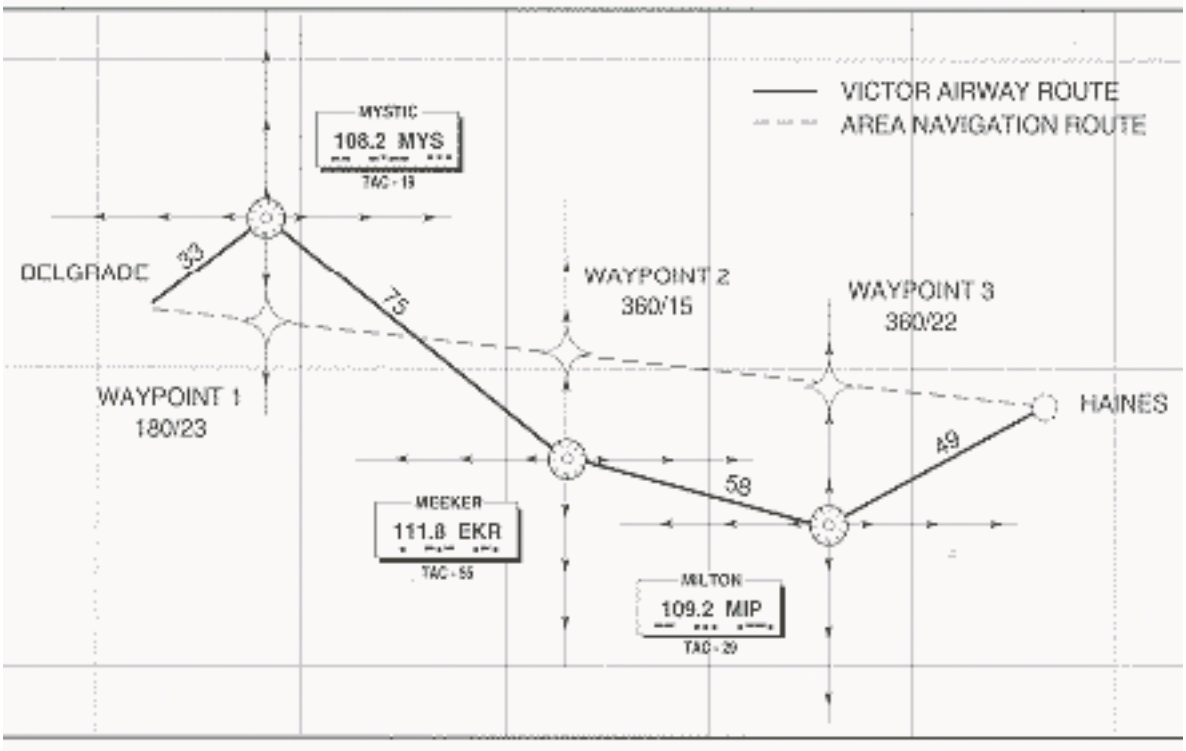
3.9.1. Definitions

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.



Area Navigation Route

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 independantly 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 independantly from the current speed of the aircraft. Thus there is no protection against stall if the aircraft is in VOR at Low Bank speeds.

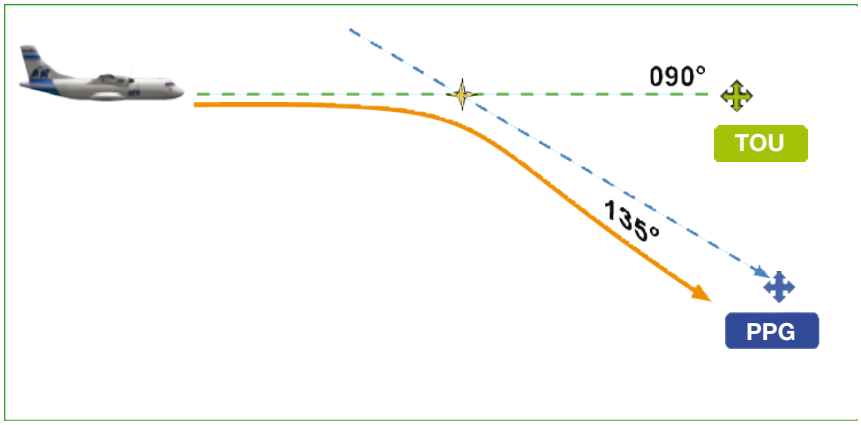
Conventional Radio navigation method

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



PNF

TOU frequency
(to be changed)

Then

PNF

PPG frequency
(expected track)

PNF	PF
▶DO NAV 1..... PPG FREQUENCY SET COURSE 1 ..... 135 SET ▶ANNOUNCE **"NAV 1 116.25, COURSE 135 SET"**	▶REQUEST **"SET NAV 1 PPG, COURSE 135"** ▶ANNOUNCE **"CHECK"**

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.

PNF	PF
▶REQUEST "MONITOR VHF 1 WITH TOULOUSE CONTROL"	▶ANNOUNCE "RADIO IS RIGHT (LEFT) SIDE"
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:

	VHF 1	VHF 2
ACTIVE	ATC FREQUENCY	ATIS / 121.5 MHz (cruise)
STBY	NEXT ATC FREQUENCY	OPS FREQUENCY

- 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 suplied.
- **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

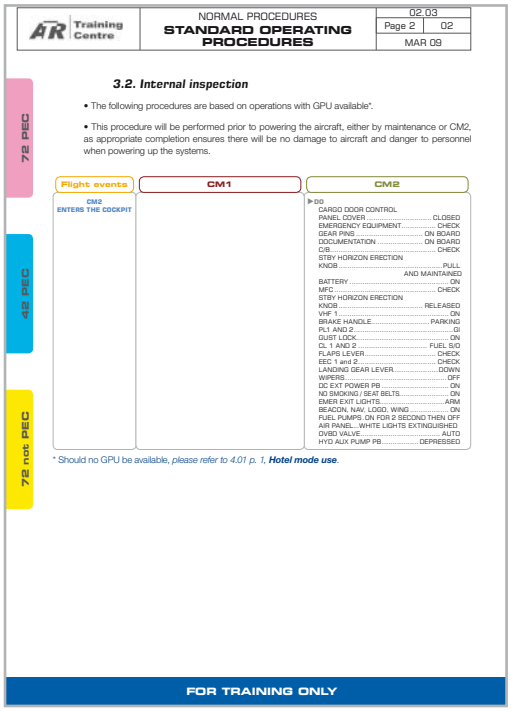
Information for:

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

COCKPIT PANEL

Information for:

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



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72 PEC | 42 PEC | 72 not PEC

3.2. Internal inspection

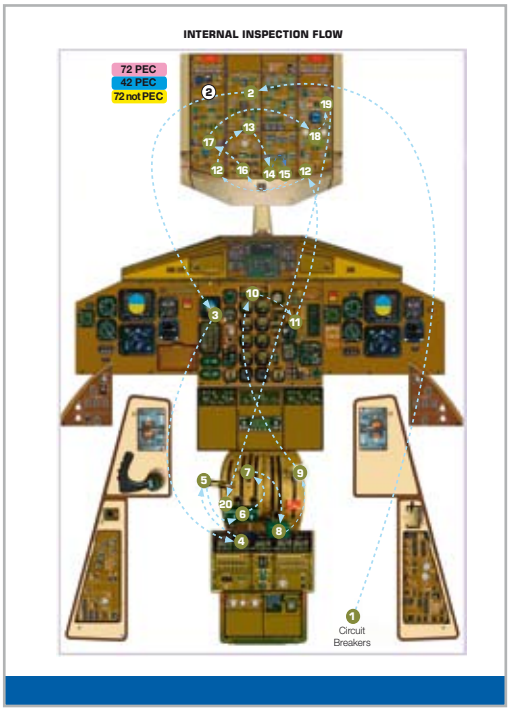
• The following procedures are based on operations with GPU available*.

• 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.

Flight events	CM1	CM2
CM2 ENTERS THE COCKPIT		▶DO CARGO DOOR CONTROL PANEL COVER ..... CLOSED EMERGENCY EQUIPMENT ..... CHECK GEAR PINS ..... ON BOARD DOCUMENTATION ..... ON BOARD CVR ..... CHECK STBY HORIZON ERECTION KNOB ..... PULL AND MAINTAINED BATTERY ..... ON MFC ..... CHECK STBY HORIZON ERECTION KNOB ..... RELEASED VHF 1 ..... ON BRAKE HANDLE ..... PARKING PL1 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 DC EXT POWER PB ..... ON NO SMOKING / SEAT BELTS ..... ON EMER EXT LIGHTS ..... ARM BEACON, NAV, LOGO, WING ..... ON FUEL PUMPS ON FOR 2 SECOND THEN OFF AIR PANEL.. WHITE LIGHTS EXTINGUISHED OVBD VALVE ..... AUTO HYD AUX PUMP PB ..... DEPRESSED

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

FOR TRAINING ONLY



ALL ATR

2. Pre-flight preparation procedure

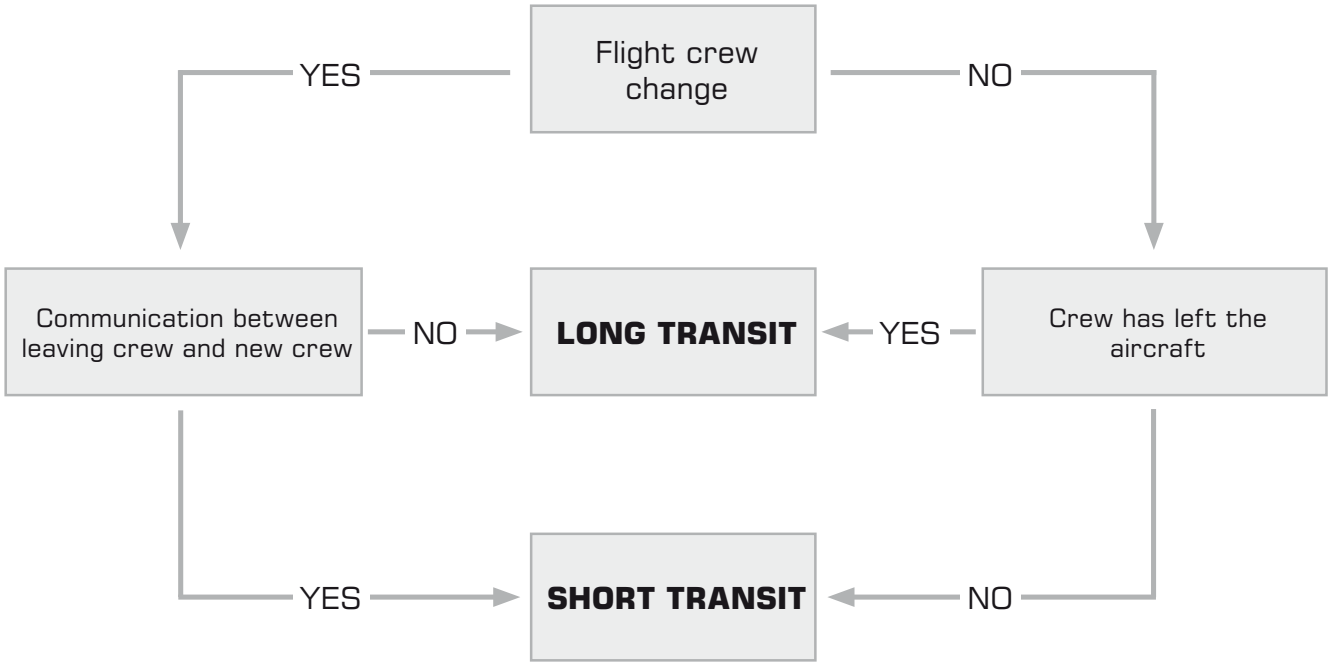
Crew members shall check the following items:

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 responsiblity to determine wether to perform long or short transit regarding the criteria described hereafter:



• 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.

Flight events	CM1	CM2
CM2 ENTERS THE COCKPIT		▶DO CARGO DOOR CONTROL PANEL COVER ..... CLOSED EMERGENCY EQUIPMENT..... CHECK GEAR PINS ..... ON BOARD DOCUMENTATION ..... ON BOARD C/B..... CHECK STBY HORIZON ERECTION KNOB .....PULL AND MAINTAINED BATTERY ..... ON STBY HORIZON ERECTION KNOB..... RELEASED VHF 1..... ON BRAKE HANDLE..... PARKING PL1 AND 2.....GI GUST LOCK..... ON CL 1 AND 2 ..... FUEL S/O FLAPS LEVER..... CHECK ECU 1 AND 2..... CHECK LANDING GEAR LEVER.....DOWN WIPERS.....OFF DC EXT POWER PB ..... ON NO SMOKING / SEAT BELTS..... ON EMER EXIT LIGHTS.....ARM BEACON, NAV, LOGO, WING ..... ON FUEL PUMPS....ON FOR 2 SECOND THEN OFF AIR PANEL ....WHITE LIGHTS EXTINGUISHED OVBD VALVE..... AUTO HYD AUX PUMP PB..... DEPRESSED

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

PERSONAL NOTES

3.2. Internal inspection

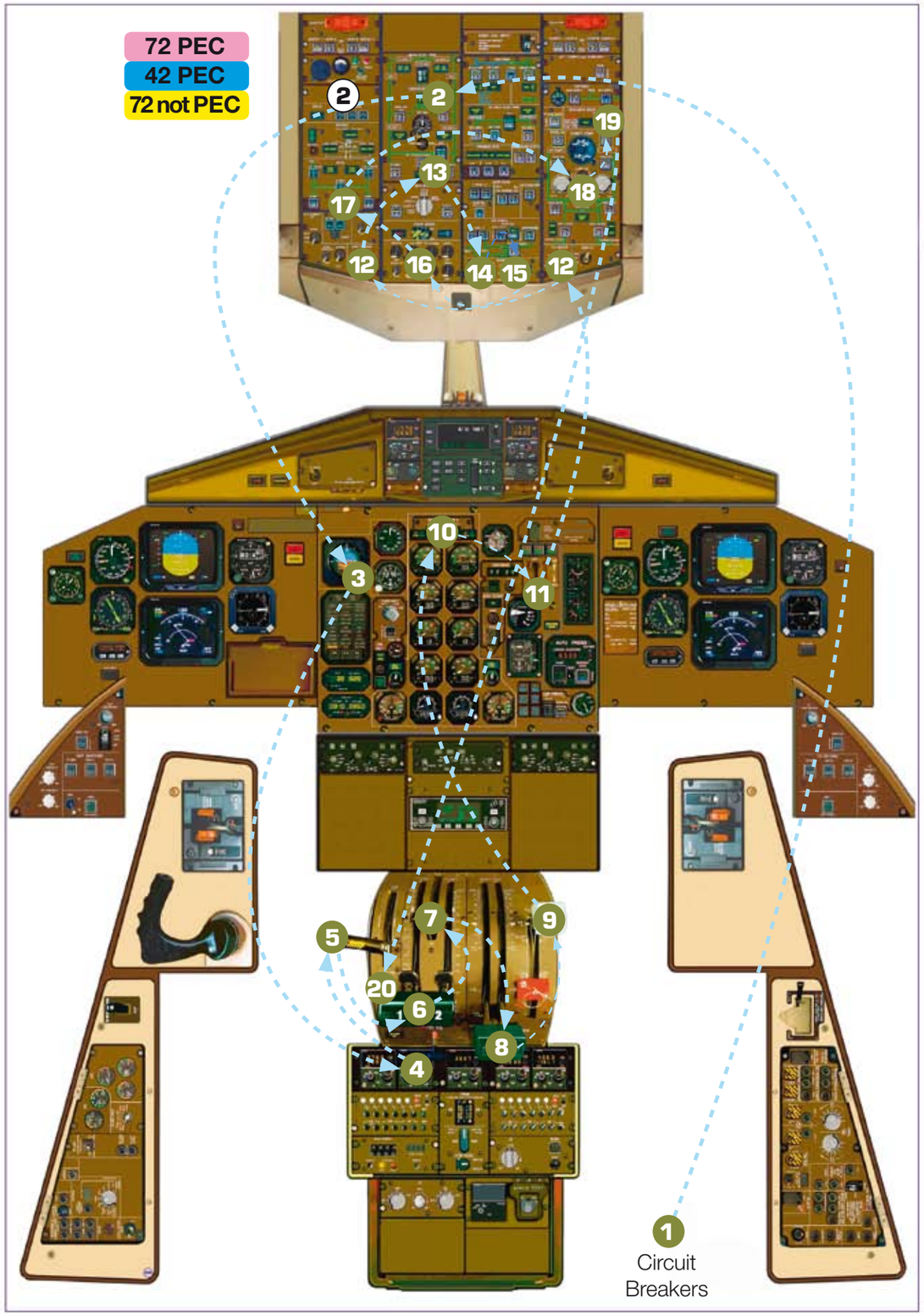
• The following procedures are based on operations with GPU available*.

• 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.

Flight events	CM1	CM2
CM2 ENTERS THE COCKPIT		▶**DO** CARGO DOOR CONTROL PANEL COVER ..... CLOSED EMERGENCY EQUIPMENT..... CHECK GEAR PINS ..... ON BOARD DOCUMENTATION ..... ON BOARD C/B..... CHECK STBY HORIZON ERECTION KNOB .....PULL AND MAINTAINED BATTERY ..... ON MFC ..... CHECK STBY HORIZON ERECTION KNOB ..... RELEASED VHF 1..... ON BRAKE HANDLE..... PARKING PL1 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 DC EXT POWER PB ..... ON NO SMOKING / SEAT BELTS..... ON EMER EXIT LIGHTS.....ARM BEACON, NAV, LOGO, WING ..... ON FUEL PUMPS...ON FOR 2 SECOND THEN OFF AIR PANEL...WHITE LIGHTS EXTINGUISHED OVBD VALVE..... AUTO HYD AUX PUMP PB..... DEPRESSED

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

INTERNAL INSPECTION FLOW



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

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

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

3 STANDBY HORIZON ERECTION KNOB: RELEASED
Check no flag.

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

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

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

7 GUST LOCK: ON
Check it is fully engaged.

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

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

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

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

12 CAPTAIN & F/O WIPERS: OFF

13 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.

14 NO SMKG & SEAT BELTS SIGNS: ON

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

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

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

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

19 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.

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

PERSONAL NOTES

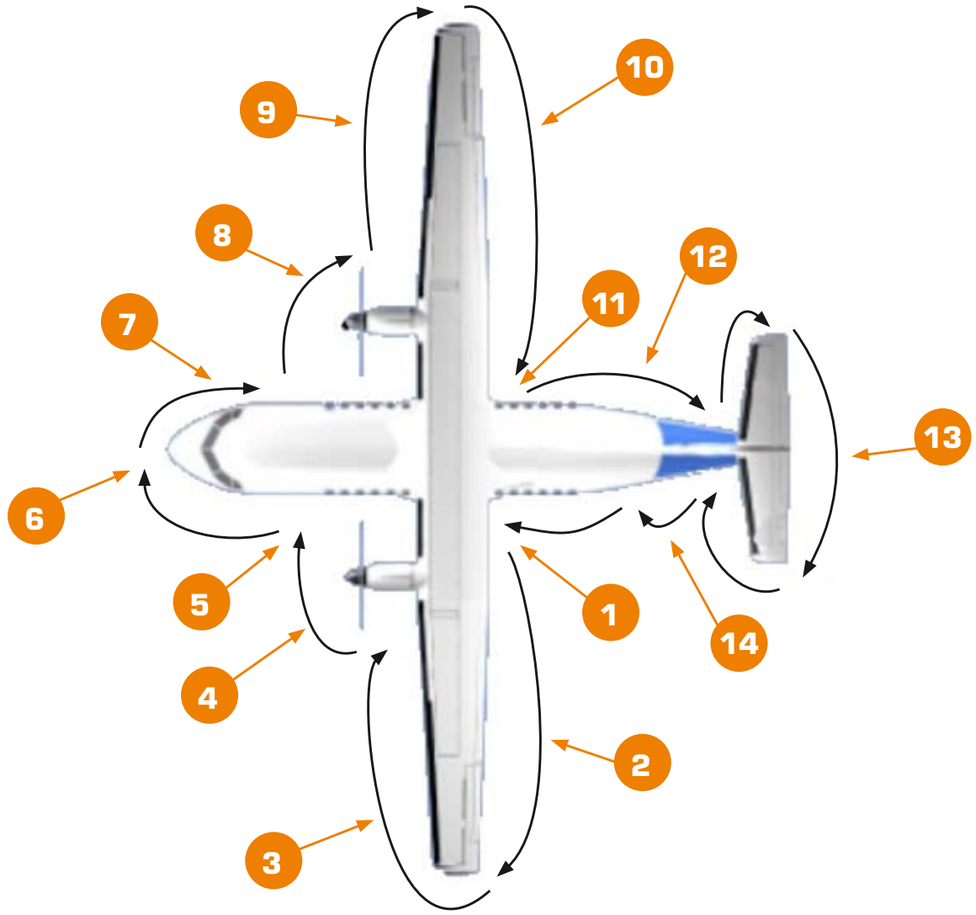
3.3. External inspection

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.

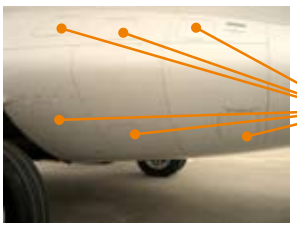
Upon completion of inspection:

– PNF returns to the cockpit



1 – Main left landing gear and fairing

Park brake accumulator pressure (check minimum 1600psi)



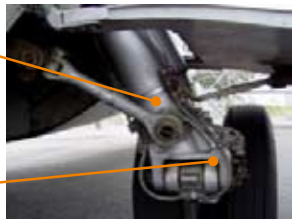
6 maintenance doors (closed)

Gear door (check, fixed, no impact)

Beacon (condition, window not broken) and flashing if selected ON

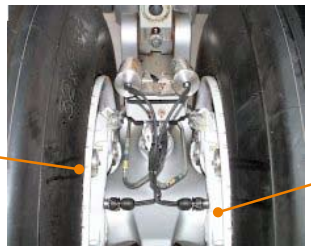
Landing gear structure (check, no crack, no oil)

Wheel and tires (condition, no crack, inflation)



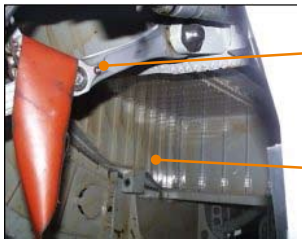
Hydraulic lines (check, no leak)

Brake wear detector (check indicator out of bolt)



Brake temperature sensor (check plugging in)

Uplock (open)



Safety pin removed

Wheel well (condition, no leak)

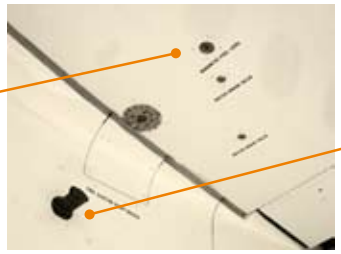
ALL ATR

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)



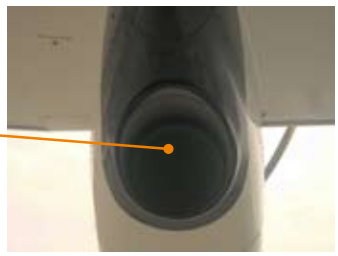
TAT prob (check)

42 PEC
72 PEC
72 not PEC

2 – Left wing trailing edge

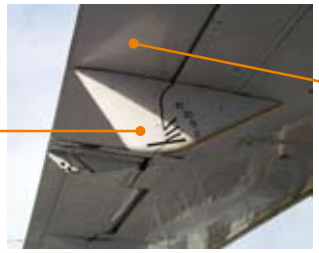
Banana seal (check unobstructed) and not damaged

Exhaust nozzle (unobstructed)



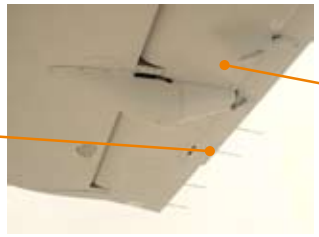
Inner/outer flaps uncoupling control system (check indicator visible)

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)



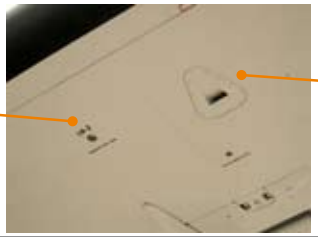
Aileron and tab (check, fixed, no impact)

3 – Left wing leading edge

Horn (condition)

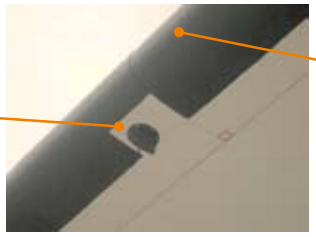
Nav and strobe lights (condition, window not broken) and illuminated if ON

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)

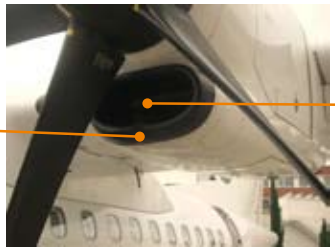


Wing de-icing boots (no tear, no blister, no peeling, varnish)

4 - Left engine

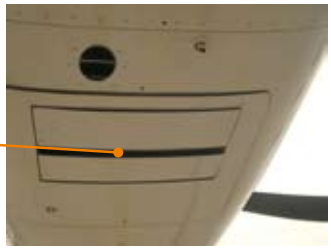
Left cowls (closed, latched)

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)

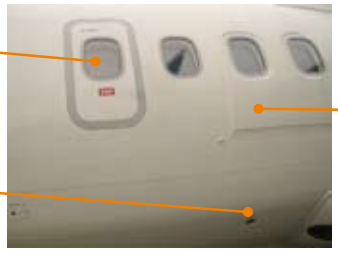
Spinner (secure, spinner indicator aligned with propeller indicator, no impact)

Inner wing leading edge and fairing (condition)

5 – Left forward fuselage

Emergency exit (check closed)

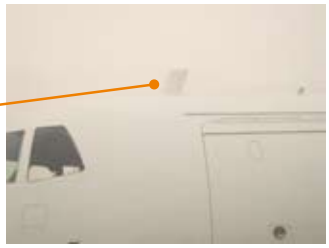
Emergency light (condition, window not broken)



Wing light (condition, window not broken)

Avionics vent overboard valve (open)

Antennae (check in place, no impact)

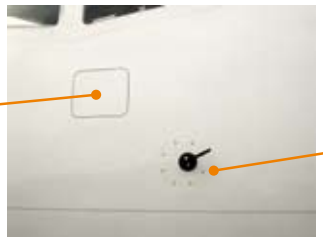


Cargo door (closed, latched)

Cargo door operating panel (closed)

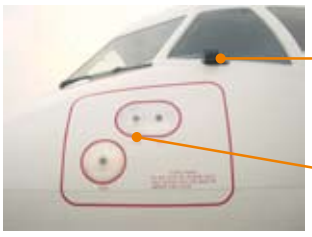
Bottle overboard discharge indicator (green in normal status)

Cockpit communication hatch (closed)



Angle of attack (condition)

Pitot probes and covers (check, removed)

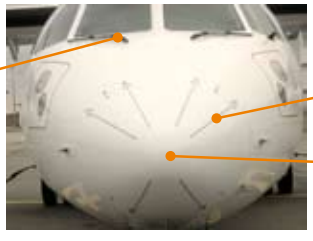


Icing evidence probe (condition)

Static ports (clear)

6 – Nose

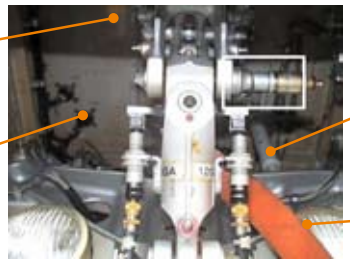
Wipers (condition, in place, position)



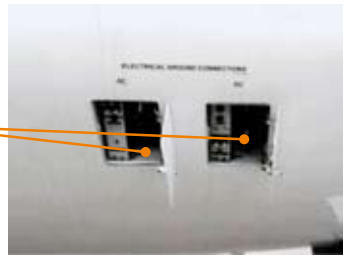
Static dischargers (check)

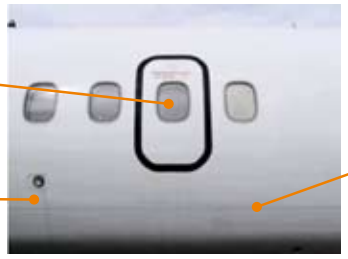
Radome and latches (check, fixed, no impact)

ALL ATR



7 – Right forward fuselage





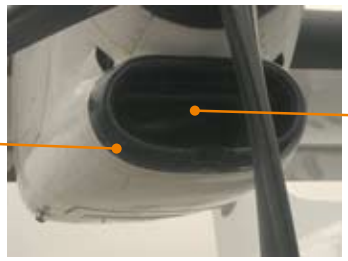
ALL ATR

8 – Right engine

Right cowls (closed, latched)

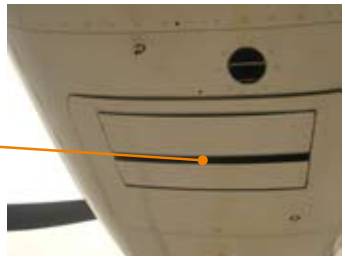
Inner wing leading edge and fairing (condition)

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

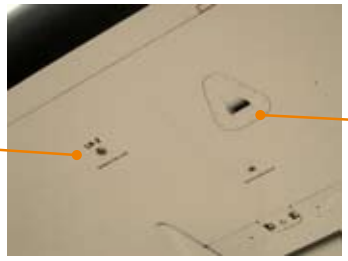
Refuelling point access door (closed)

42 not PEC
42 PEC

Wing de-icing boots (no tear, no blister, no peeling, varnish)

ALL ATR

Magnetic fuel level in



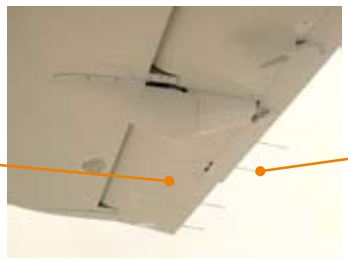
Fuel vent NACA inlet (clear, unobstructed)

Horn (condition)

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

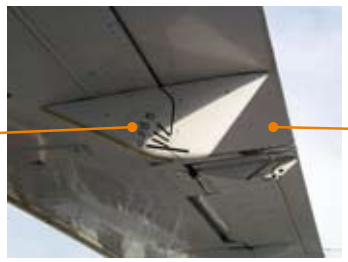
10 – Right wing trailing edge

Aileron and tab (check, fixed, no impact)



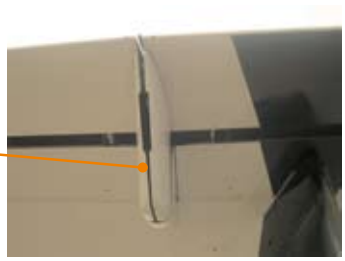
5 static dischargers (check in place, not broken)

Flaps position (check position is in accordance with the flaps lever)

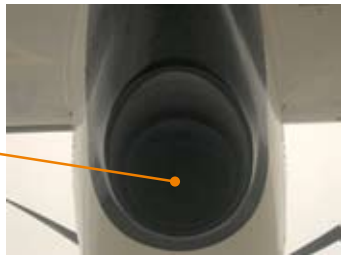


Flaps (condition, fixed, no impact)

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



Exhaust nozzle (unobstructed)



Banana seal (check unobstructed) and not damaged

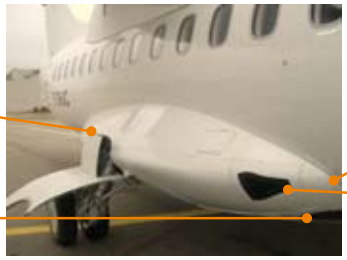
ALL ATR

11 – Main right landing gear and fairing

Refuelling point access door (closed)

72 PEC
72 not PEC

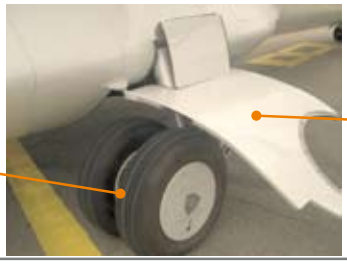
Landing light (condition, window not broken)



Air conditionning ground access door (closed)

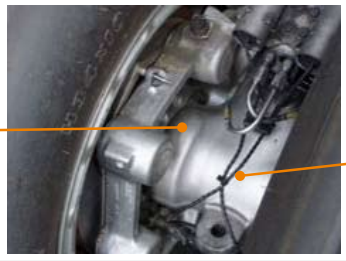
Pack ram air inlet (check unobstructed)

Refuelling control access door



Wheel and tires (condition, no creek, inflation)

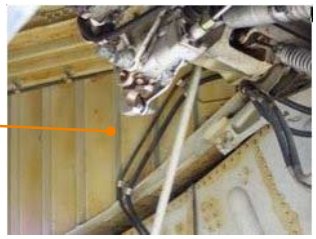
Gear doors (check, fixed, no impact)



Landing gear structure (check, no creek, no oil)

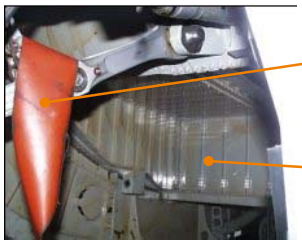
Hydraulic lines (check, no leak)

Uplock (open)



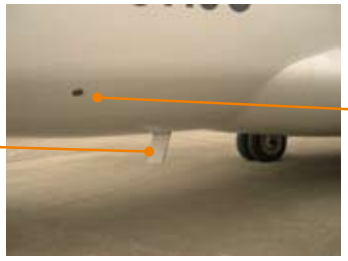
Safety pin removed

Wheel well (condition, no leak)



ALL ATR

12 – Right aft fuselage



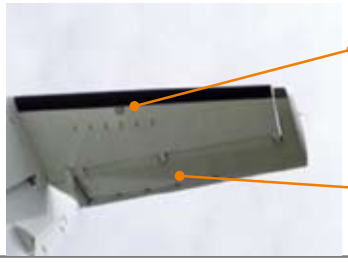
ALL ATR

13 – Tail

Flight controls access door (closed)

Horn (condition)

8 static dischargers (check, in place, no break, no burn)



Logo light (condition, window not broken)

Stabilizers, elevators and trims (check, fixed, no impact)

Stabilizer de-icing boots (condition, no tear, no blister, no peeling, varnish)

VOR antenna (check in place, no impact)

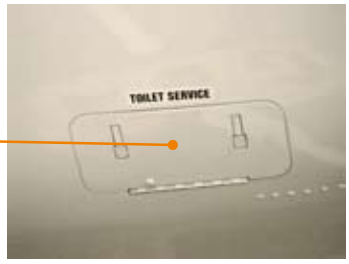
Vortex generator (check no impact)

5 static dischargers, fin, rudder, tab (check fixed, no impact)

2 static dischargers, nav and strobe lights (condition, window not broken)

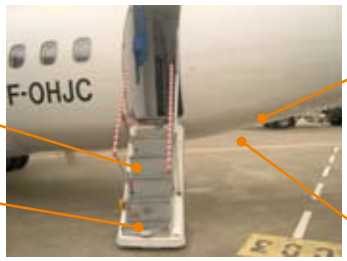
14 – Left aft fuselage

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

ALL ATR

PERSONAL NOTES

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

CM1

▶DO

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)

CM2

▶DO

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
CVR..... TEST
SIGN PANEL.....CHECK
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

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.....GI
CL.....FUEL SO
GUST LOCK ..... ON
RADAR..... STBY
ECP.....TEST/SET
GPS ..... ON
MCDU (If installed with the MPC)..... SET
CDLS .....Daily check

42 not PEC

3.4. Preliminary cockpit preparation (2/2)

Flight events	CM1	CM2
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..... 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 BARS ..... 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
AHRS ..... 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

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
RMI/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.

42 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 *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

▶DO
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)

CM2

▶DO

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
DC/AC PANEL .....CHECK
CVR..... TEST
SIGN PANEL .....CHECK
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

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.....GI
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

72 PEC
42 PEC
72 not PEC

3.4. Preliminary cockpit preparation (2/2)

Flight events	CM1	CM2
AFTER PEDESTAL PANEL SCAN	72 PEC 42 PEC 72 not PEC	▶DO **SCAN ON CENTRAL PANEL** FUEL QTY..... TEST / CHECK TAT/SAT..... CHECK CAP..... CLR STBY INSTRUMENTS..... CHECK PWR MGT..... T/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 BARS..... 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 AHRS..... 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 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 RMI/EHSI..... CHECK AIR SPEED..... CHECK CLOCK..... SET

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

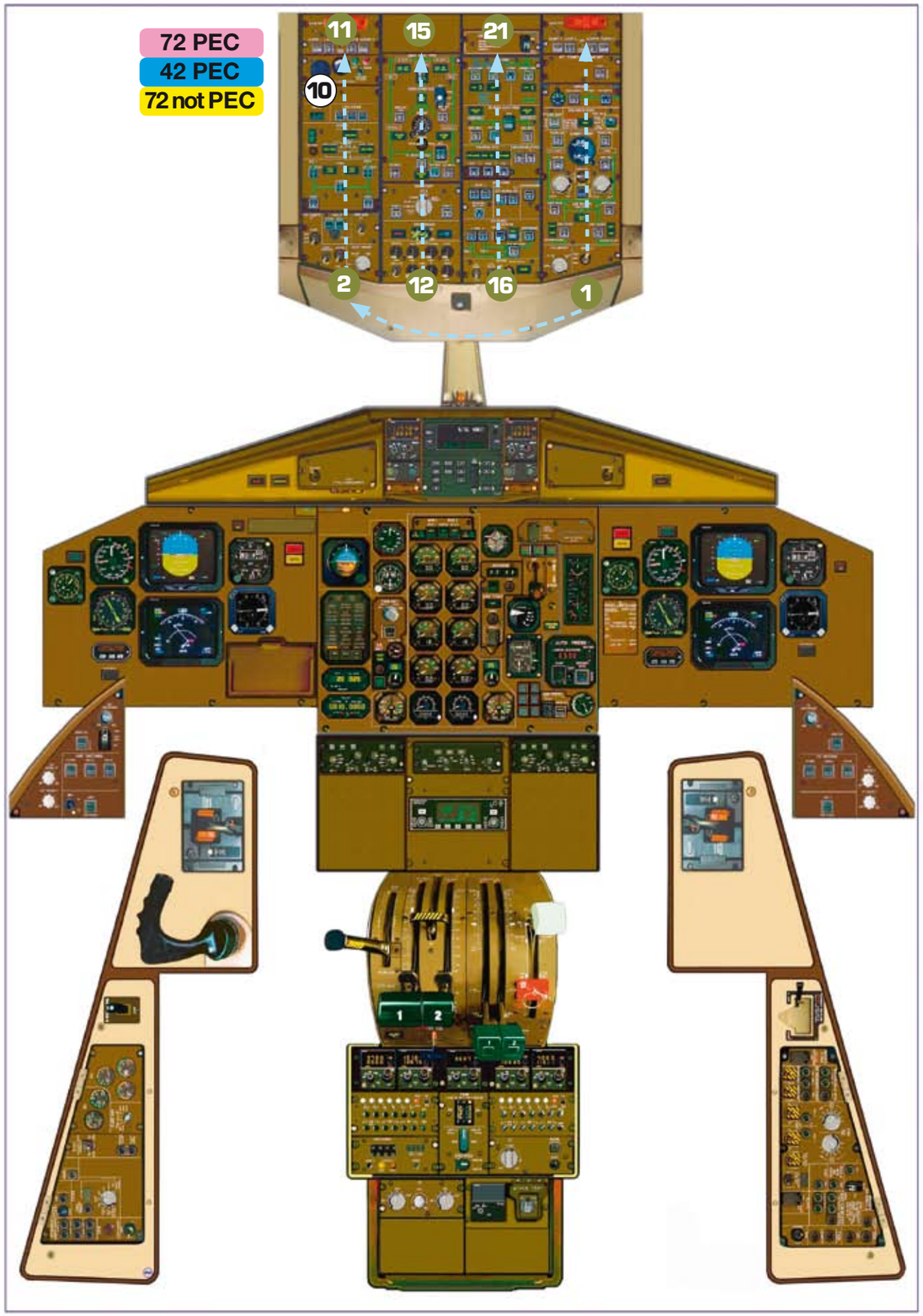
Example: TRANSPONDER, IGNITION, ADC SWITCH (IF INSTALLED)

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

could be selected according to PF decision.

* 1 needle recommended.

PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (1/4)



COCKPIT + OVERHEAD PANEL

OVERHEAD PANEL

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

2 DOME LIGHT: AS REQUIRED

3 STANDBY COMPASS: CHECK AND OFF
Check lights off.

4 STORM LIGHT: CHECK AND OFF
Check storm light OFF.

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.

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

11 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.

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

13 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.

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

15 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.

16 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

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

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

19 ACW PANEL: CHECK
Extinguish any white light.

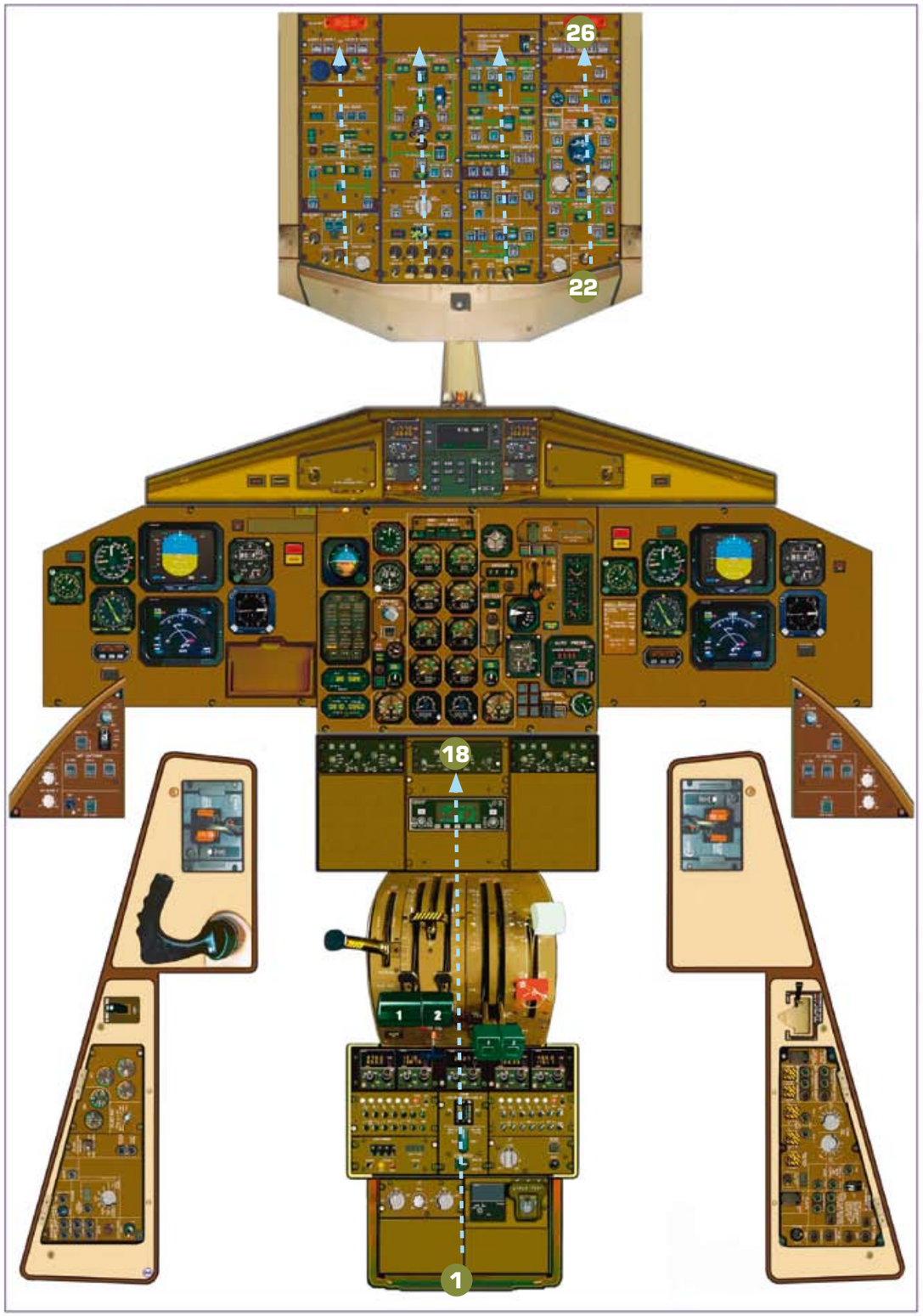
20 HYD PANEL: CHECK
Extinguish any white light.
Check the BLUE and GREEN PUMP LO PR lights are illuminated and other lights are extinguished.
Select the EMER EXIT Light to ARM.

21 EMER LOC XMTR: AUTO
Check the toggle switch is in AUTO position, guarded and lockwired.

PERSONAL NOTES

PERSONAL NOTES

PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (2/4)



OVERHEAD PANEL (cont'd) + PEDESTAL

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.
- 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.

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 TRANSPONDER: STANDBY & TEST
FID: ATC flight identification inserted (if equipped)

9 IDLE GATE: CHECK
Select the flight ID (If Installed)
Check the IDLE GATE FAIL amber light is extinguished and the amber band is visible on the lever.

10 EMER AUDIO CANCEL: CHECK GUARDED
Check the switch is guarded and lockwired.

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.
AIL LOCK LIGHT (If installed): CHECK EXTINGUISHED

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)

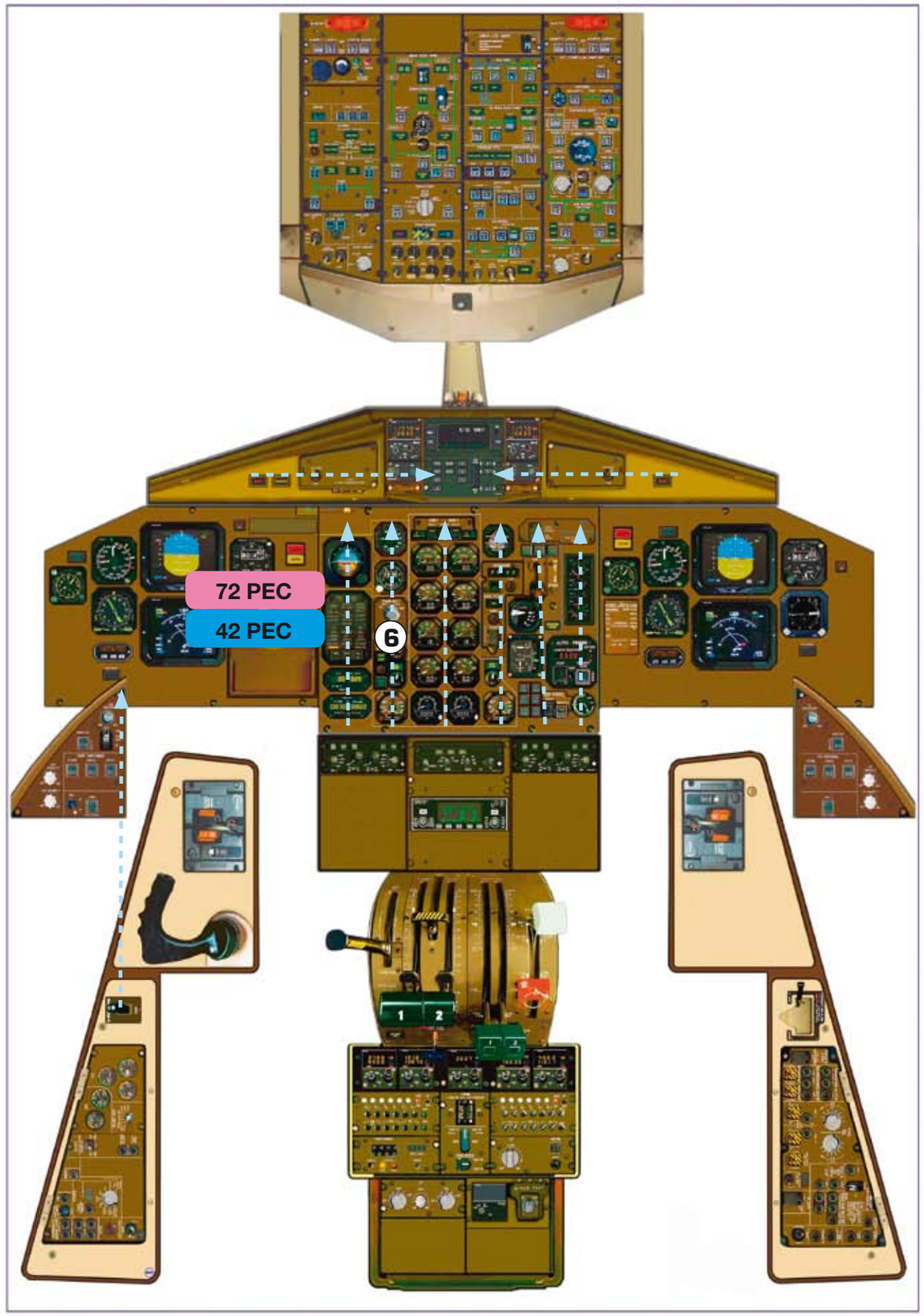
17 MCDU (If installed with the MPC): SET
Set the flight number and and check FDAU time base, adjust if necessary.

18 COCKPIT DOOR DAILY CHECK (If installed)
Refer to QRH - Normal Procedure - 3.02A

PERSONAL NOTES

PERSONAL NOTES

PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (3/4)



CENTRAL PANEL + GLARESHIELD

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.

(6) PEC 1 & 2: ON
Check no amber light is illuminated.

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

8 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
– TQ = 0.

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

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

11 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.

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

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

14 STICK PUSHER: CHECK
Check no light is illuminated.

15 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

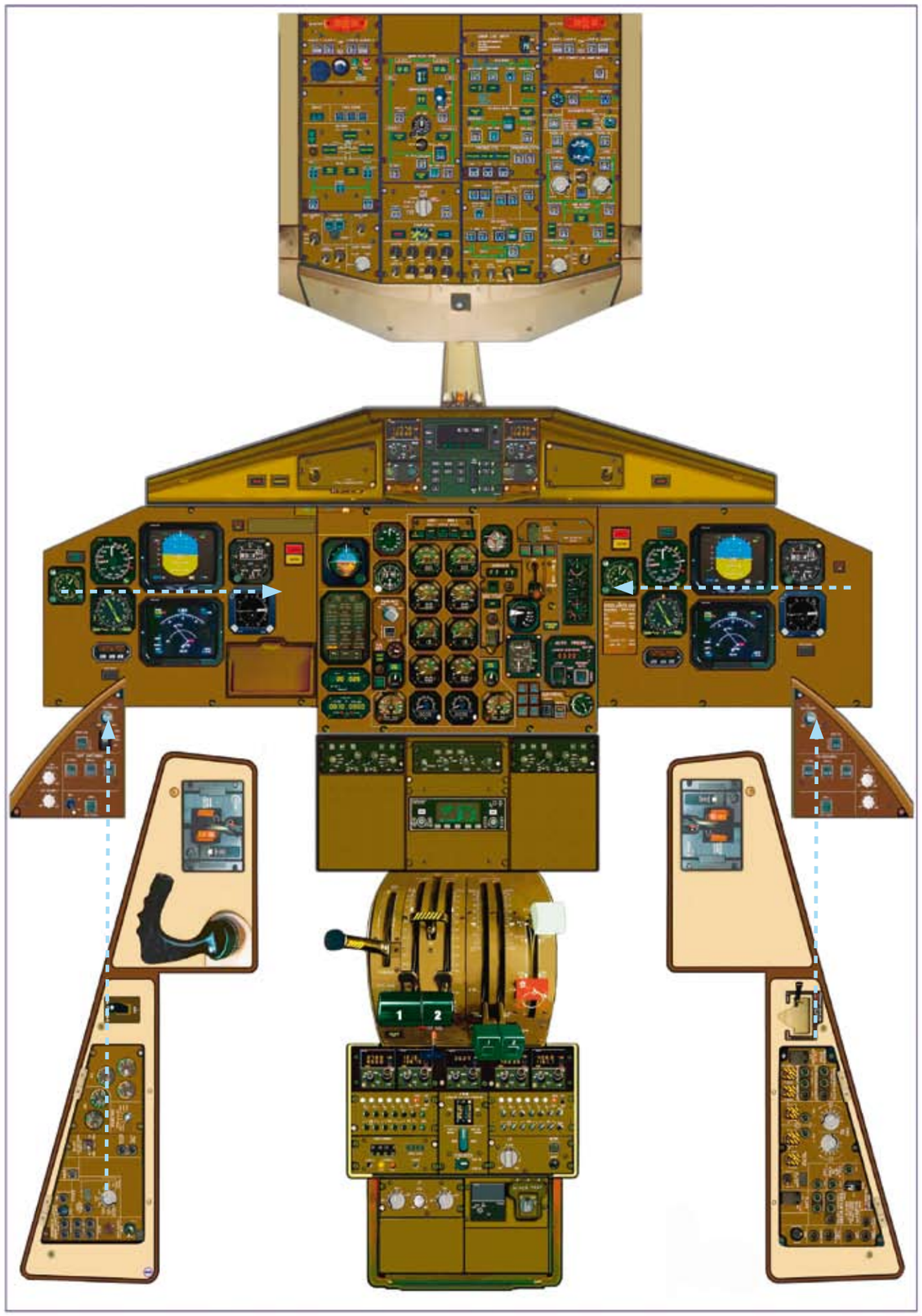
3 ADU: BRT
Adjust ADU brightness as required.

PERSONAL NOTES

PERSONAL NOTES

FOR TRAINING ONLY

PRELIMINARY COCKPIT PREPARATION SCAN (LONG TRANSIT) (4/4)



CAPT LATERAL & INSTRUMENT PANELS + F/O LATERAL & INSTRUMENT PANELS

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.

8 EGPWS: CHECK
Check the EGPWS switch is guarded in normal position and the GPWS light is not illuminated on CAP.

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.

4 EADI: CHECK

5 EGPWS: TEST
Refer to FCOM 1.15.40 for test procedure.

6 ALTIMETER: CHECK
Check no flag.

7 VSI: CHECK
Check no flag and pointer indicates zero.

8 ADC SWITCH (If installed):
SET TO ADEQUATE ADC

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 F/O 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.

7 ASI: CHECK
Check: – no flagging
– airspeed pointer indicates zero
– VMO pointer indicates 250kt.

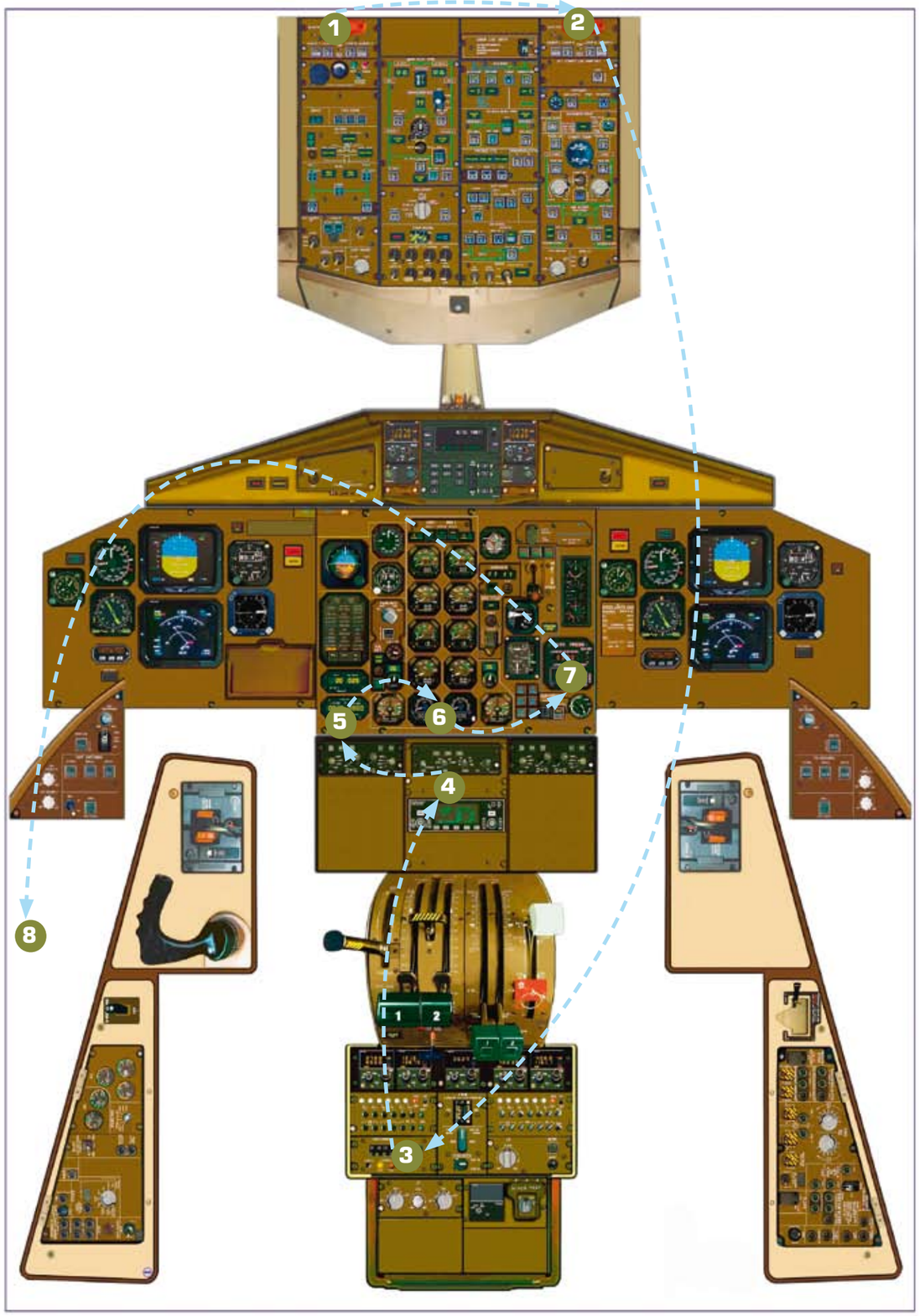
8 CLOCK: CHECK
Check the time, adjust if necessary.

PERSONAL NOTES

3.4.2. Short transit

Flight events	CM1	CM2
	▶DO **EXTERNAL INSPECTION**	▶DO ENG 1 FIRE..... 3 TESTS ENG 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.

PERSONAL NOTES

3.5. Final cockpit preparation

Flight events	CM1	CM2
PRELIMINARY COCKPIT PREPARATION COMPLETE	▶ANNOUNCE **"FINAL COCKPIT PREPARATION PROCEDURE"** ▶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

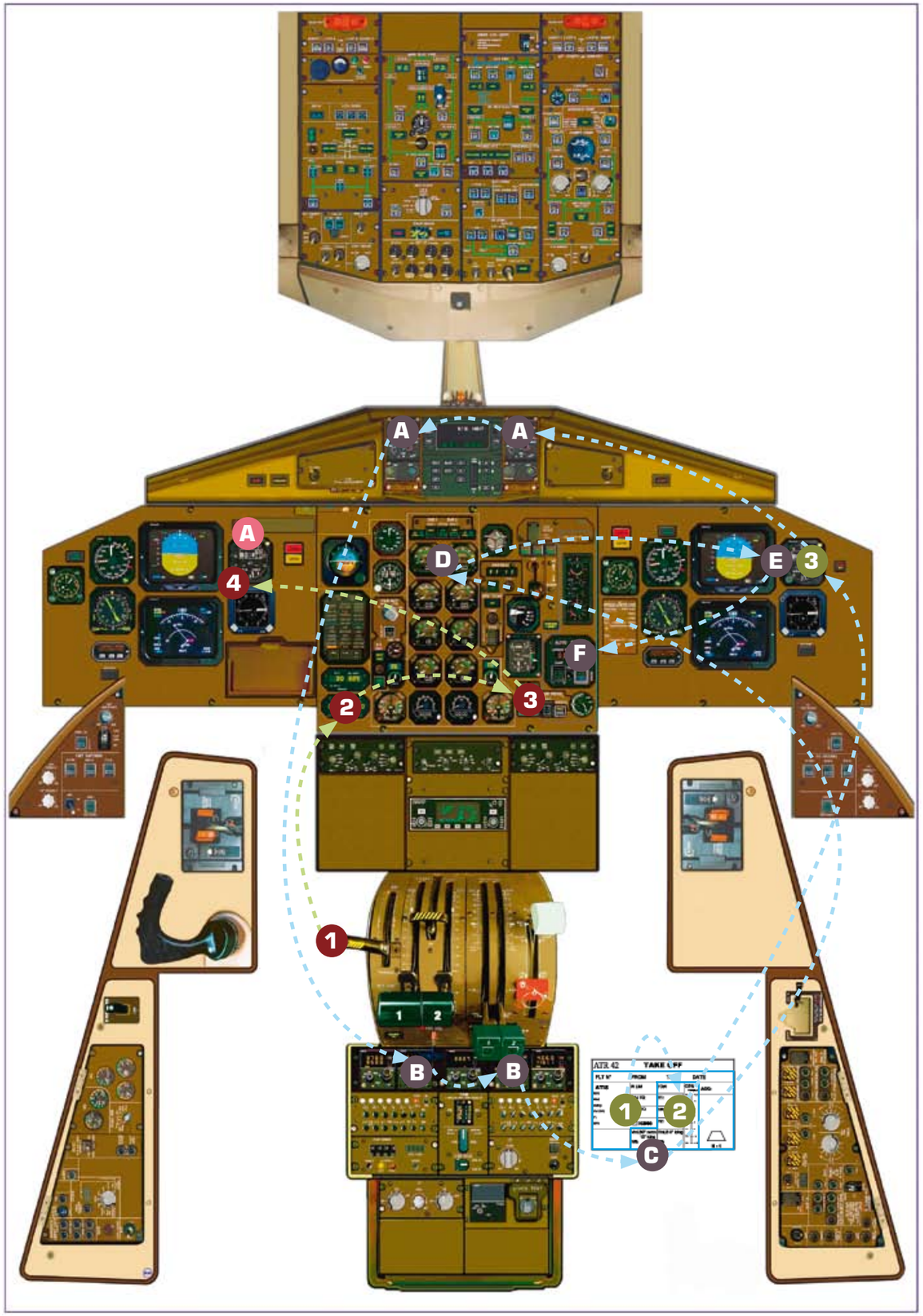
(1) Take-off data card 1ST PART: Flight number, FROM, TO, date, weather, WLIM, T/O TQ, RTO TQ, acceleration altitude, single engine flight path, RWY heading.

PF
▶DO RADIO NAV & RNAV.....SET (according to expected SID) VHF 1 & 2.....SET

Flight events	PNF	PF
CREW READY FOR TAKE-OFF DATA CARD 1ST PART PROCCEEDING	ALTIMETERS BUGS...SET & CROSSCHECK	▶READ AND DO WEATHER ..... CHECK OBJ TORQUE.....SET RTO TORQUE.....CHECK AMBER BUGS ALTIMETERS BUGS ..... SET & CROSSCHECK LANDING ELEVATION.....SET
CREW READY TO PERFORM THE DEPARTURE BRIEFING		*Refer to 01.03 p. 36,* ***departure briefing*** ▶ANNOUNCE **"FINAL COCKPIT PREPARATION PROCEDURE COMPLETE"**

Flight events	CM1	CM2
FINAL COCKPIT PREPARATION COMPLETE	▶REQUEST AND ANSWER **"FINAL COCKPIT PREPARATION C/L"**	▶ANNOUNCE AND READ **"FINAL COCKPIT PREPARATION C / L"** *Refer to QRH normal C/L* **"C/L COMPLETE"**

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 symetrically 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.

PNF

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

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

A 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.

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

C TAKE-OFF DATA CARD: 1st PART PROCESSED

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

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

F LANDING ELEVATION: SET

ALL ATR

PERSONAL NOTES

PERSONAL NOTES

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	CM1	CM2
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"**	▶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 starting of the day, then for the next starting, "A" for odd days and "B" for even days, to detect ignition system hidden failure ▶ANNOUNCE **"RIGHT SIDE CLEAR, READY TO START ENG 2?"**
AFTER OUTSIDE VISUAL CHECK	▶DO TIMING*.....START START 2..... CHECK ON * For starter limitation time, 30 s maxi when starter off (45%NH)	▶DO START 2 PB..... DEPRESSED ▶ANNOUNCE **"STARTER ON"**
NH=10% **(UNTIL NH=19% IF ITT>200°C)**		▶DO AND ANNOUNCE CL 2..... FEATHER TIMING*.....START **"FUEL OPEN"** *For ignition time, it should rise within 10 seconds ▶DO ENGINE PARAMETERS.....CHECK
ITT INCREASING	▶DO ENGINE PARAMETERS.....CHECK	▶ANNOUNCE **"IGNITION"** TIMING..... STOP
NH=25%	▶DO ENGINE PARAMETERS.....CHECK	▶ANNOUNCE **When FAULT amber light extinguished** **"ECU"**
NH INCREASING	▶DO ENGINE PARAMETERS.....CHECK	▶DO AND ANNOUNCE ENGINE PARAMETERS.....CHECK **"OIL PRESS"**
NH=45%	▶ANNOUNCE **"STARTER OFF"** *If not, select rotary selector OFF/START ABORT ▶DO TIMING..... STOP	▶ANNOUNCE **"45%"** ▶DO ITT MAX.....CHECK ▶ANNOUNCE **" ITT XXX °C"**
NH = 61.5%		▶ANNOUNCE **"PARAMETERS STABILIZED"**
PARAMETERS STABILIZED	▶DO DC GEN 2 VOLTAGE.....CHECK ▶ANNOUNCE **"GROUND FROM COCKPIT, YOU CAN DISCONNECT GPU"**	▶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

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	CM1	CM2
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 filling DATA CARD 2nd part TAKE-OFF DATA CARD.....2nd PART FILLED

Flight events	PNF	PF
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	CM1	CM2
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"**

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	CM1	CM2
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"**	▶**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?"**
AFTER OUTSIDE VISUAL CHECK	▶**DO** TIMING*.....START START 2..... CHECK ON ** For starter limitation time, 30 s maxi when starter off (45%NH)*	▶**DO** START 2 PB..... DEPRESSED ▶**ANNOUNCE** **"STARTER ON"**
NH=10% **(UNTIL NH=19% IF ITT>200°C)**		▶**DO AND ANNOUNCE** CL 2..... FEATHER TIMING*.....START **"FUEL OPEN"** **For ignition time, it should rise within 10 seconds* ▶**DO** ENGINE PARAMETERS.....CHECK
ITT INCREASING	▶**DO** ENGINE PARAMETERS.....CHECK	▶**ANNOUNCE** **"IGNITION"** TIMING..... STOP
NH INCREASING	▶**DO** ENGINE PARAMETERS.....CHECK	▶**DO AND ANNOUNCE** ENGINE PARAMETERS.....CHECK **"OIL PRESS"**
NH=45%	▶**ANNOUNCE** **"STARTER OFF"** **If not, select rotary selector OFF/START ABORT* ▶**DO** TIMING..... STOP	▶**ANNOUNCE** **"45%"** ▶**DO** ITT MAX.....CHECK ▶**ANNOUNCE** **" ITT XXX °C"**
NH=61.5%		▶**ANNOUNCE** **"PARAMETERS STABILIZED"**
PARAMETERS STABILIZED	▶**DO** DC GEN 2 VOLTAGE.....CHECK ▶**ANNOUNCE** **"GROUND FROM COCKPIT, YOU CAN DISCONNECT GPU"**	▶**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

72 PEC
42 PEC
72 not PEC

72 PEC

42 PEC

72 not PEC

3.6. Before propeller rotation (2/2)

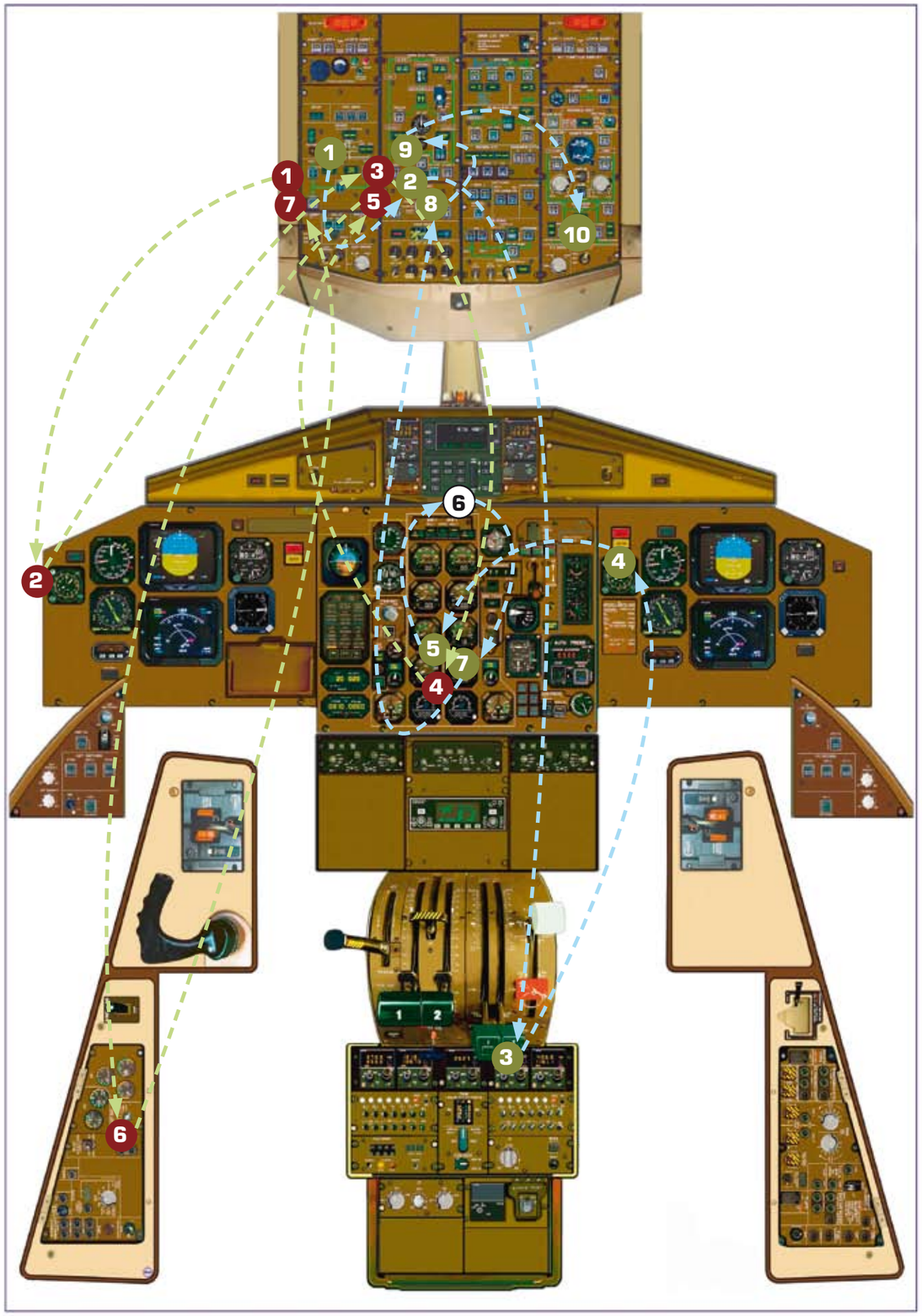
The data card 2nd part proceeding, can be performed during final cockpit preparation, if the load and trim sheet has been received.

Flight events	CM1	CM2
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 filling DATA CARD 2nd part TAKE-OFF DATA CARD.....2nd PART FILLED

Flight events	PNF	PF
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	CM1	CM2
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 exinguishes, 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 STABLISED”, then turn the rotary selector to OFF/START ABORT.

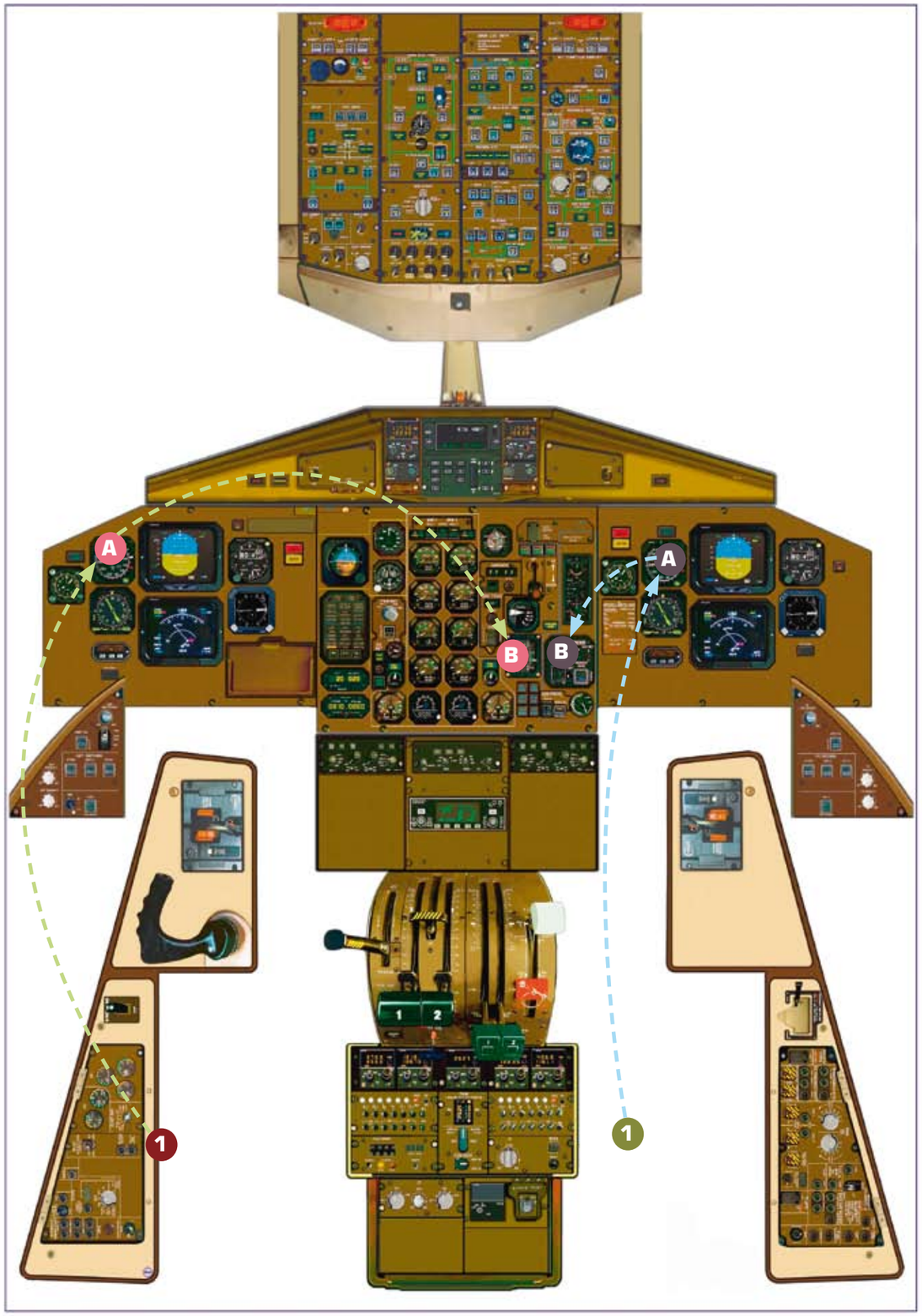
9 DC EXTERNAL POWER: OFF / DISCONNECT
When OFF check that the DC GEN 2 FAULT light extinguishes and BTC still closed.

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.

PERSONAL NOTES

PERSONAL NOTES

BEFORE PROPELLER ROTATION FLOW (2/3)



CM1

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

PNF

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

B TRIM: CROSSCHECK

CM2

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

PF

DATA CARD 2ND PART PROCEEDING

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

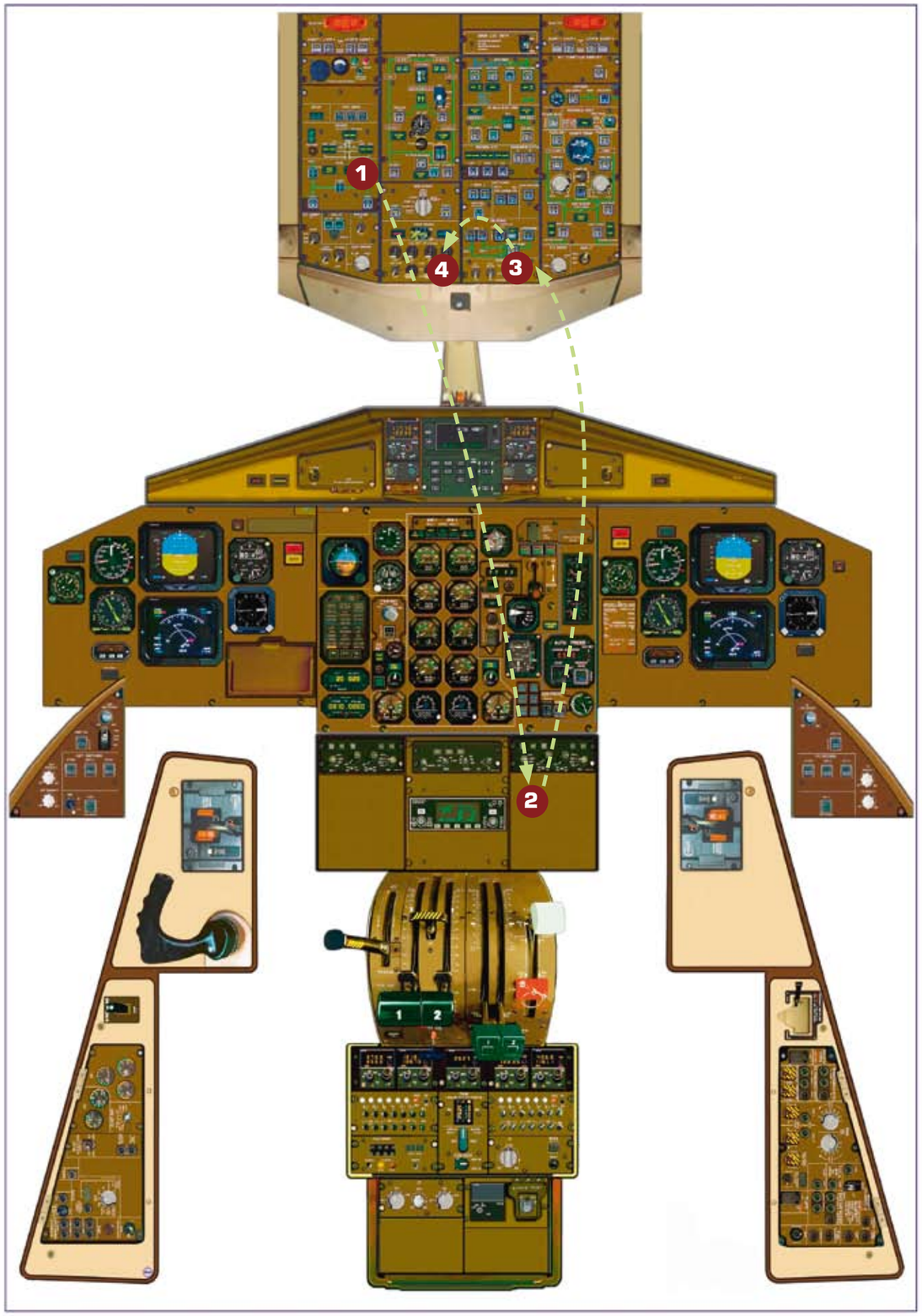
B TRIM: SET

ALL ATR

PERSONAL NOTES

PERSONAL NOTES

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.

PERSONAL NOTES

PERSONAL NOTES

FOR TRAINING ONLY

3.7. Before taxi (1/2)

Flight events	CM1	CM2
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"**	▶ANSWER **"RIGHT SIDE CLEAR!"** ▶ANNOUNCE *(AFTER VISUAL CHECK)* **"ROTATION"** ▶DO CL 2.....MAX RPM ▶ANNOUNCE **"LOW PITCH"**
WHEN NP STABILIZED AROUND 71 %		▶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 ANTISKID..... TEST FLAPS 15

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	CM1	CM2
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)*	▶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''**

72 not PEC

42 not PEC

3.7. Before taxi (2/2)

Flight events	CM1	CM2
NH = 10% (UNTIL NH=19% IF ITT>200°C)		▶DO AND ANNOUNCE CL 1 ..... FEATHER TIMING* ..... START **"FUEL OPEN"** **For ignition time, ITT should rise within 10 seconds*
ITT INCREASING	▶DO ENGINE PARAMETERS ..... CHECK	▶ANNOUNCE **"IGNITION"** TIMING ..... STOP
NH = 25% **42 not PEC**	▶DO ENGINE PARAMETERS ..... CHECK	▶ANNOUNCE When FAULT amber light extinguished **"ECU"**
NH INCREASING	▶DO ENGINE PARAMETERS ..... CHECK	▶DO AND ANNOUNCE ENGINE PARAMETERS ..... CHECK **"OIL PRESS"**
NH = 45%	▶ANNOUNCE **"STARTER OFF"** ** If not, rotary selector OFF/START ABORT* ▶DO TIMING ..... STOP ▶DO ENGINE PARAMETERS ..... CHECK	▶ANNOUNCE **"45%"** ▶DO ITT MAX ..... CHECK ▶ANNOUNCE **"ITT XXX °C"**
NH = 61.5%		▶ANNOUNCE **"PARAMETERS STABILIZED"**
PARAMETERS STABILIZED	▶ORDER **"CL 1 MAX RPM"**	▶DO ENGINE START ..... OFF &START ABORT DC GEN 1 FAULT..... EXTINGUISHED DC BTC..... CHECK EXTINGUISHED BLEED / PACKS ..... LIGHTS EXTINGUISHED ▶DO CL 1 ..... MAX RPM ▶ANNOUNCE **"LOW PITCH"**
WHEN NP STABILIZED AROUND 71 %	▶DO COCKPIT COM HATCH..... CLOSE	▶CHECK ACW GEN 1 ..... ON LINE OVERHEAD PANEL DARK *(EXCEPTED THE FAULT LIGHT ON EXHAUST MODE P/B FOR 2 MINUTES)*
PROCEDURE COMPLETE	▶REQUEST AND ANSWER **"BEFORE TAXI CHECKLIST"**	▶ANNOUNCE **"BEFORE TAXI PROCEDURE COMPLETE"** ▶ANNOUNCE AND READ **"BEFORE TAXI CHECKLIST"** *Refer TO QRH 6.01* ▶ANNOUNCE **"C/L COMPLETE"**

72 not PEC

42 not PEC

3.7. Before taxi (1/2)

Flight events	CM1	CM2
START UP CLEARANCE RECEIVED	▶ORDER **"BEFORE TAXI PROCEDURE"** ▶ANNOUNCE **"GROUND FROM COCKPIT PARKING BRAKE IS ON, READY TO RELEASE PROPELLER BRAKE, CONFIRM CHOCKS ON, AIRCRAFT CLEAR"** ▶ANNOUNCE **"RIGHT SIDE CLEAR?"** ▶DO HYD AUX PUMP..... DEPRESS PROP BRAKE .....READY LIGHT ON ▶DO PROP BRAKE .....OFF NP STABILIZED..... CHECK ▶ORDER **"CL 2 AUTO"**	▶ANSWER **"RIGHT SIDE CLEAR"** ▶ANNOUNCE *(AFTER VISUAL CHECK)* **"ROTATION"** ▶DO CL 2..... AUTO ▶ANNOUNCE **"SINGLE CHANNEL..... LOW PITCH"**
WHEN NP STABILIZED AROUND 71%		▶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 ANTISKID..... TEST FLAPS 15

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	CM1	CM2
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)*	▶DO ("U" CHECK) DOORS..... CLOSED ENGINE START SELECT..... A+B (or A or B)* **"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* ▶ANNOUNCE **"CONFIRM LEFT SIDE CLEAR, READY TO START ENG N° 1?''** ▶DO STARTER 1 PB..... DEPRESSED ▶ANNOUNCE **" STARTER ON''**

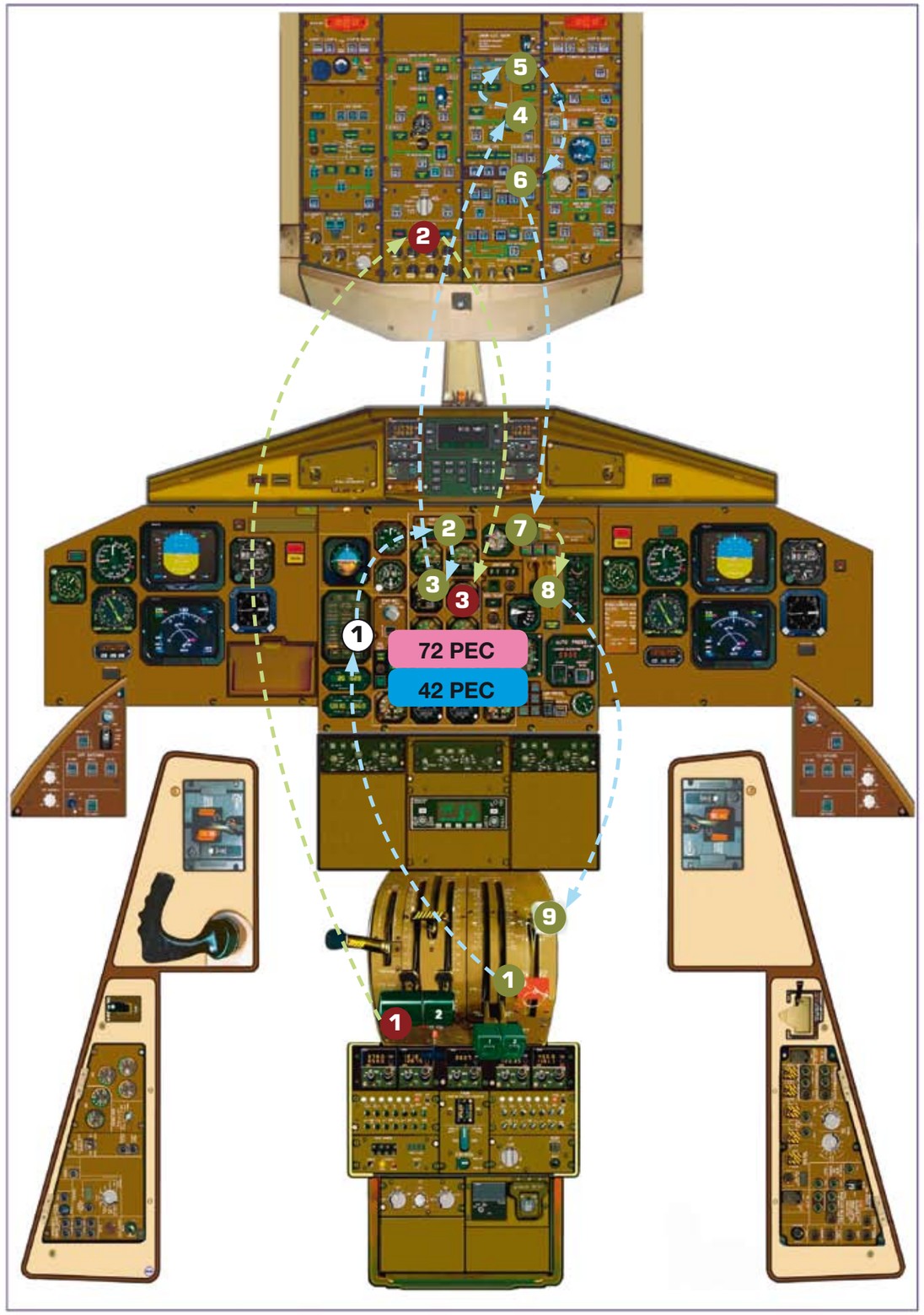
72 PEC

42 PEC

3.7. Before taxi (2/2)

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

BEFORE TAXI FLOW (1/2)



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)

(1) PEC SINGLE CHANNEL TEST: CHECK
Check SGL CH is illuminated then extinguished.

2 LO PITCH LIGHT: ILLUMINATED

3 ENGINE PARAMETERS: MONITOR

4 ACW GEN 2: ON LINE
When parameters stabilised, check ACW GEN 2 on line BTCs closed.

5 HYDRAULIC PANEL: DARK

6 ANTI-ICING: ON
When icing conditions prevail on take-off

7 ACCUMULATORS GAUGES : 3 x 3000 PSI

8 ANTISKID: TEST
Check MC + SC + WHEELS and FFFF appearing during 6 seconds.

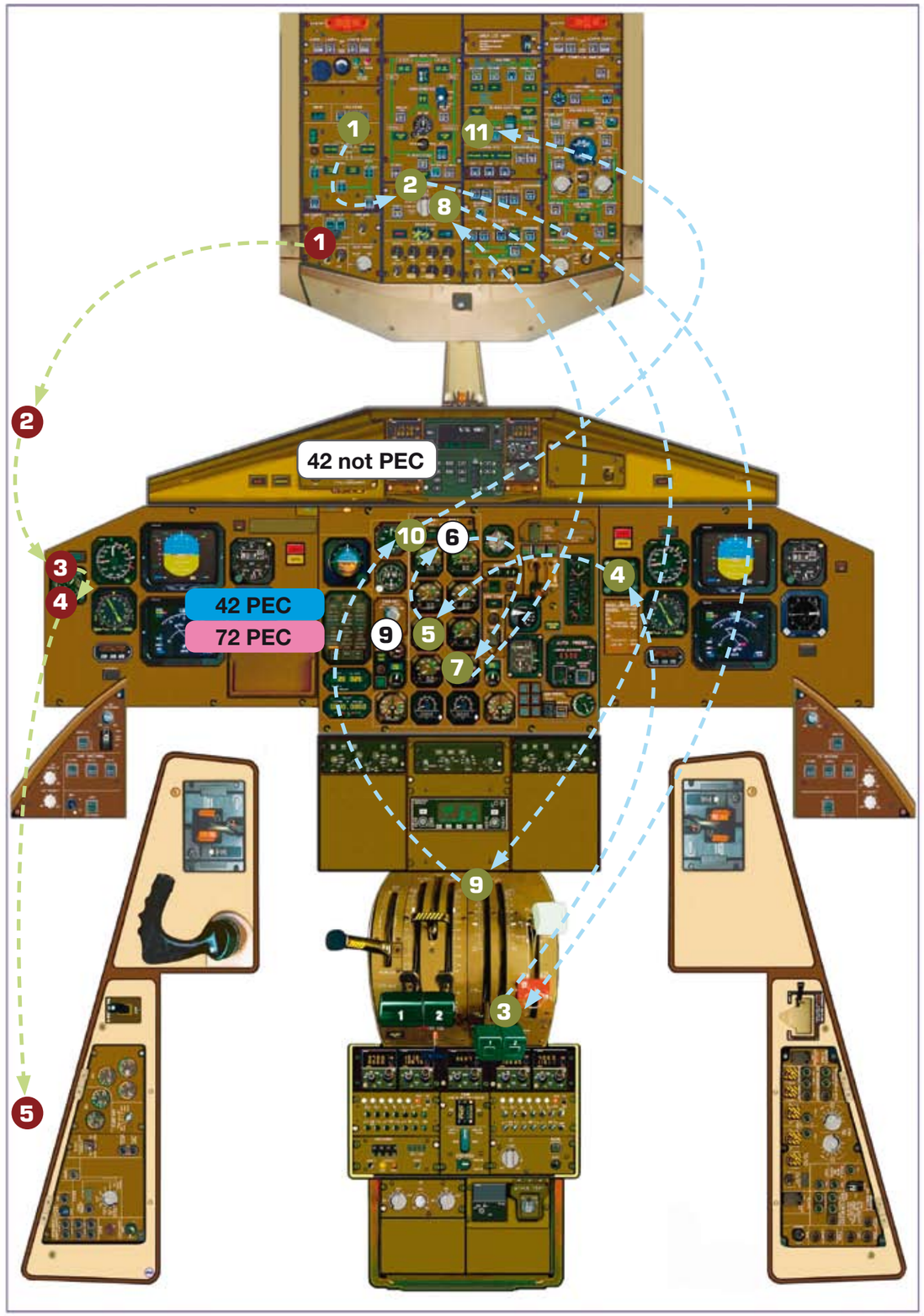
9 FLAPS 15°: SELECTED

ALL ATR

PERSONAL NOTES

PERSONAL NOTES

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.
START PB.

4 TIMING: STOP
Stop timing when STARTER 1 extinguish.

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 exinguishes, announce "ECU ON".

7 ENGINE PARAMETERS: MONITOR
OIL PRESS needle increases, announce "OIL PRESS"
At 45% NH, announce "45%"
Stop timing, if "STARTER OFF" call out has been received.

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

(9) PEC SINGLE CHANNEL TEST: CHECK
Check SGL CH illuminated then extinguished.

10 LO PITCH LIGHT: ILLUMINATED

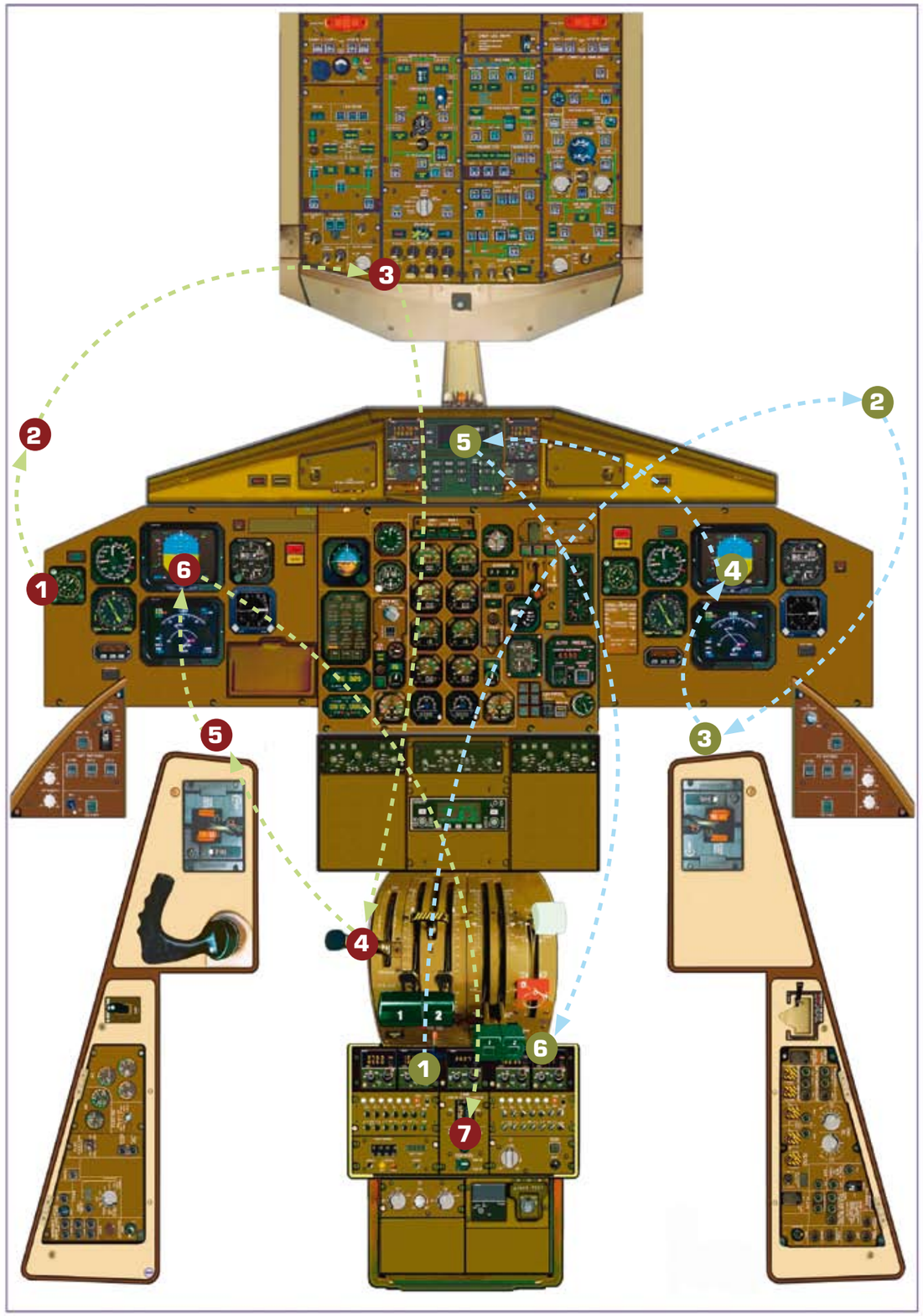
11 ACW GEN 1: ON LINE
Check ACW BTCs OPEN.

PERSONAL NOTES

3.8. Taxi

Flight events	CM1	CM2
READY TO TAXI	▶ORDER **"REQUEST TAXI CLEARANCE"**	▶DO TAXI CLEARANCE..... REQUESTED
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	▶DO BLOCK TIME.....ANNOUNCED SAFETY.....CHECK LEFT SIDE LEFT SIDE AREA.....CLEAR TAXI & T/O LIGHT.....ON PARKING BRAKE..... RELEASED	▶DO SAFETY.....CHECK RIGHT SIDE RIGHT SIDE AREA .....CLEAR
	***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	▶ORDER **"TAXI PROCEDURE"** ▶DO INSTRUMENTS.....CHECK* RUDDER CAM ..... Centered ** CHECK HEADING, BEARINGS, HORIZON / RMI*	▶DO INSTRUMENTS.....CHECK* HDG MODE..... SELECTED LO BANK ..... SELECTED IAS MODE..... SELECTED IAS.....V2 + 5 kt SET COUPLING .....PF SIDE T/O CONFIG TEST.....PERFORMED
WHEN PF AND PNF READY	**PF** ▶DO T/O BRIEFING.....PERFORMED *Refer to 01.03 p. 37, **take-off briefing**.*	
AFTER PF TAKE-OFF BRIEFING		▶ANNOUNCE **"TAXI PROCEDURE COMPLETE"**
WHEN TAXI PROCEDURE COMPLETE	▶REQUEST AND ANSWER **"TAXI CHECKLIST"**	▶ANNOUNCE AND READ **"TAXI CHECKLIST"** *Refer to QRH 6.01* ▶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 confort, 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.

PERSONAL NOTES

3.9. Before take-off

Flight events	CM1	CM2
APPROACHING HOLDING POINT AND CABIN OK RECEIVED	▶ORDER **"BEFORE TAKE-OFF PROCEDURE"** ▶DO FLT CTL.....SPOILER & RUDDER	▶DO TCAS..... AUTO XPDR..... ALT GUST LOCK..... RELEASED ▶DO FLT CTL..... ROLL / SPOILER FLT CTL..... PITCH
LINE-UP CLEARANCE RECEIVED	▶DO RECALL PB.....DEPRESSED* TO INHI..... DEPRESSED LAND LIGHTS / STROBE ..... ON ** Recall PB may be depressed before T/O INHI PB to make sure you will not take-off with degraded sytems.* ▶DO LATERAL FD BAR.....CENTERED (CHECK MAGNETIC RWY ORIENTATION)	▶DO WEATHER RADAR..... AS REQUIRED CONT RELIGHT ..... AS REQUIRED BLEED VALVES.....OFF AIR FLOW ..... NORM APM ROTARY SELECTOR (if installed)..... TO WEIGHT ▶DO LATERAL FD BAR.....CENTERED ▶ANNOUNCE **"BEFORE TAKE-OFF PROCEDURE COMPLETE"**
PROCEDURE COMPLETE	▶REQUEST AND ANSWER **"BEFORE TAKE-OFF CHECKLIST"**	▶ANNOUNCE AND READ **"BEFORE TAKE-OFF CHECKLIST"** *Refer to QRH 6.01* ▶ANNOUNCE **"CHECKLIST COMPLETE"**

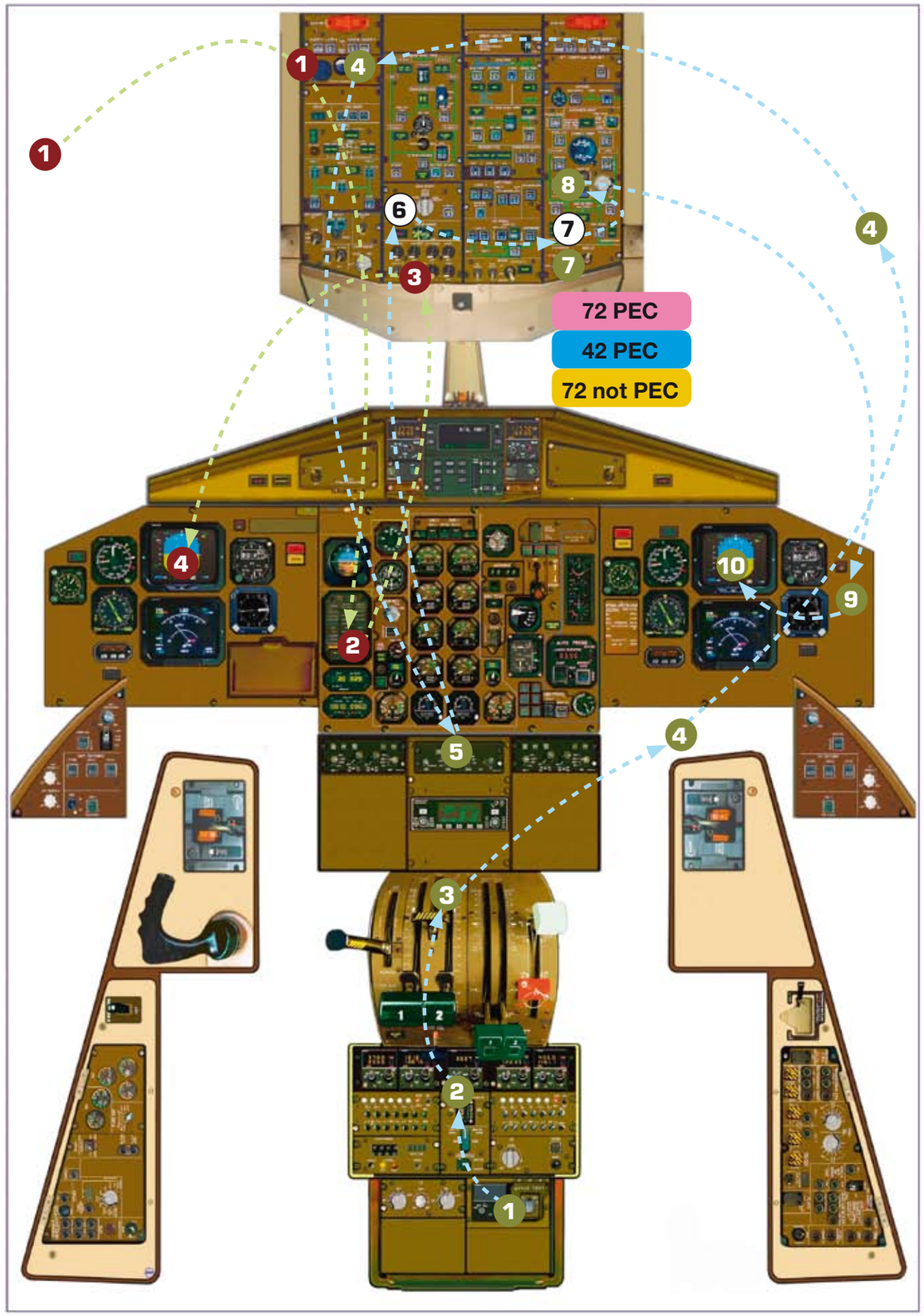
PERSONAL NOTES

72 PEC
42 PEC
72 not PEC

3.9. Before take-off

Flight events	CM1	CM2
APPROACHING HOLDING POINT AND CABIN OK RECEIVED	▶ORDER **"BEFORE TAKE-OFF PROCEDURE"** ▶DO FLT CTL..... SPOILER & RUDDER	▶DO TCAS..... AUTO XPDR..... ALT GUST LOCK..... RELEASED ▶DO FLT CTL..... ROLL / SPOILER FLT CTL..... PITCH
LINE-UP CLEARANCE RECEIVED **72 PEC** **42 PEC**	▶DO RECALL PB..... DEPRESSED* TO INHI..... DEPRESSED LAND LIGHTS / STROBE..... ON ** Recall PB may be depressed before T/O INHI PB to make sure you will not take-off with degraded sytems.* ▶DO LATERAL FD BAR..... CENTERED (CHECK MAGNETIC RWY ORIENTATION)	▶DO WEATHER RADAR..... AS REQUIRED BLEED VALVES..... AS REQUIRED AIR FLOW..... NORM APM ROTARY SELECTOR (if installed)..... TO WEIGHT ▶DO LATERAL FD BAR..... CENTERED ▶ANNOUNCE **"BEFORE TAKE-OFF PROCEDURE COMPLETE"**
LINE-UP CLEARANCE RECEIVED **72 not PEC**	▶DO RECALL PB..... DEPRESSED* TO INHI..... DEPRESSED LAND LIGHTS / STROBE..... ON ** Recall PB may be depressed before T/O INHI PB to make sure you will not take-off with degraded sytems.* ▶DO LATERAL FD BAR..... CENTERED (CHECK MAGNETIC RWY ORIENTATION)	▶DO WEATHER RADAR..... AS REQUIRED CONT RELIGHT..... AS REQUIRED BLEED VALVES..... AS REQUIRED AIR FLOW..... NORM APM ROTARY SELECTOR (if installed)..... TO WEIGHT ▶DO LATERAL FD BAR..... CENTERED ▶ANNOUNCE **"BEFORE TAKE-OFF PROCEDURE COMPLETE"**
PROCEDURE COMPLETE	▶REQUEST AND ANSWER **"BEFORE TAKE-OFF CHECKLIST"**	▶ANNOUNCE AND READ **"BEFORE TAKE-OFF CHECKLIST"** *Refer to QRH 6.01* ▶ANNOUNCE **"CHECKLIST COMPLETE"**

BEFORE TAKE-OFF FLOW



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

(7) BLEED VALVES: ON or OFF

8 AIR FLOW: AS REQUIRED

Once aligned:

9 APM ROTARY SELECTOR: TAKE-OFF WEIGHT
Set the TOW on the rotactor
Even if it is the same weight the rotactor 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.

10 LATERAL FD BARS: CENTERED
To check that runway heading is correct.

PERSONAL NOTES

3.10. Take-off

Flight events	CM1	CM2
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"	▶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 "ATPCS ARMED POWER SET"
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"	▶ANNOUNCE "70 KTS"

Flight events	PNF	PF
FLIGHT CONTROLS TRANSFER		▶ANNOUNCE "I HAVE CONTROL"
REACHING V1	▶ANNOUNCE "V1"	
	CM1 ▶DO PLs ..... RELEASED	
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 & T/O LIGHT.....OFF	▶ORDER "GEAR UP"
WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL	▶ANNOUNCE "GEAR UP"	

42 not PEC

PERSONAL NOTES

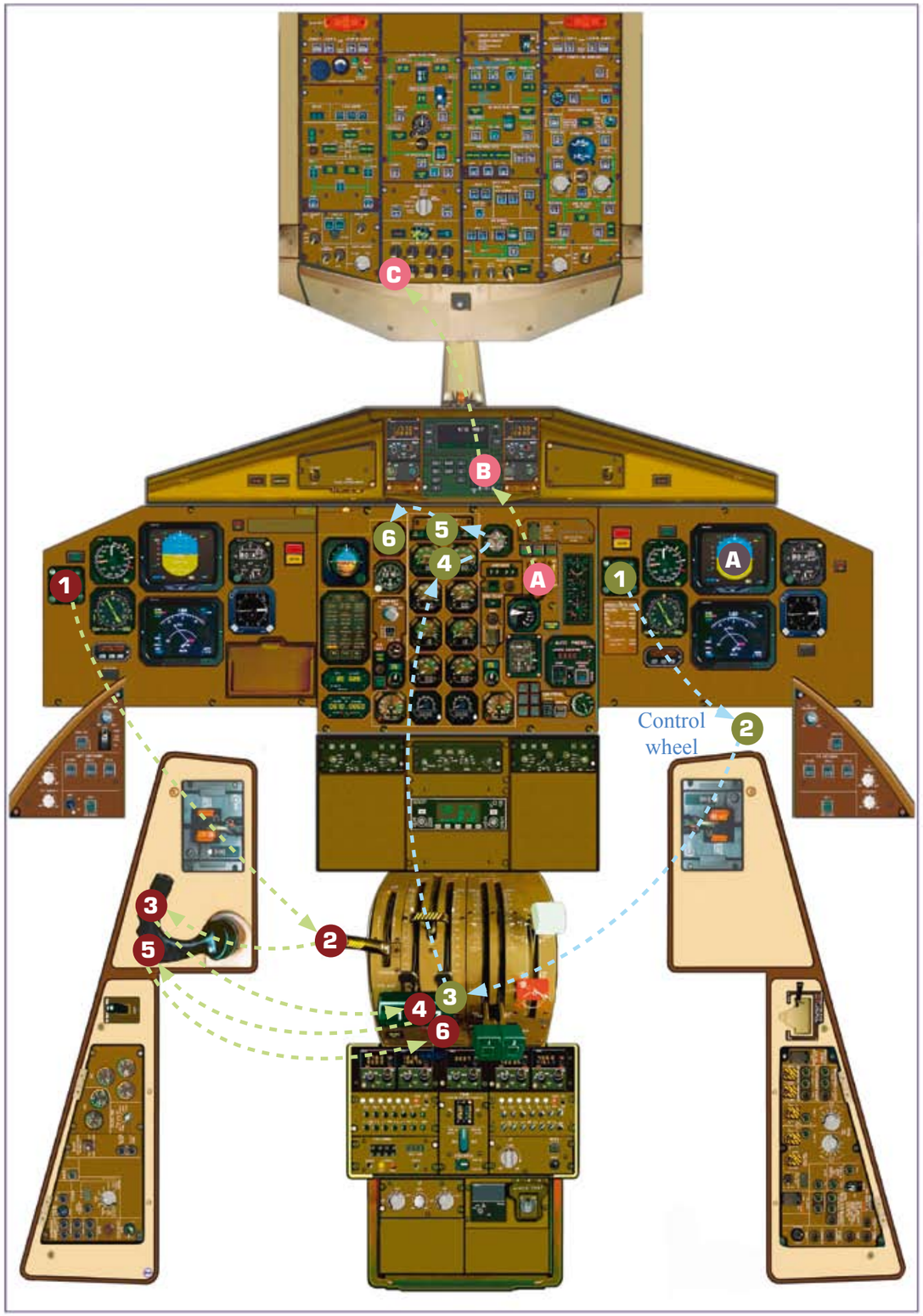
72 PEC
42 PEC
72 not PEC

3.10. Take-off

Flight events	CM1	CM2
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"	▶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"
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"	▶ANNOUNCE "70 KTS"

Flight events	PNF	PF
FLIGHT CONTROLS TRANSFER		▶ANNOUNCE "I HAVE CONTROL"
REACHING V1	▶ANNOUNCE "V1"	
	CM1 ▶DO PLs ..... RELEASED	
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 & T/O LIGHT.....OFF	▶ORDER "GEAR UP"
WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL	▶ANNOUNCE "GEAR UP"	

TAKE-OFF FLOW



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

A LANDING GEAR LEVER: UP

B YAW DAMPER: ON
Check white lights illuminated.

C TAXI & TO. LIGHT: OFF

CM2

1 TIMING: START

2 CONTROL WHEEL: HOLD TOWARD WIND

3+4 TAKE-OFF TORQUES: ADJUSTED/CHECK
By acting on PLs, adjust/check torque needles to white bug, check Np=100%.

5 ATPCS LIGHT: ARM ILLUMINATED
Check ARM green light illuminated.

6 IAS: MONITOR
At 70 Kt, announce “70 KT”. READ ON STBY ASI

PF

A FD BARS: FOLLOWED

PERSONAL NOTES

3.11. Climb sequence

Flight events	PNF	PF
REACHING ACCELERATION ALTITUDE **NOTE**: MINI 400 FT AGL OR HIGHER IF REQUESTED	▶**ANNOUNCE** **"ACCELERATION ALTITUDE"** ▶**DO** IAS..... INCREASED (ABOVE WHITE BUG) PL..... CHECK IN WHITE MARKS PWR MGT ..... CLIMB CLs ..... WHITE MARK BLEEDS..... ON IAS..... 160 KT SET CL..... ADJUST NP 86 % PLs ..... ADJUST TORQUE TO AMBER BUGS CONT RELIGHT ..... AS REQUIRED ▶**ANNOUNCE** **"CLIMB SEQUENCE COMPLETE"**	▶**DO** RETARD PL ..... WHITE MARKS* ▶**ORDER** **"CLIMB SEQUENCE"**

** In order to prevent over torques, PF retards PLs prior to reducing CLs.*

3.11. Climb sequence

Flight events	PNF	PF
REACHING ACCELERATION ALTITUDE **NOTE**: MINI 400 FT AGL OR HIGHER IF REQUESTED	▶**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"**	▶**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.*

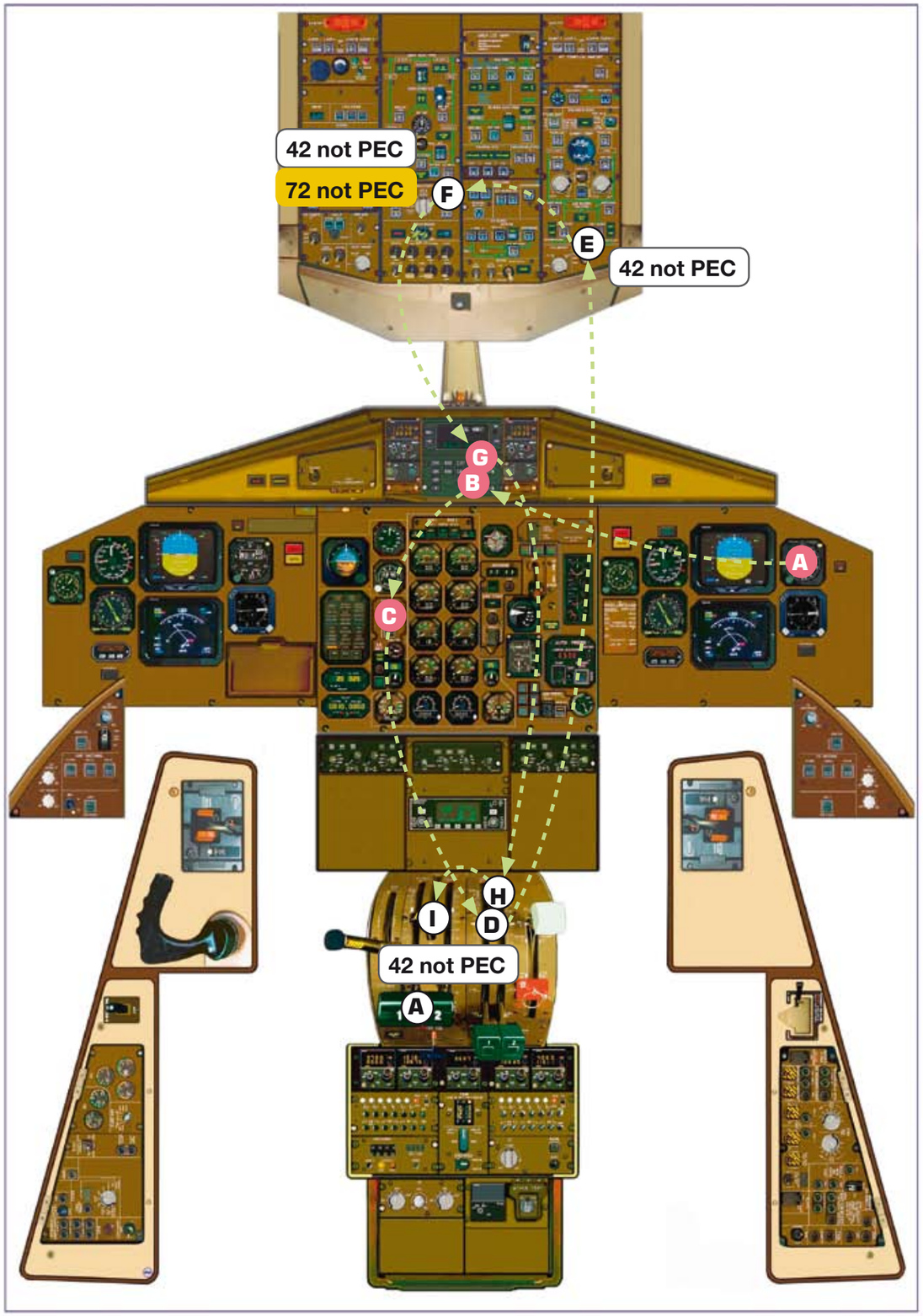
72 not PEC

3.11. Climb sequence

Flight events	PNF	PF
REACHING ACCELERATION ALTITUDE **NOTE**: MINI 400 FT AGL OR HIGHER IF REQUESTED	▶**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"**	▶**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.*

CLIMB SEQUENCE FLOW



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

(A) POWER LEVERS: TQ MINUS 10%
Retard PL at Acceleration altitude

ALL ATR

PERSONAL NOTES

ALL ATR

3.12. After take-off

Flight events	PNF	PF
REACHING WHITE OR RED BUG (ACCORDING TO EXTERNAL CONDITIONS)	▶ANNOUNCE **"WHITE BUG"** *NORMAL CONDITIONS* **"RED BUG"** *ICING CONDITIONS* ▶DO FLAPS LEVER..... SET TO 0	▶ORDER **"FLAPS 0"**
WHEN FLAPS AT 0 ON THE FLAPS INDICATOR	▶ANNOUNCE **"FLAPS 0"**	
REACHING WHITE OR RED BUG + 10 (ACCORDING TO EXTERNAL CONDITIONS)	▶ANNOUNCE **"WHITE BUG + 10"** *NORMAL CONDITIONS* **"RED BUG + 10"** *ICING CONDITIONS* ▶DO HI BANK ..... SET ▶ANNOUNCE **"HIGH BANK SET"** ▶DO, ANNOUNCE **"SET"**	▶ORDER **"SET HIGH BANK"** ▶ANNOUNCE **"CHECK"** ▶ORDER, DO **"SPEED BUG 160 / 170 KT"*** ** 160 kt for 42, 170 kt for 72*
WHEN CLEARED FOR A FLIGHT LEVEL OR PASSING TRANSITION ALTITUDE	▶DO ALTIMETER.....STANDARD SET ▶ANNOUNCE **"STANDARD SET"** ▶ANNOUNCE **"CHECK"** **OR** **''PLUS OR MINUS XXX''** *if deviation > 50 Ft check altimeter setting* *if deviation < 50 Ft altimeter setting is correct.*	▶ORDER **"SET ALTI STANDARD"** ▶DO ALTIMETER.....STANDARD SET ▶ANNOUNCE **"PASSING FL XXX, NOW!"**
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* ▶ANNOUNCE **"CHECKLIST COMPLETE"**	▶REQUEST AND ANSWER **"AFTER TAKE-OFF C/L"**

3.13. FL100 during climb

Flight events	PNF	PF
CROSSING FL 100 CLIMBING	▶**DO** PRESSURIZATION ..... CHECK *(cabin VS, cabin altitude, P)* LANDING LIGHTS ..... OFF PAX SEAT BELTS ..... AS REQUIRED	▶**ORDER** **"FL 100"** ***No Checklist for FL 100***

3.14. Cruise

Flight events	PNF	PF
1000 FT BEFORE CRUISE FL	▶**DO** SAT ..... CHECK DELTA ISA ..... COMPUTE CRUISE PARAMETERS ..... DETERMINED AND NOTED	▶**ORDER** **"COMPUTE CRUISE PARAMETERS"**
ALT STAR ON PF EADI	▶**ANNOUNCE** **"CHECK"**	▶**ANNOUNCE** **"ALT STAR"** *read on FMA*
ALT GREEN ON PF EADI	▶**ANNOUNCE** **"CHECK"** ▶**DO** SPEED BUG ..... SET ▶**DO AND ANNOUNCE** TORQUE BUGS ..... SET **"SET"**	▶**ANNOUNCE** **"ALT GREEN"** *read on FMA* ▶**ORDER AND SET** **"SPEED BUG...KT"**
REACHING CRUISE SPEED **42 not PEC**	▶**DO** POWER MANAGEMENT ..... CRZ TORQUES ..... ADJUSTED TO AMBER BUG CRUISE PARAMETERS ..... CHECK *Note: check actual IAS, TAS versus predetermined values.* ▶**ANNOUNCE** **"CRUISE PROCEDURE COMPLETE"**	▶**ANNOUNCE** **"CRUISE PROCEDURE"**
REACHING CRUISE SPEED **72 not PEC** **42 PEC** **72 PEC**	▶**DO** POWER MANAGEMENT ..... CRZ CRZ TQ ..... CHECK CRUISE PARAMETERS ..... CHECK *Note: check actual IAS, TAS versus predetermined values.* ▶**ANNOUNCE** **"CRUISE PROCEDURE COMPLETE"**	▶**ANNOUNCE** **"CRUISE PROCEDURE"**
DURING CRUISE	▶**DO** FILL THE FLIGHT LOG	▶**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?

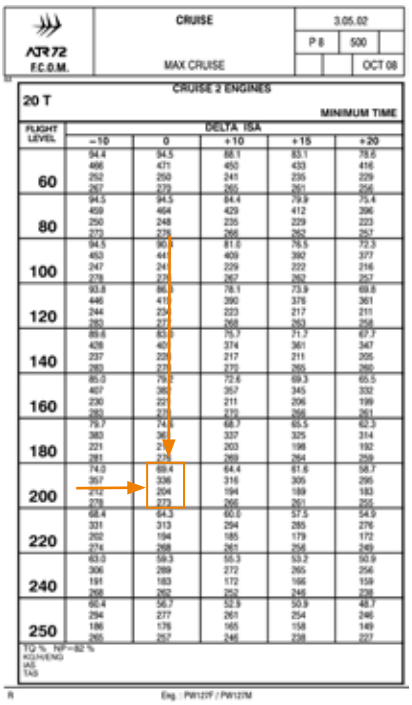
In standard ISA conditions, temperature at sea level is 15°C and decreases by 2°C each 1000ft.
FL200 standard temperature = 15°C –20x2°C = –25°C

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?


ATR72 F.C.O.M. — CRUISE — MAX CRUISE — 3.05.02 — P 8 — 500 — OCT 08

CRUISE 2 ENGINES — 20 T — MINIMUM TIME

FLIGHT LEVEL	DELTA ISA −10	0	+10	+15	+20
60	94.4 / 466 / 252 / 267	94.5 / 471 / 250 / 273	88.1 / 450 / 241 / 265	83.1 / 433 / 235 / 261	78.6 / 416 / 229 / 256
80	94.3 / 459 / 250 / 273	94.5 / 464 / 248 / 276	84.4 / 429 / 235 / 266	79.9 / 412 / 229 / 263	75.4 / 396 / 223 / 257
100	94.5 / 453 / 247 / 278	90.0 / 441 / 241 / 275	81.8 / 409 / 229 / 267	76.5 / 392 / 222 / 262	72.3 / 377 / 216 / 257
120	93.8 / 446 / 244 / 283	86.0 / 419 / 234 / 277	78.1 / 390 / 223 / 268	73.9 / 376 / 217 / 263	69.8 / 361 / 211 / 258
140	89.6 / 428 / 237 / 280	83.6 / 407 / 229 / 278	75.7 / 374 / 217 / 270	71.7 / 361 / 211 / 265	67.7 / 347 / 205 / 260
160	85.0 / 407 / 230 / 280	79.8 / 388 / 221 / 278	72.6 / 357 / 211 / 270	69.3 / 345 / 206 / 266	65.5 / 332 / 199 / 261
180	79.7 / 383 / 221 / 281	74.8 / 361 / 212 / 279	68.7 / 337 / 203 / 269	65.5 / 325 / 198 / 264	62.3 / 314 / 192 / 259
200	74.0 / 357 / 212 / 278	69.4 / 336 / 204 / 277	64.4 / 316 / 194 / 266	61.6 / 305 / 189 / 261	58.7 / 295 / 183 / 255
220	68.4 / 331 / 202 / 274	64.3 / 313 / 194 / 268	60.0 / 294 / 185 / 261	57.5 / 285 / 179 / 256	54.9 / 276 / 172 / 249
240	63.0 / 306 / 191 / 268	59.3 / 289 / 183 / 262	55.3 / 272 / 172 / 252	53.2 / 265 / 166 / 246	50.9 / 256 / 159 / 238
250	60.4 / 294 / 186 / 265	56.7 / 277 / 176 / 257	52.9 / 261 / 165 / 246	50.9 / 254 / 158 / 238	48.7 / 246 / 149 / 227

TQ % NP=82 % KG/H/ENG IAS TAS

Eng : PW127F / PW127M

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.*

ALL ATR

3.15. Before descent

Flight events	PNF	PF
LANDING DATA AVAILABLE (APPROX. 10 MIN BEFORE TOD)	▶DO LANDING AIRPORT DATA .....OBTAINED ▶DO LANDING DATA CARD..... FILLED STBY QNH.....SET ▶DO GA TQ BUGS ..... CHECKED SPEED BUGS.....SET DA or MDA .....SET	▶DO LANDING DATA CARD..... PROCESSED *Refer to 01.03 p. 34, **data card proceeding**.* ▶ORDER AND DO GA TQ BUGS .....SET SPEED BUGS.....SET DA or MDA .....SET NAV AIDS.....SET CCAS..... RECALL* *Note: Crew review all aircraft status, due to Emer or Abnormal situation, in preparation for arrival briefing*
BEFORE DESCENT (APPROX. 5 MIN BEFORE TOD)		▶DO ARRIVAL BRIEFING.....PERFORMED CCAS.....CLEAR *Refer to 01.03 p 38, **arrival briefing**.*
ARRIVAL BRIEFING COMPLETE (AFTER TOD)	▶ANNOUNCE AND READ **"DESCENT CHECKLIST"** *Refer to QRH 6.01* ▶ANNOUNCE **"CHECKLIST COMPLETE"**	▶REQUEST AND ANSWER **"DESCENT CHECKLIST"**

ALL ATR

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

Vapp computation

RWY HDG is 230°

- Wind reported 270° / 18kt
- So head wind component is 12kt

*Vapp=VmHB 30 + Wind factor **

** Wind factor is the highest value between:*
1/3 of reported Head Wind
or
The Gust in full

Wind factor maxi 15 kt

Vapp=95+1/3(12)=**99**

Vga computation

Is the highest value between:

1.1 Vmca
or
Vapp no wind + 5kt

Vapp computation

RWY HDG is 090°

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

*Vapp=VmHB 30 + Wind factor **

** Wind factor is the highest value between:*
1/3 of reported Head Wind -> here 20/3 -> 7kt
or
The Gust in full -> here 30-20 -> 10kt
Wind factor maxi 15 kt

Vapp=95+10=**105kts**

ATR 42 | OPS DATA | 4.37 | APR 04 | 001

14 t

	Speeds	Normal	Icing
NON LIMITING RWY TAKE-OFF FLAPS 15	V1 = VR V2	92 99	100 107
FINAL TAKE OFF		119 (Flaps 0)	118 (Flaps 15)
DRIFT DOWN	VmLB	119 (Flaps 0)	118 (Flaps 15)
MINI EN ROUTE			138 (Flaps 0)
FINAL APPROACH	VmHB (Flaps 30)	95	112

Normal conditions

Icing conditions

For speed bugs setting please refer to 01.03 p. 20, ***Speed bugs****.*

ALL ATR

3.16. FL 100 during descent

Flight events	PNF	PF
CROSSING FL 100 DESCENDING	▶DO PRESSURIZATION ..... CHECK LANDING LIGHTS ..... ON SEAT BELTS ..... ON	▶ORDER **"FL 100"** *No Checklist for FL 100*

3.17. Approach

Flight events	PNF	PF
WHEN CLEARED TO AN ALTITUDE OR PASSING TRANSITION LEVEL	▶DO AND ANNOUNCE **"XXXX SET"** *(Check also the standby altimeter setting)* ▶ANNOUNCE **"CHECK"** **OR** **''PLUS OR MINUS XXXX''** *if deviation > 50 Ft check altimeter setting* *if deviation < 50 Ft altimeter setting is correct.*	▶ORDER AND DO **"SET QNH"** ▶ANNOUNCE **"PASSING XXXX FT, NOW!"**
PROCEDURE COMPLETE	▶ANNOUNCE & READ **"APPROACH CHECKLIST"** *Refer to QRH 6.01* ▶ANNOUNCE **"CHECKLIST COMPLETE"**	▶REQUEST AND ANSWER **"APPROACH CHECKLIST"**

3.18. Before landing

Stabilization policy

STABILIZED means:
- Aircraft configurated for Landing
- Flight Path and Speed appropriate
- Checklist before Landing complete

FLIGHT EVENT	FLIGHT EVENT	PNF ANNOUNCES	PF ACTIONS	NOTES
1000 FT AGL IMC	STABILIZED	**"XXXX FT, STABILIZED"**	**ORDER: "WE CONTINUE"**	**"XXXX FT"**: ANNOUNCED ALTITUDE WILL BE **Zx + 1000 FT** OR **Zx + 500 FT** OR **Zx + 300 FT** ACCORDING TO WEATHER CONDITIONS
	NON STABILIZED	**"XXXX FT, NON STABILIZED"**	**ORDER: "GO-AROUND"**	
500 FT AGL VMC*	STABILIZED	**"XXXX FT, STABILIZED"**	**ORDER: "WE CONTINUE""**	
	NON STABILIZED	**"XXXX FT, NON STABILIZED"**	**ORDER: "GO-AROUND"**	
300 FT AGL CIRCLE TO LAND AND VISUAL PATTERN	STABILIZED	**"XXXX FT, STABILIZED"**	**ORDER: "WE CONTINUE""**	
	NON STABILIZED	**"XXXX FT, NON STABILIZED"**	**ORDER: "GO-AROUND"**	

72 PEC

72 not PEC

42 not PEC

3.18.1. ILS precision approach (1/2)

Flight events	PNF	PF
CLEARED FOR APPROACH	▶ANNOUNCE "CHECK"	▶DO APP MODE..... ENGAGED ▶ANNOUNCE "APPROACH MODE SET LOC WHITE, GS WHITE"
VOR ALIVE	▶ANNOUNCE "VOR ALIVE"	
LOC STAR (RWY AXIS IS CONFIRMED WHEN VOR IS CENTERED AND / OR RMI NEEDLE ON FINAL CRS)	▶ANNOUNCE "CHECK" "RWY AXIS CONFIRMED" ▶DO AND ANNOUNCE "RUNWAY HEADING SET, DUAL ILS SET"	▶ANNOUNCE "LOC STAR" ▶ORDER "SET RUNWAY ~~HEADING~~, DUAL ILS"
G/S ALIVE	▶ANNOUNCE "GLIDE SLOPE ALIVE" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 15 ..... SELECTED	▶ORDER "FLAPS 15"
WHEN FLAPS 15 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 15" ▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG WHITE BUG + 10"
G/S 1 DOT	▶ANNOUNCE "ONE DOT" ▶ANNOUNCE "SPEED CHECK" ▶DO LANDING GEAR LEVER..... DOWN PWR MGT ..... T/O TAXI & T/O LIGHTS ..... ON	▶ORDER "GEAR DOWN"
WHEN 3 GREEN LIGHTS	▶ANNOUNCE "LDG GEAR DOWN"	
G/S 1/2 DOT 42 not PEC 72 not PEC 72 PEC	▶ANNOUNCE "HALF DOT" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 30 ..... SELECTED	▶ORDER "FLAPS 30"
WHEN FLAPS 30 ON FLAPS INDICATOR 42 not PEC 72 not PEC 72 PEC	▶ANNOUNCE "FLAPS 30" ▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG V APPROACH"

3.18.1. ILS precision approach (1/2)

Flight events	PNF	PF
CLEARED FOR APPROACH	▶ANNOUNCE "CHECK"	▶DO APP MODE..... ENGAGED ▶ANNOUNCE "APPROACH MODE SET LOC WHITE, GS WHITE"
VOR ALIVE	▶ANNOUNCE "VOR ALIVE"	
LOC STAR (RWY AXIS IS CONFIRMED WHEN VOR IS CENTERED AND / OR RMI NEEDLE ON FINAL CRS)	▶ANNOUNCE "CHECK" "RWY AXIS CONFIRMED" ▶DO AND ANNOUNCE "RUNWAY HEADING SET, DUAL ILS SET"	▶ANNOUNCE "LOC STAR" ▶ORDER "SET RUNWAY ~~HEADING~~, DUAL ILS"
G/S ALIVE	▶ANNOUNCE "GLIDE SLOPE ALIVE" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 15 ..... SELECTED	▶ORDER "FLAPS 15"
WHEN FLAPS 15 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 15" ▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG WHITE BUG + 10"
G/S 1 DOT	▶ANNOUNCE "ONE DOT" ▶ANNOUNCE "SPEED CHECK" ▶DO LANDING GEAR LEVER..... DOWN PWR MGT ..... T/O TAXI & T/O LIGHTS ..... ON	▶ORDER "GEAR DOWN"
WHEN 3 GREEN LIGHTS	▶ANNOUNCE "LDG GEAR DOWN" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 25 ..... SELECTED	▶ORDER "FLAPS 25"
WHEN FLAPS 25 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 25"	
G/S 1/2 DOT	▶ANNOUNCE "HALF DOT" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 35 ..... SELECTED	▶ORDER "FLAPS 35"
WHEN FLAPS 35 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 35" ▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG V APPROACH"

42 PEC

3.18.1. ILS precision approach (2/2)

Flight events	PNF	PF
G/S STAR 72 PEC 42 PEC	▶DO AND ANNOUNCE "CHECK" ▶DO AND ANNOUNCE ADU ..... G.A. ALTITUDE SET "XXXX FT SET" ▶ANNOUNCE "TOP OF DESCENT XX DME, CHECK"	▶ANNOUNCE AND ORDER "GLIDE STAR, ▶ORDER SET GO-AROUND ALTITUDE" ▶ANNOUNCE "CHECK"
G/S STAR 42 not PEC 72 not PEC	▶DO AND ANNOUNCE "CHECK" ▶DO AND ANNOUNCE CL'S.....ADVANCED TO MAX ADU ..... G.A. ALTITUDE SET "MAX RPM, XXXX FT SET" ▶ANNOUNCE "TOP OF DESCENT XX DME, CHECK"	▶ANNOUNCE AND ORDER "GLIDE STAR, ▶ANNOUNCE 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"	▶REQUEST AND ANSWER "BEFORE LANDING CHECKLIST"
WHEN C/L COMPLETE	▶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 DA + 500 FT	▶ANNOUNCE "FIVE HUNDRED ABOVE"	
REACHING DA + 100 FT	▶ANNOUNCE "ONE HUNDRED ABOVE"	
REACHING DA	▶ANNOUNCE "MINIMUM"	▶ANNOUNCE "LAND" OR "GO-AROUND"

Deviations and limits

Height

General	± 100 Ft
Beginning of go-around	+ 50 Ft
At decision height	0 Ft

Tracking

On radial	± 5 °
Precision approach	half deviation of LOC and GS, according to altitude

Speed

Both engines	+ 5 Kt / – 0 Kt
One engine	+ 10 Kt / – 0 Kt

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	PNF	PF
CLEARED FOR APPROACH	▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG 160 KT"
4 NM BEFORE DESCENT POINT OR 2 MINUTES FROM DESCENT POINT (IF NO DME AVAILABLE)	▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 15 ..... SELECTED	▶ORDER "FLAPS 15"
WHEN FLAPS 15 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 15" ▶DO AND ANNOUNCE "SET" ▶ANNOUNCE "SPEED CHECK" ▶DO LANDING GEAR LEVER ..... DOWN PWR MGT ..... T/O TAXI & T/O LIGHTS ..... ON	▶ORDER AND DO "SPEED BUG WHITE BUG + 10" ▶ORDER "GEAR DOWN"
WHEN 3 GREEN LIGHTS ON AT LEAST ONE LDG GEAR INDICATOR	▶ANNOUNCE "LDG GEAR DOWN" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 30 ..... SELECTED	▶ORDER "FLAPS 30"
WHEN FLAPS 30 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 30" ▶DO AND ANNOUNCE "SET" ▶DO AND ANNOUNCE "MAX RPM,GO-AROUND ALTITUDE SET" ** Go-around altitude setting:* *Set only if present altitude below GA altitude.* *If not set present altitude + 300 ft to avoid ALT** *Set GA altitude when passing GA alt -300 ft*	▶ORDER AND DO "SPEED BUG V APPROACH" ▶ORDER "MAX RPM, SET GO-AROUND ALTITUDE"
	▶ANNOUNCE "CHECK" ▶ANNOUNCE AND READ "BEFORE LANDING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"	▶DO AND ANNOUNCE "VS 0 FT/MIN SET" ▶REQUEST "BEFORE LANDING CHECKLIST"

72 not PEC

42 not PEC

3.18.2. Non precision approach (1/2)

Flight events	PNF	PF
CLEARED FOR APPROACH	▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG 160 KT"
4 NM BEFORE DESCENT POINT OR 2 MINUTES FROM DESCENT POINT (IF NO DME AVAILABLE)	▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 15 ..... SELECTED	▶ORDER "FLAPS 15"
WHEN FLAPS 15 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 15" ▶DO AND ANNOUNCE "SET" ▶ANNOUNCE "SPEED CHECK" ▶DO LANDING GEAR LEVER ..... DOWN PWR MGT ..... T/O TAXI & T/O LIGHTS ..... ON	▶ORDER AND DO "SPEED BUG WHITE BUG + 10" ▶ORDER "GEAR DOWN"
WHEN 3 GREEN LIGHTS ON AT LEAST ONE LDG GEAR INDICATOR	▶ANNOUNCE "LDG GEAR DOWN" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 25 ..... SELECTED	▶ORDER "FLAPS 25"
WHEN FLAPS 25 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 25" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 35 ..... SELECTED	▶ORDER "FLAPS 35"
WHEN FLAPS 35 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 35" ▶DO AND ANNOUNCE "SET" ▶DO AND ANNOUNCE "GO-AROUND ALTITUDE SET" ** Go-around altitude setting:* *Set only if present altitude below GA altitude.* *If not set present altitude + 300 ft to avoid ALT** *Set GA altitude when passing GA alt -300 ft* ▶DO AND ANNOUNCE "CHECK" ▶ANNOUNCE AND READ "BEFORE LANDING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"	▶ORDER AND DO "SPEED BUG V APPROACH" ▶ORDER "SET GO-AROUND ALTITUDE" ▶ORDER "VS 0 FT/MIN SET" ▶REQUEST "BEFORE LANDING CHECKLIST"

42 PEC

3.18.2. Non precision approach (1/2)

Flight events	PNF	PF
CLEARED FOR APPROACH	▶DO AND ANNOUNCE "SET"	▶ORDER AND DO "SPEED BUG 160 KT"
4 NM BEFORE DESCENT POINT OR 2 MINUTES FROM DESCENT POINT (IF NO DME AVAILABLE)	▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 15 ..... SELECTED	▶ORDER "FLAPS 15"
WHEN FLAPS 15 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 15" ▶DO AND ANNOUNCE "SET" ▶ANNOUNCE "SPEED CHECK" ▶DO LANDING GEAR LEVER ..... DOWN PWR MGT ..... T/O TAXI & T/O LIGHTS ..... ON	▶ORDER AND DO "SPEED BUG WHITE BUG + 10" ▶ORDER "GEAR DOWN"
WHEN 3 GREEN LIGHTS ON AT LEAST ONE LDG GEAR INDICATOR AND TLU GREEN LT ILLUMINATED	▶ANNOUNCE "LDG GEAR DOWN" ▶ANNOUNCE "SPEED CHECK" ▶DO FLAPS 30 ..... SELECTED	▶ORDER "FLAPS 30"
WHEN FLAPS 30 ON FLAPS INDICATOR	▶ANNOUNCE "FLAPS 30" ▶DO AND ANNOUNCE "SET" ▶DO AND ANNOUNCE ADU ..... G.A. ALTITUDE SET "GO-AROUND ALTITUDE SET" ** Go-around altitude setting:* *Set only if present altitude below GA altitude.* *If not set present altitude + 300 ft to avoid ALT** *Set GA altitude when passing GA alt –300 ft* ▶DO AND ANNOUNCE "CHECK" ▶ANNOUNCE AND READ "BEFORE LANDING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"	▶ORDER AND DO "SPEED BUG V APPROACH" ▶ORDER "SET GO-AROUND ALTITUDE" ▶ORDER "VS 0 FT/MIN SET" ▶REQUEST "BEFORE LANDING CHECKLIST"

3.18.2. Non precision approach (2/2)

Flight events	PNF	PF
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 TQ..... 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"	
REACHING MDA + 100 FT	▶ANNOUNCE "ONE HUNDRED ABOVE"	
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)

Flight events	PNF	PF
REACHING MDA	▶**ANNOUNCE** **"CHECK"**	▶**DO** ALT MODE.....SELECTED ▶**ANNOUNCE** **"ALT SET, ALT GREEN"**
AT LEVEL OFF	▶**DO** TIMING .....START ▶**ANNOUNCE** **"CHECK"**	▶**DO** PLs ..... around 40% HEADING MODE.....SELECTED HEADING BUG ± 45°.....SELECTED TIMING .....START ▶**ANNOUNCE** **"HDG MODE SET, HEADING XXX SET, START TIMING"**
30 SEC OUTBOUND	▶**ANNOUNCE** **"CHECK"**	▶**DO AND ANNOUNCE** HEADING BUG..... ON DOWNWIND **"HDG BUG XXX SET"**
DOWN WIND - ABEAM THRESHOLD	▶**DO** TIMING .....START	▶**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 CLs ..... MAX RPM ▶**ANNOUNCE** **"FLAPS 30, MAX RPM, BEFORE LANDING C/L COMPLETE"**	▶**ORDER** **"FLAPS 30, MAX RPM"**
300 FT AGL	▶**ANNOUNCE** **"XXXX FT, STABILIZED"**	▶**ORDER** **"WE CONTINUE"**
300 FT AGL	▶**ANNOUNCE** **"XXXX FT, NON STABILIZED"**	▶**ORDER** **"GO-AROUND"**

72 not PEC

42 not PEC

3.19. Circle to land (Cont'd)

Flight events	PNF	PF
REACHING MDA	▶ANNOUNCE "CHECK"	▶DO ALT MODE.....SELECTED ▶ANNOUNCE "ALT SET, ALT GREEN"
AT LEVEL OFF	▶DO TIMING .....START ▶ANNOUNCE "CHECK"	▶DO PLs ..... around 40% HEADING MODE.....SELECTED HEADING BUG ± 45°.....SELECTED TIMING .....START ▶ANNOUNCE "HDG MODE SET, HEADING XXX SET, START TIMING"
30 SEC OUTBOUND	▶ANNOUNCE "CHECK"	▶DO AND ANNOUNCE HEADING BUG..... ON DOWNWIND "HDG BUG XXX SET"
DOWN WIND - ABEAM THRESHOLD	▶DO TIMING .....START FLAPS 25 .....SELECTED ▶DO AND ANNOUNCE "FLAPS 25"	▶ANNOUNCE "FLAPS 25, START TIMING" ▶DO TIMING .....START
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 35 .....SELECTED ▶ANNOUNCE "FLAPS 35, BEFORE LANDING C/L COMPLETE"	▶ORDER "FLAPS 35"
300 FT AGL	▶ANNOUNCE "XXXX FT, STABILIZED"	▶ORDER "WE CONTINUE"
300 FT AGL	▶ANNOUNCE "XXXX FT, NON STABILIZED"	▶ORDER "GO-AROUND"

3.19. Circle to land (Cont'd)

Flight events	PNF	PF
REACHING MDA	▶ANNOUNCE "CHECK"	▶DO ALT MODE.....SELECTED ▶ANNOUNCE "ALT SET, ALT GREEN"
AT LEVEL OFF	▶DO TIMING .....START ▶ANNOUNCE "CHECK"	▶DO PLs ..... around 40% HEADING MODE.....SELECTED HEADING BUG ± 45°.....SELECTED ▶ANNOUNCE "HDG MODE SET, HEADING XXX SET, START TIMING"
30 SEC OUTBOUND	▶ANNOUNCE "CHECK"	▶DO AND ANNOUNCE HEADING BUG..... ON DOWNWIND "HDG BUG XXX SET"
DOWN WIND - ABEAM THRESHOLD	▶DO TIMING .....START	▶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, BEFORE LANDING C/L COMPLETE"	▶ORDER "FLAPS 30"
300 FT AGL	▶ANNOUNCE "XXXX FT, STABILIZED"	▶ORDER "WE CONTINUE"
300 FT AGL	▶ANNOUNCE "XXXX FT, NON STABILIZED"	▶ORDER "GO-AROUND"

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	PNF	PF
REACHING 1500 FT AAL	▶ANNOUNCE **"CHECK"** ▶ANNOUNCE **"CHECK"**	▶ANNOUNCE **"ALT STAR"** ▶ANNOUNCE **"ALT GREEN"** ▶DO TQs 40%
WHEN READY TO TURN	▶DO AND ANNOUNCE **''DOWNWIND HEADING SET"**	▶ORDER **"SET DOWNWIND HEADING"** *PF has to take into account the crosswind component to apply a correct drift.* ▶ANNOUNCE **"CHECK"**
DOWNWIND	▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 15 .....SELECTED ▶ANNOUNCE **"FLAPS 15"** ▶DO AND ANNOUNCE **''SET"**	▶ORDER **"FLAPS 15"** ▶ORDER **"SPEED BUG WHITE BUG +10"**
WHEN FLAPS SET TO 15°	▶ANNOUNCE **"SPEED CHECK"** ▶DO LANDING GEAR LEVER..... DOWN ▶ANNOUNCE **"GEAR DOWN"**	▶ORDER **"GEAR DOWN"**
ABEAM THRESHOLD	▶DO TIMING ..... START	▶DO TIMING ..... START *Outbound time = (H / 20) ±1" / ±1 kt of head/tailwind.*
REACHING OUTBOUND TIME	▶DO, ANNOUNCE **'RUNWAY HEADING SET, VS - 700 SET"**	▶ORDER **"SET RUNWAY HEADING, VS - 700"** ▶ANNOUNCE **"CHECK"**
RUNWAY IN SIGHT		▶ORDER **"FLIGHT DIRECTOR STANDBY"**
ON FINAL	▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 30 .....SELECTED CLs ..... MAX RPM	▶ORDER **"FLAPS 30, MAX RPM"**

72 not PEC

42 not PEC

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	PNF	PF
REACHING 1500 FT AAL	▶ANNOUNCE **"CHECK"** ▶ANNOUNCE **"CHECK"**	▶ANNOUNCE **"ALT STAR"** ▶ANNOUNCE **"ALT GREEN"** ▶DO TQs 40%
WHEN READY TO TURN	▶DO AND ANNOUNCE **''DOWNWIND HEADING SET"**	▶ORDER **"SET DOWNWIND HEADING"** *PF has to take into account the crosswind component to apply a correct drift.* ▶ANNOUNCE **"CHECK"**
DOWNWIND	▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 15 ..... SELECTED ▶ANNOUNCE **"FLAPS 15"** ▶DO AND ANNOUNCE **''SET"**	▶ORDER **"FLAPS 15"** ▶ORDER **"SPEED BUG WHITE BUG +10"**
ABEAM TOWER	▶ANNOUNCE **"SPEED CHECK"** ▶DO LANDING GEAR LEVER..... DOWN ▶ANNOUNCE **"GEAR DOWN"** ▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 25 ..... SELECTED ▶ANNOUNCE **"FLAPS 25"**	▶ORDER **"GEAR DOWN"** ▶ORDER **"FLAPS 25"**
ABEAM THRESHOLD	▶DO TIMING ..... START	▶DO TIMING ..... START *Outbound time = (H / 20) ±1" / ±1 kt of head/tailwind.*
REACHING OUTBOUND TIME	▶DO, ANNOUNCE **'RUNWAY HEADING SET, VS - 700 SET"**	▶ORDER **"SET RUNWAY HEADING, VS - 700"** ▶ANNOUNCE **"CHECK"**
RUNWAY IN SIGHT		▶ORDER **"FLIGHT DIRECTOR STANDBY"**
ON FINAL	▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 35 ..... SELECTED	▶ORDER **"FLAPS 35"**

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	PNF	PF
REACHING 1500 FT AAL	▶ANNOUNCE **"CHECK"** ▶ANNOUNCE **"CHECK"**	▶ANNOUNCE **"ALT STAR"** ▶ANNOUNCE **"ALT GREEN"** ▶DO TQs 40%
WHEN READY TO TURN	▶DO AND ANNOUNCE **''DOWNWIND HEADING SET"**	▶ORDER **"SET DOWNWIND HEADING"** *PF has to take into account the crosswind component to apply a correct drift.* ▶ANNOUNCE **"CHECK"**
DOWNWIND	▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 15 .....SELECTED ▶ANNOUNCE **"FLAPS 15"** ▶DO AND ANNOUNCE **''SET"**	▶ORDER **"FLAPS 15"** ▶ORDER **"SPEED BUG WHITE BUG +10"**
ABEAM TOWER	▶ANNOUNCE **"SPEED CHECK"** ▶DO LANDING GEAR LEVER..... DOWN ▶ANNOUNCE **"GEAR DOWN"**	▶ORDER **"GEAR DOWN"**
ABEAM THRESHOLD	▶DO TIMING ..... START	▶DO TIMING ..... START *Outbound time=(H / 20) ±1" / ±1 kt of head/tailwind.*
REACHING OUTBOUND TIME	▶DO, ANNOUNCE **'RUNWAY HEADING SET, VS - 700 SET"**	▶ORDER **"SET RUNWAY HEADING, VS - 700"** ▶ANNOUNCE **"CHECK"**
RUNWAY IN SIGHT		▶ORDER **"FLIGHT DIRECTOR STANDBY"**
ON FINAL	▶ANNOUNCE **"SPEED CHECK"** ▶DO FLAPS 30 .....SELECTED	▶ORDER **"FLAPS 30"**

3.20. Visual flight patterns (2/2)

Flight events	PNF	PF
WHEN FLAPS AT 30 ON FLAPS INDICATOR 42 not PEC 72 not PEC	▶ANNOUNCE "FLAPS 30, MAX RPM" ▶DO AND ANNOUNCE "SET" ▶ANNOUNCE AND READ "BEFORE LANDING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"	▶ORDER "SPEED BUG VAPP" ▶REQUEST AND ANSWER "BEFORE LANDING CHECKLIST"

Flight events	PNF	PF
WHEN FLAPS AT 35 ON FLAPS INDICATOR 42 PEC	▶ANNOUNCE "FLAPS 35" ▶DO AND ANNOUNCE "SET" ▶ANNOUNCE AND READ "BEFORE LANDING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"	▶ORDER "SPEED BUG VAPP" ▶REQUEST AND ANSWER "BEFORE LANDING CHECKLIST"

Flight events	PNF	PF
WHEN FLAPS AT 30 ON FLAPS INDICATOR 72 PEC	▶ANNOUNCE "FLAPS 30" ▶DO AND ANNOUNCE "SET" ▶ANNOUNCE AND READ "BEFORE LANDING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"	▶ORDER "SPEED BUG VAPP" ▶REQUEST AND ANSWER "BEFORE LANDING CHECKLIST"

Flight events	PNF	PF
300 FT AGL	▶ANNOUNCE "XXXX FT, STABILIZED"	▶ORDER "WE CONTINUE"
300 FT AGL	▶ANNOUNCE "XXXX FT, NON STABILIZED"	▶ORDER "GO-AROUND"

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

ALL ATR

3.21. Landing

Flight events	PNF	PF
WHEN PF DISCONNECTS AP (PRESS TWICE TO CANCEL CAVALRY CHARGE) Up to 160 ft (CAT I) and 80ft (CAT II)		▶ANNOUNCE **"AUTOPILOT OFF"**
RA INFORMATION	▶ANNOUNCE **"80" "50" "20"** ▶DO FLARE ..... PITCH MONITOR	▶DO PL..... FI
ON RUNWAY (BOTH LOW PITCH LIGHTS ILLUMINATED)	▶CHECK AND ANNOUNCE **"2 LOW PITCH"**	▶DO PL..... GI ▶DO PL..... REVERSE AS RQD
REACHING 70 KT	▶ANNOUNCE **"70 Kt "**	

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

ENGINES	LO PITCH LIGHTS	PNF ANNOUNCES	PF ACTION ON REVERSE
2 ENGINES	TWO ILLUMINATED	**"TWO LOW PITCH"**	NORMAL USE
	ONLY ONE ILLUMINATED	**"NO REVERSE"**	**NO USE**, MAXI YAW EFFECT
1 ENGINE	ONE ILLUMINATED	**"ONE LOW PITCH"**	**USE WITH CARE,** YAW EFFECT

Flight events	CM1	CM2
WHEN PNF CALLS 70 KT	▶ANNOUNCE **"I HAVE CONTROL"**	
FLIGHT CONTROL TRANSFER	▶DO STEERING CONTROL..... HOLD NORMAL BRAKES ..... APPLIED	▶DO CONTROL WHEEL.....HOLD INTO THE WIND

ALL ATR

3.22. Go-around

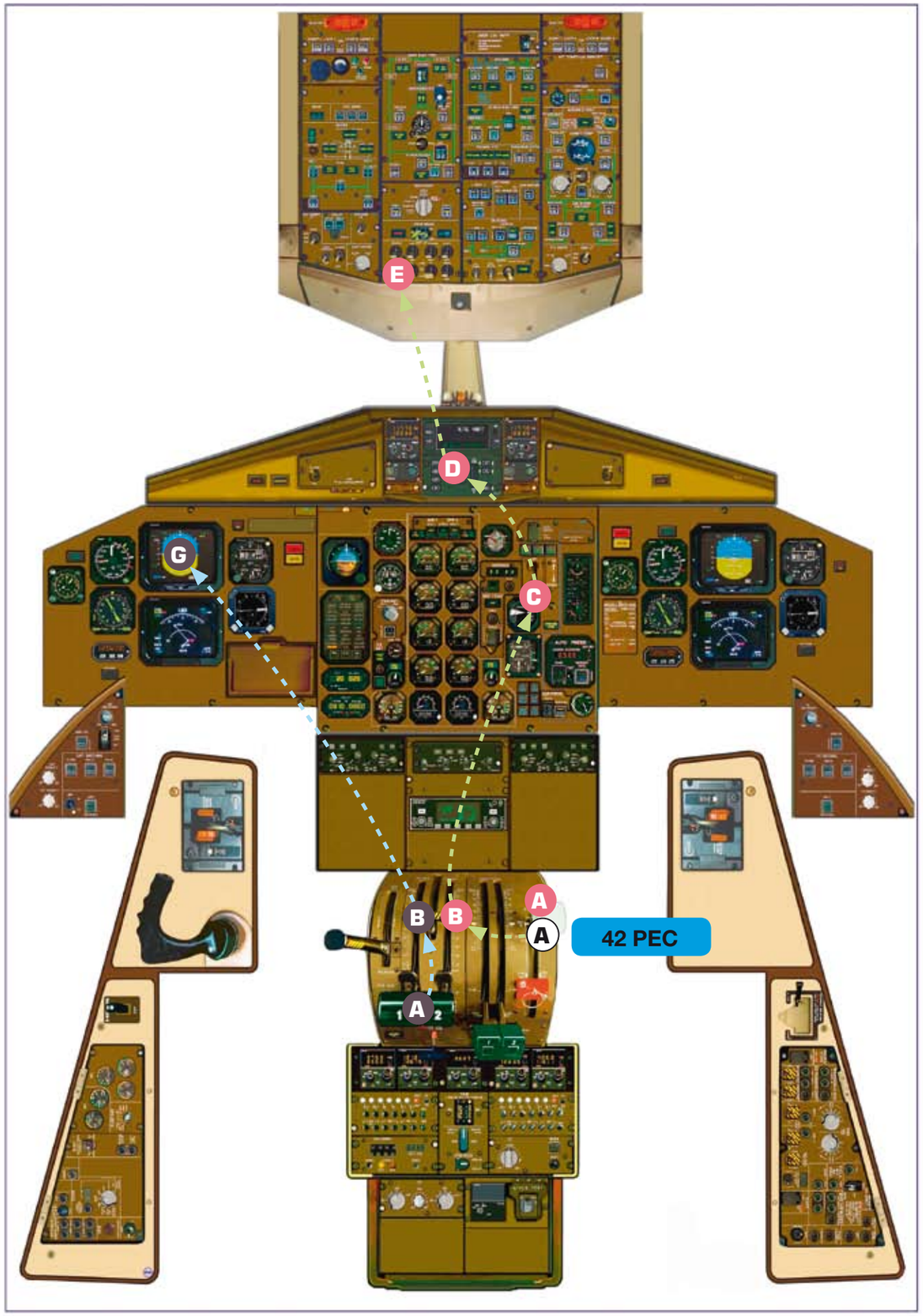
Flight events	PNF	PF
MINIMUM	▶ANNOUNCE "MINIMUM"	
DA OR MDA (RUNWAY OR RAMP NOT IN SIGHT) OR OTHER EVENTS UNEXPECTED 42 not PEC **WHEN FLAPS AT 15 ON THE FLAPS INDICATOR**	▶DO TQs.....CHECK / ADJUST GA FLAPS 15. ..... SELECTED ▶ANNOUNCE "FLAPS 15, POWER SET"	▶ANNOUNCE "GO-AROUND, SET POWER, FLAPS ONE 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 72 PEC **WHEN FLAPS AT 15 ON THE FLAPS INDICATOR**	▶DO TQs.....CHECK / ADJUST GA FLAPS 15. ..... SELECTED ▶ANNOUNCE "FLAPS 15, POWER SET"	▶ANNOUNCE "GO-AROUND, SET POWER, FLAPS ONE NOTCH" ▶DO GA PB ON PL ..... DEPRESSED ROTATE..... GA PITCH (+8° NOSE UP) PLs .....ADVANCED TO RAMP CAVALRY CHARGE .....CANCEL
POSITIVE RATE	▶ANNOUNCE "POSITIVE RATE" ▶DO GEAR LEVER..... UP HDG MODE..... SELECTED LO BANK ..... SELECTED IAS..... VGA SELECTED TAXI & T/O LIGHT..... OFF ▶ANNOUNCE "IAS XXX SET" ▶DO AND ANNOUNCE "SET"	▶ORDER "GEAR UP, HEADING, LOW BANK, IAS VGA" ▶ANNOUNCE "CHECK" ▶ORDER AND DO "SET SPEED BUG VGA"
WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL	▶ANNOUNCE "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 72 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	PNF	PF
MINIMUM	▶ANNOUNCE **"MINIMUM"**	
DA OR MDA (RUNWAY OR RAMP NOT IN SIGHT) OR OTHER EVENTS UNEXPECTED **WHEN FLAPS AT 25 ON THE FLAPS INDICATOR**	▶DO TQs.....CHECK / ADJUST GA FLAPS 25 ..... SELECTED ▶ANNOUNCE **"FLAPS 25, POWER SET"**	▶ANNOUNCE **"GO-AROUND, SET POWER, FLAPS ONE NOTCH"** ▶DO GA PB ON PL ..... DEPRESSED ROTATE..... GA PITCH (+8° NOSE UP) PLs .....ADVANCED TO RAMP CAVALRY CHARGE.....CANCEL
POSITIVE RATE	▶ANNOUNCE **"POSITIVE RATE"** ▶DO GEAR LEVER..... UP HDG MODE..... SELECTED LO BANK ..... SELECTED IAS..... VGA SELECTED TAXI & T/O LIGHT..... OFF ▶ANNOUNCE **"IAS XXX SET"** ▶DO AND ANNOUNCE **"SET"**	▶ORDER **"GEAR UP, HEADING, LOW BANK, IAS VGA"** ▶ANNOUNCE **"CHECK"** ▶ORDER AND DO **"SET SPEED BUG VGA"**
WHEN ALL LIGHTS EXTINGUISHED ON THE LDG GEAR PANEL	▶ANNOUNCE **"GEAR UP"**	
REACHING ACCELERATION ALTITUDE **NOTE:** MINI 1000 FT AGL OR HIGHER IF REQUESTED	▶ANNOUNCE **"ACCELERATION ALTITUDE"** ▶DO IAS.....INCREASED (ABOVE WHITE BUG) PWR..... CLIMB BLEEDS..... SET ON IF NOT IAS.....160 KT SET	▶DO PL..... RETARD TO THE NOTCH ▶ORDER **"CLIMB SEQUENCE"**
REACHING WHITE BUG OR VGA + 15	▶ANNOUNCE **"CLIMB SEQUENCE COMPLETE"** ▶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	▶ANNOUNCE **"FLAPS 15"**	
REACHING WHITE OR RED BUG (ACCORDING TO EXTERNAL CONDITIONS)	▶ANNOUNCE **"WHITE BUG"** *NORMAL CONDITIONS* **"RED BUG"** *ICING CONDITIONS* ▶DO FLAPS LEVER..... SET TO 0	▶ORDER **"FLAPS 0"**
WHEN FLAPS AT 0 ON THE FLAPS INDICATOR	▶ANNOUNCE **"FLAPS 0"**	**CONTINUE THE AFTER TAKE-OFF PROCEDURE** Refer to 02.03 p. 43, **After take-off**.

GO-AROUND FLOW



PNF

A FLAPS
Select flaps one notch less than actual.

(A) FLAPS: 25°
When PF orders “FLAPS 25”, select flaps 25.

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

C LANDING GEAR LEVER: UP
Announce “POSITIVE RATE”. When PF orders “GEAR UP”, select landing gear lever up.

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

E TAXI & T/O LIGHTS: OFF

PF

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

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

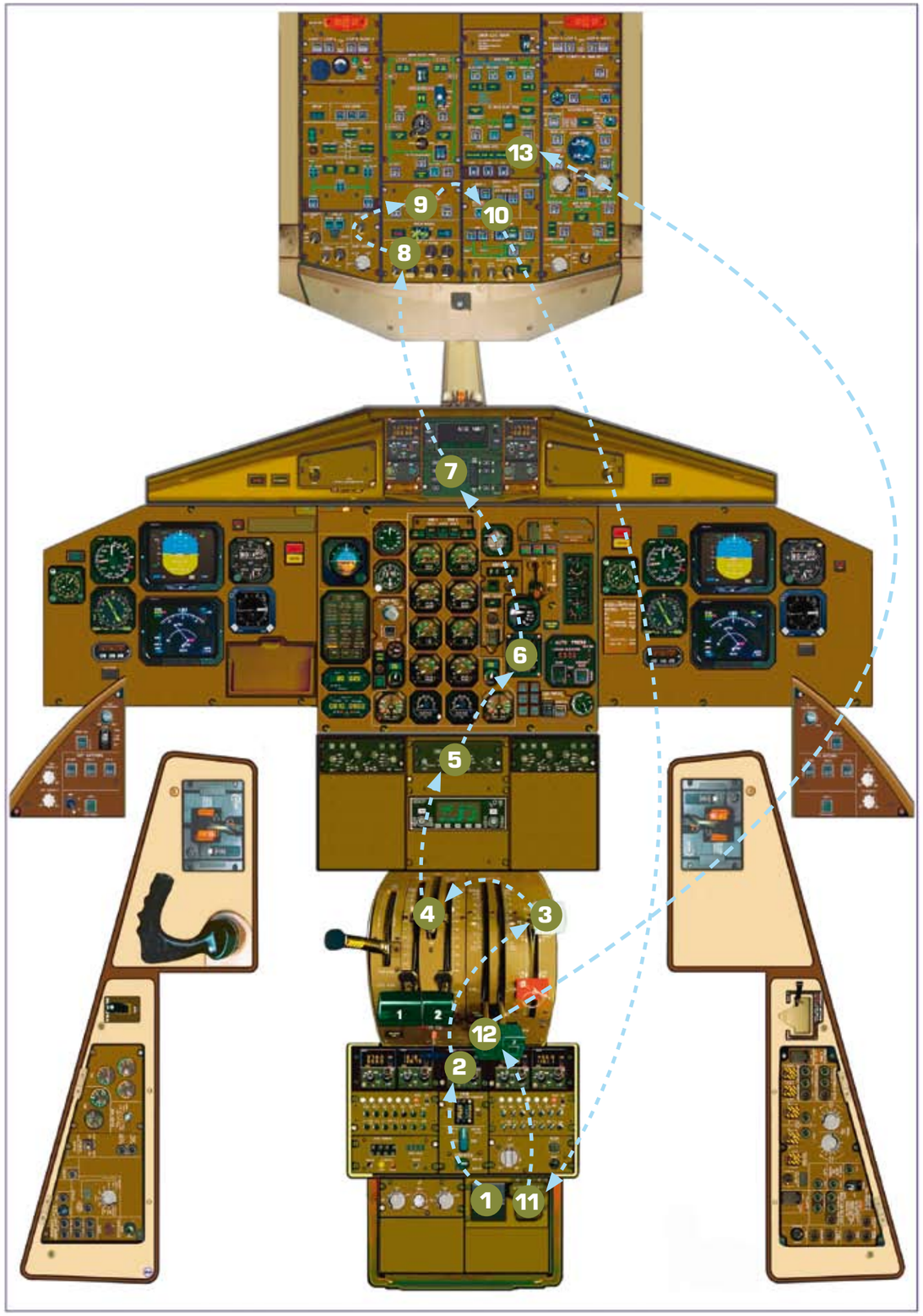
C PITCH: 8°
Follow FD BARS, and cancel AP Cavalry charge.

PERSONAL NOTES

3.23. After landing

Flight events	CM1	CM2
RUNWAY VACATED	▶ORDER **"AFTER LANDING PROCEDURE"**	▶DO TRIMS ..... RESET XPDR..... STBY TCAS..... STBY FLAPS .....0° GUST LOCK..... ENGAGED RADAR ..... STBY ADU ..... STBY/RESET LANDING LIGHT..... OFF STROBE LIGHT ..... OFF CONT LIGHT ..... OFF ANTI-ICING..... OFF DE-ICING ..... OFF ▶ANNOUNCE **"AFTER LANDING PROCEDURE COMPLETE"**
IF LAST FLIGHT OF THE DAY	▶ORDER **"ATPCS TEST"**	▶DO ATPCS TEST ..... PERFORMED ▶ANNOUNCE **"ATPCS TEST PERFORMED"**
AFTER 1 MINUTE, PL IN GI POSITION	▶ORDER **"CL1 FEATHER, THEN SHUT-OFF"** *Wait 20 seconds before shut-off for last flight of the day (for oil maintenance check).*	▶DO CL1.....FEATHER, SHUT-OFF ACW BTC..... CHECK CLOSED
WHEN ENG 1 IS STOPPED	▶REQUEST **"AFTER LANDING CHECKLIST"**	▶READ FOR HIMSELF **"AFTER LANDING CHECKLIST"** *Refer to QRH 6.01* ▶ANNOUNCE **"CHECKLIST COMPLETE"**

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.

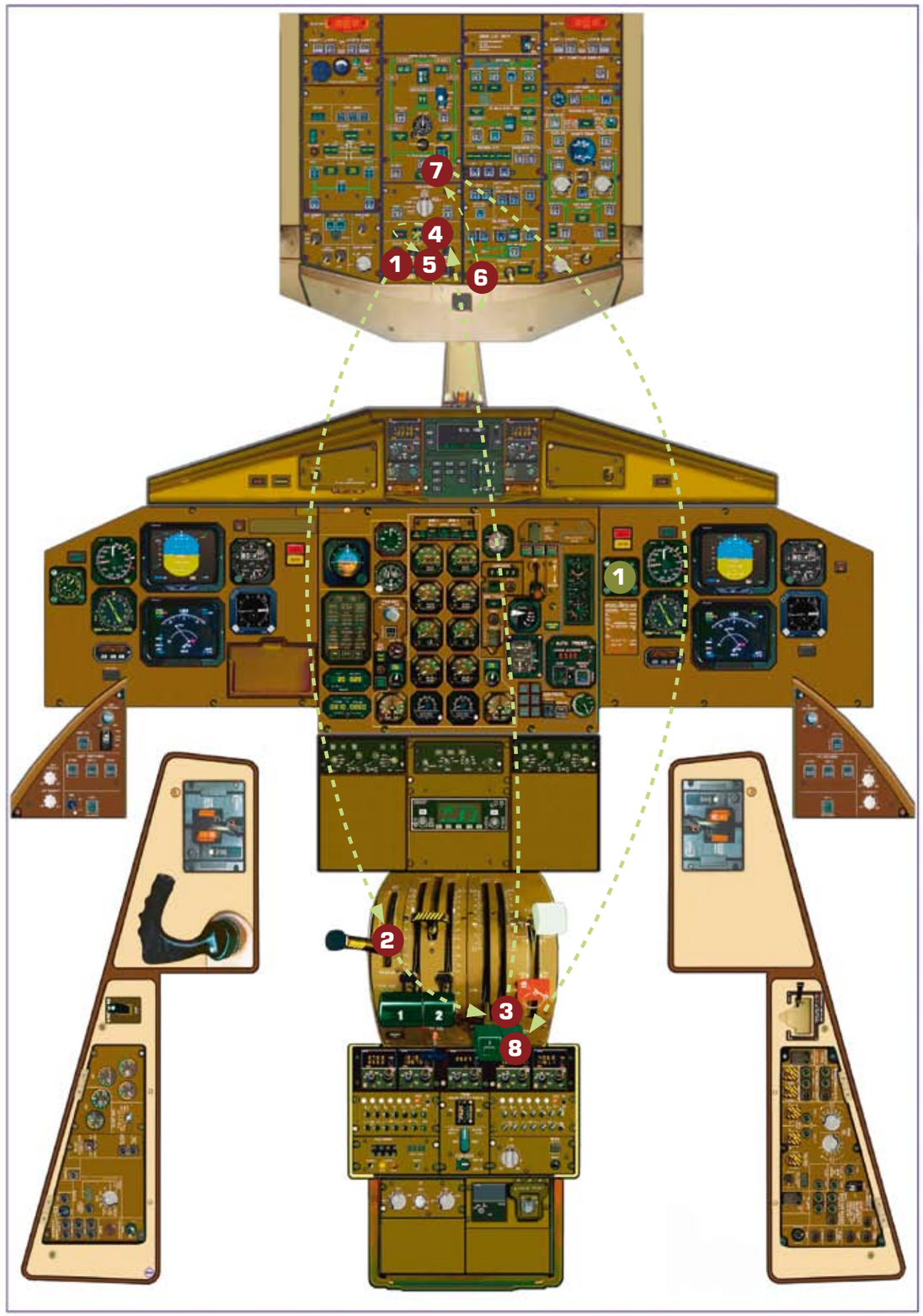
PERSONAL NOTES

3.24. Parking

Flight events	CM1	CM2
MARSHALLER IN SIGHT	▶DO TAXI & T/O LIGHT.....OFF	▶CHECK AND ANNOUNCE HYDRAULIC PRESS ..... 3X3000 PSI "HYDRAULIC CHECK"
AT THE GATE	▶DO PARKING CL2 BRK..... ON CL 2..... FEATHERED READY LT..... CHECKED PROP BRK ..... ON NP BELLOW 20 %..... ON/LOCKED BEACON .....OFF SEAT BELT.....OFF	▶DO TIMING .....START PROP 2.....CHECKED STOP
WHEN GPU AVAILABLE	▶DO DC EXT PWR PB ..... DEPRESSED CL2..... FUEL SHUT OFF	
PARKING PROCEDURE COMPLETE	▶REQUEST "PARKING CHECKLIST"	▶READ FOR HIMSELF "PARKING CHECKLIST" *Refer to QRH 6.01* ▶ANNOUNCE "CHECKLIST COMPLETE"

ALL ATR

PARKING FLOW



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

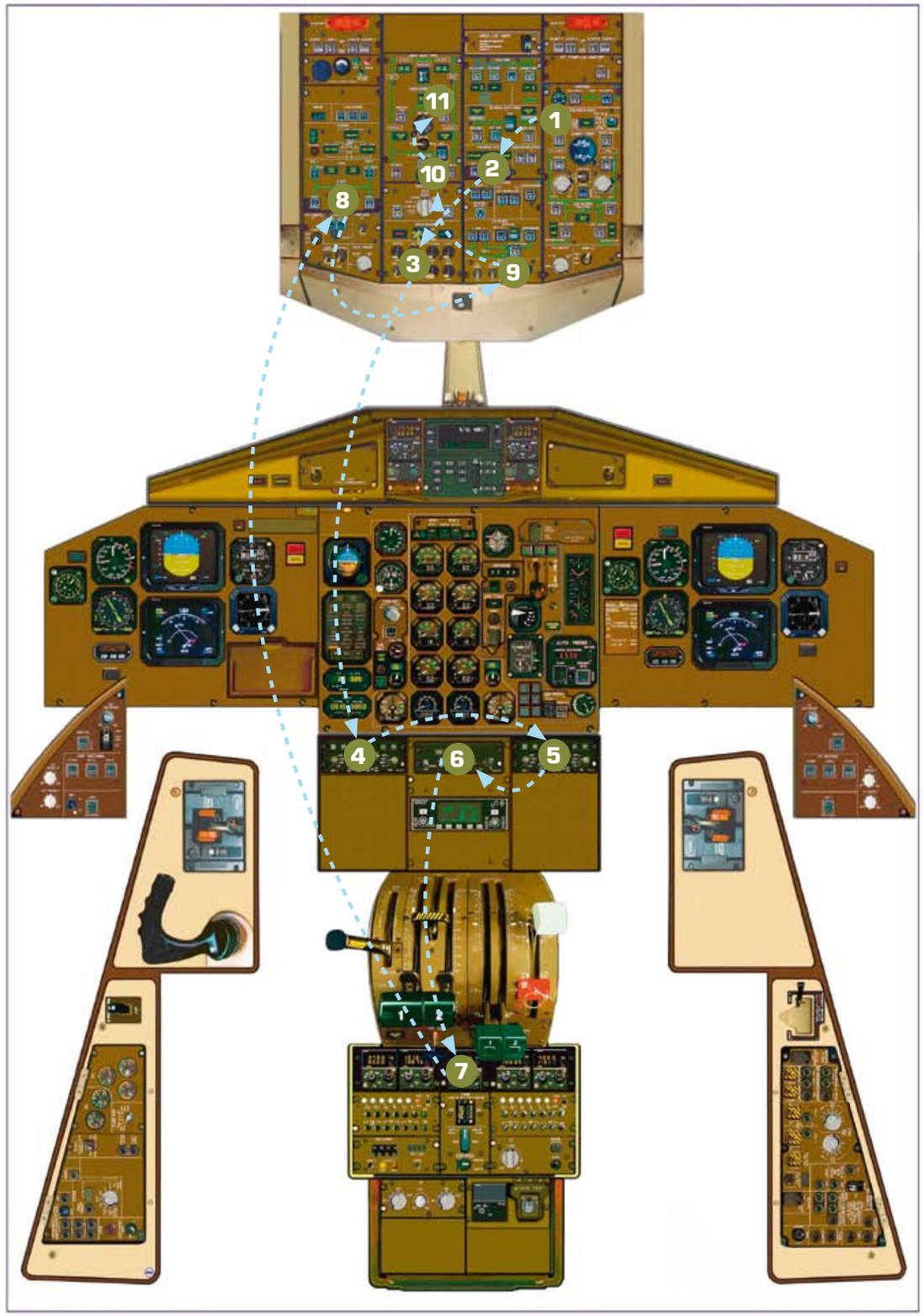
1. **TIMING: START**
   Only for last flight of the day, wait 20 seconds before engine 2 shut off (will enable later OIL LEVEL checks).

PERSONAL NOTES

3.25. Leaving the aircraft

Flight events	CM1	CM2
ALL DOCUMENTATION FILLED	▶ORDER **"LEAVING THE AIRCRAFT PROCEDURE"**	▶DO ICE AND RAIN PROTECTION..... OFF EXT LTs ..... OFF EFIS ..... OFF RADAR ..... OFF COMs ..... OFF FUEL PUMPS ..... OFF EMER EXIT LT ..... DISARM CDLS (if installed)..... OFF CDLS CTL Panel FAULT LIGHT.....CHECK EXT POWER ..... OFF BAT ..... OFF ▶ANNOUNCE **"LEAVING THE AIRCRAFT PROCEDURE COMPLETE"**
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

PERSONAL NOTES

PERSONAL NOTES

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:

Flight events	PNF	PF
NEW WAYPOINT ACKNOWLEDGED	▶**ANNOUNCE** **"CONFIRM"**	▶**ANNOUNCE** **"DIRECT TO XXXXX, CONFIRM?"** ▶**DO** EXEC KEY ..... DEPRESSED NEW FLIGHT PATH ..... MONITORED

IF AUTOPILOT DISCONNECTED:

Flight events	PNF	PF
NEW WAYPOINT ACKNOWLEDGED	▶**DO AND ANNOUNCE** **"DIRECT TO XXXXX, SET"** ▶**DO** EXEC KEY ..... DEPRESSED	▶**ORDER** **"SET DIRECT TO XXXXX"** ▶**DO** NEW FLIGHT PATH ..... MONITORED

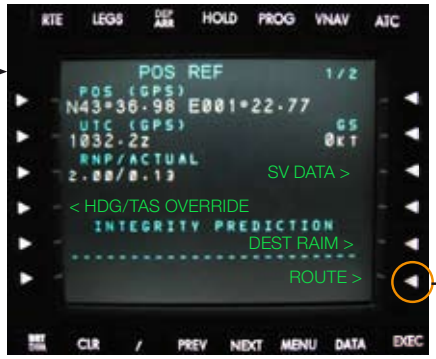
ALL ATR

1.2. Pre-flight

PREFLIGHT

- Check aircraft model, engines model and navigational database.
- Depress LSK 6R (Line Select Key).

PREFLIGHT



- Check present position, time.
- Depress LSK 6R

PREFLIGHT

- Route 1 page on which you insert your flight plan.

PREFLIGHT

- Enter departure airport ICAO code in the scratchpad (e.g. LFBO)
- Depress LSK 1L to replace the origin box prompts by LFBO.

PREFLIGHT

- Check LFBO written under ORIGIN.

PREFLIGHT

- Enter destination airport ICAO code in the scratchpad (e.g. LFBD)
- Depress LSK 1R

ALL ATR

PREFLIGHT

• Check LFBD written under DEST.

PREFLIGHT

• Enter flight number in the scratchpad (e.g. ATR 01).
• Depress LSK 2R.

PREFLIGHT

• Check ART 01 written under FLT NO.

PREFLIGHT

• Enter departure runway in the scratch-pad (e.g. RWY 32R).
• Depress LSK 2L.

PREFLIGHT

• Check RW32R 01 written under RUNWAY.
• Depress LSK 6R to activate route 1.

PREFLIGHT

• Depress EXEC KEY to execute the activation.

ALL ATR

PREFLIGHT

• Depress LSK 6R to get the PERF INIT page.

PREFLIGHT

PREFLIGHT

• Enter gross weight, in tons, in the scratchpad (e.g. 16.2).
• Depress LSK 1L.

PREFLIGHT

• Check 16.20 written under GR WT.

PREFLIGHT

• Enter block fuel, in tons, in the scratch-pad (e.g. 2.4).
• Depress LSK 2L.

PREFLIGHT

• Check 2.40 CALC written under FUEL.
• Check correct zero fuel weight indication under ZFW.

ALL ATR

PREFLIGHT

• Enter fuel reserves, in tons, in the scratchpad (e.g. 0.65).
• Depress LSK 4L.

PREFLIGHT

• Check 0.65 written under RESERVES.

PREFLIGHT

• Enter cruise FL in the scratchpad (e.g. 160).
• Depress LSK 1R.

PREFLIGHT

• Check FL160 written under CRZ ALT.
• Depress EXEC KEY to activate modifications.

PREFLIGHT

• Check speeds for climb, cruise and descent phase.
• Check speed transition and transition altitude.
• Depress RTE KEY.

PREFLIGHT

• Depress LSK 5L to copy the route 1 as route 2 to have a second route in case of in flight replanification.

ALL ATR

PREFLIGHT

- Check RTE COPY COMPLETE in LSK 5L.
- Depress LSK 6L.

PREFLIGHT

- Check route 2 data.
- Depress DEP ARR KEY.

PREFLIGHT

- Depress LSK 1L.

PREFLIGHT

- Runway 32R is used for departure.
- Depress LSK 4R.

PREFLIGHT

- Check <SEL> 32R under RUNWAYS.
- Depress EXEC KEY to activate modifications.

PREFLIGHT

- Check <ACT> 32R under RUNWAYS.
AFRIC 5B SID is usual routing.
- Depress LSK 1L.

ALL ATR

PREFLIGHT

- Check AFRIC 5B <SEL> under SIDS.
- Depress EXEC KEY to activate modifications.

PREFLIGHT

- Check AFRIC 5B <ACT> under SIDS.
- Depress DEP ARR KEY.

PREFLIGHT

- Depress LSK 2R.

PREFLIGHT

- ILS 23 is expected on arrival.
- Depress LSK 1R.

PREFLIGHT

- Check <SEL> ILS 23 under APPROACHES.
- BGC4 STAR is expected.
- Depress LSK 1L.

PREFLIGHT

- Check BGC 4 <SEL> under STARS.
- Transition will be done through LIBRU.
- Depress LSK 4R.

ALL ATR

PREFLIGHT

- Check <SEL> LIBRU under TRANS.
- Depress EXEC KEY to activate modifications.

PREFLIGHT

- Check all <SEL> replaced by <ACT>.
- Depress RTE KEY.

PREFLIGHT

- After AFRIC, no waypoint (route discontinuity), then BGC.

PREFLIGHT

- Insert MEN VOR/DME between AFRIC and BGC.
- Enter MEN in the scratchpad.
- Depress LSK 2R.

PREFLIGHT

- Select MEN VOR/DME located in France.
- Depress LSK 1L.

PREFLIGHT

- Check DIRECT MEN in line 2.
- Depress EXEC KEY to activate modifications.

PREFLIGHT

- Check MOD RTE 1 replaced by ACT RTE 1.
- Route discontinuity has to be cleared.
- Depress LSK 4R.

PREFLIGHT

- Check BGC in the scratchpad.
- Depress LSK 3R

PREFLIGHT

- Check discontinuity cleared.
- Depress EXEC KEY to activate modifications.

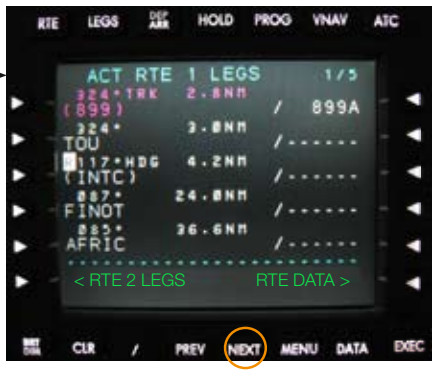
PREFLIGHT

- Check MOD RTE 1 replaced by ACT RTE 1.
- Depress NEXT KEY.

PREFLIGHT

- Check ACT RTE 1 page 3/3.
- Depress LEGS KEY.

PREFLIGHT



- Check ACT RTE 1 LEGS page 1/5 (track, distance, altitude constraint)
- Depress NEXT KEY.

ALL ATR

PREFLIGHT

• Check ACT RTE 1 LEGS page 2/5 (track, distance, altitude constraint)
• Depress NEXT KEY.

PREFLIGHT

• Check ACT RTE 1 LEGS page 3/5 (track, distance, altitude constraint)
• Depress NEXT KEY.

PREFLIGHT

• Check ACT RTE 1 LEGS page 4/5 (track, distance, altitude constraint)
• Depress NEXT KEY.

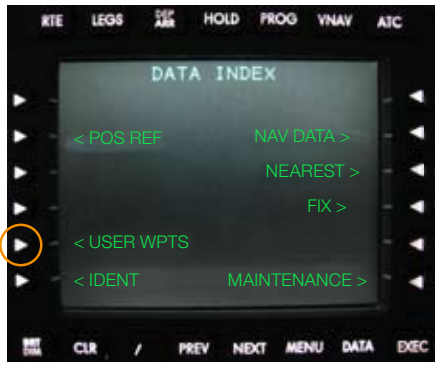
PREFLIGHT

• Check ACT RTE 1 LEGS page 5/5 (holding point).

ALL ATR

1.3. User waypoints

USER WAYPOINTS



• DATA INDEX page obtained by depressing the DATA KEY.
• Depress LSK 5L.

USER WAYPOINTS

• User waypoints list is empty.
• Depress LSK 6L.

USER WAYPOINTS

• User waypoints can be defined by geographic coordinates or point - bearing - distance or point - bearing / point - bearing.

USER WAYPOINTS

• Enter the waypoint name (e.g. point) in the scratchpad.
• Depress LSK 2L.

USER WAYPOINTS

• Check POINT under IDENT.

USER WAYPOINTS

• Enter TOU230/27 in the scratchpad (point : TOU - bearing : 230° - distance : 27 Nm).
• Depress LSK 4L.

ALL ATR

USER WAYPOINTS

• Check TOU230.0/027.0 under PB/D OR PB/PB.
• Check geographic coordinates automatically computed.

USER WAYPOINTS

• Enter N4323.76E00052.27 in the scratchpad (geographic coordinates).
• Depress LSK 3L.

USER WAYPOINTS

• Check N43°23.76 E000°52.27 under LAT/LONG.
• Depress LSK 5R.

USER WAYPOINTS

• Check USER WPT SAVE COMPLETE displayed for a couple of seconds.
• Depress LSK 6L.

USER WAYPOINTS

• Check POINT inserted in the user waypoints list..

1.4. Flight in progress

FLIGHT IN PROGRESS

- ATR01 PROGRESS page obtained by pressing PROG KEY.
- Depress LEGS KEY.

FLIGHT IN PROGRESS

- Inbound FINOT (23.7 Nm to go), you are cleared direct MEN.
- Depress LSK 3L to get MEN in the scratchpad.

FLIGHT IN PROGRESS

- Depress LSK 1L to go direct to MEN.

FLIGHT IN PROGRESS

- Check MEN replaced FINOT.
- Depress EXEC KEY to activate modifications.

FLIGHT IN PROGRESS

- Check MOD RTE 1 LEGS replaced by ACT RTE 1 LEGS.

ALL ATR

FLIGHT IN PROGRESS

• 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.

FLIGHT IN PROGRESS

• Depress LSK 3L.

FLIGHT IN PROGRESS

• Check LACOU removed and route discontinuity displayed.
• Depress LSK 4L.

FLIGHT IN PROGRESS

• Depress LSK 3L to clear the discontinuity.

FLIGHT IN PROGRESS

• Check route discontinuity cleared.
• Depress EXEC KEY to activate modifications.

FLIGHT IN PROGRESS

• 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

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

▶DO
EXTERNAL INSPECTION

CM2

▶DO
EMERGENCY EQUIPMENT ..... CHECK
GEARS PINS ..... ON BOARD
DOCUMENTATION ..... ON BOARD
C/B ..... CHECK
STBY HORIZON
ERECTION KNOB ... PULL AND MAINTAINED
BATTERY ..... ON
STBY HORIZON
ERECTION KNOB ..... RELEASED
VHF 1 ..... ON
ATPCS ..... TEST
COCKPIT COM HATCH ..... OPEN
PARKING BRAKE ..... ON
PL 1 AND 2 ..... GI
GUST LOCK ..... ON
CL 1 AND 2 ..... FUEL S/O
FLAPS LEVER ..... CHECK
LANDING GEAR LEVER ..... DOWN
ECU 1 AND 2 PBs ..... CHECK DEPRESSED
WIPERS ..... OFF
PROP BRK ..... ON
FUEL PUMP 2 ..... ON
ENG 2 FIRE TEST ..... PERFORMED

▶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	CM1	CM2
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"**	▶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?"**
AFTER OUTSIDE VISUAL CHECK	▶DO TIMING*.....START START 2..... CHECK ON ** For starter limitation time, 30 s maxi when starter off (45%NH)*	▶DO START 2 PB..... DEPRESSED ▶ANNOUNCE **"STARTER ON"**
NH=10% **(UNTIL NH=19% IF ITT>200°C)**		▶DO AND ANNOUNCE CL 2..... FEATHER TIMING*.....START **"FUEL OPEN"** **For ignition time, it should rise within 10 seconds* ▶DO ENGINE PARAMETERS.....CHECK
ITT INCREASING	▶DO ENGINE PARAMETERS.....CHECK	▶ANNOUNCE **"IGNITION"** TIMING..... STOP
NH=25%	▶DO ENGINE PARAMETERS.....CHECK	▶ANNOUNCE **When FAULT amber light extinguished** **"ECU"**
NH=45%	▶ANNOUNCE **"STARTER OFF"** **If not, select rotary selector OFF/START ABORT* ▶DO TIMING..... STOP	▶ANNOUNCE **"45%"** ▶DO ITT MAX.....CHECK ▶ANNOUNCE **" ITT XXX °C"**
NH = 61.5%		▶ANNOUNCE **"PARAMETERS STABILIZED"**
	CM1 orders GPU disconnection to ground staff	
PARAMETERS STABILIZED		▶DO ENGINE START.....OFF & START ABORT DC GEN 2 FAULT.....EXTINGUISHED DC BTC..... CHECK CLOSED BLEED / PACKS / X VALVE..... OPEN

1.1. Start up without GPU (3/4)

Flight events	CM1	CM2
AFTER ENG 2 STARTED IN HOTEL MODE	**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).	▶DO **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 SPOILER LIGHTS.....OFF LDG GEAR INDICATOR.....CHECK ENG 1 FIRE.....3 TESTS EXTERNAL LIGHTS.....AS REQUIRED DC/AC PANEL.....CHECK CVR.....TEST SIGN PANEL.....CHECK 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 **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).....SET CDLS.....Daily check

1.1. Start up without GPU during long transit (4/4)

Flight events	CM1	CM2
AFTER CENTRAL 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..... 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 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 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 **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 RMI/EHSI ..... CHECK AIR SPEED INDICATOR ..... CHECK CLOCK.....SET

42 not PEC

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

▶DO
EXTERNAL INSPECTION

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 ..... ON
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

▶READ AND CHECK
Refer TO QRH 3.01
(DOWN TO ENG 2 START IN HOTEL MODE)

72 PEC
42 PEC
72 not PEC

1.1. Start up without GPU during long transit (2/4)

Flight events	CM1	CM2
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"	▶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?"
AFTER OUTSIDE VISUAL CHECK	▶DO TIMING* ..... START START 2..... CHECK ON * For starter limitation time, 30 s maxi when starter off (45%NH)	▶DO START 2 PB..... DEPRESSED ▶ANNOUNCE "STARTER ON"
NH=10% (UNTIL NH=19% IF ITT>200°C)		▶DO AND ANNOUNCE CL 2 ..... FEATHER TIMING* ..... START "FUEL OPEN" *For ignition time, it should rise within 10 seconds ▶DO ENGINE PARAMETERS.....CHECK
ITT INCREASING	▶DO ENGINE PARAMETERS.....CHECK	▶ANNOUNCE "IGNITION" TIMING..... STOP
NH=45%	▶ANNOUNCE "STARTER OFF" *If not, select rotary selector OFF/START ABORT ▶DO TIMING..... STOP	▶ANNOUNCE "45%" ▶DO ITT MAX.....CHECK ▶ANNOUNCE " ITT XXX °C"
NH=61.5%		▶ANNOUNCE "PARAMETERS STABILIZED"
	CM1 orders GPU disconnection to ground staff	
PARAMETERS STABILIZED		▶DO ENGINE START ..... OFF & START ABORT DC GEN 2 FAULT..... EXTINGUISHED DC BTC..... CHECK CLOSED BLEED / PACKS / X VALVE..... OPEN

1.1. Start up without GPU during long transit (3/4)

Flight events	CM1	CM2
AFTER ENG 2 STARTED IN HOTEL MODE	▶DO EXTERNAL INSPECTION **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).	▶DO **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 SPOILER LIGHTS.....OFF LDG GEAR INDICATOR.....CHECK TLU.....AUTO ENG 1 FIRE.....3 TESTS EXTERNAL LIGHTS.....AS REQUIRED DC/AC PANEL.....CHECK CVR.....TEST SIGN PANEL.....CHECK 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 **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).....SET CDLS.....Daily check

72 PEC

42 PEC

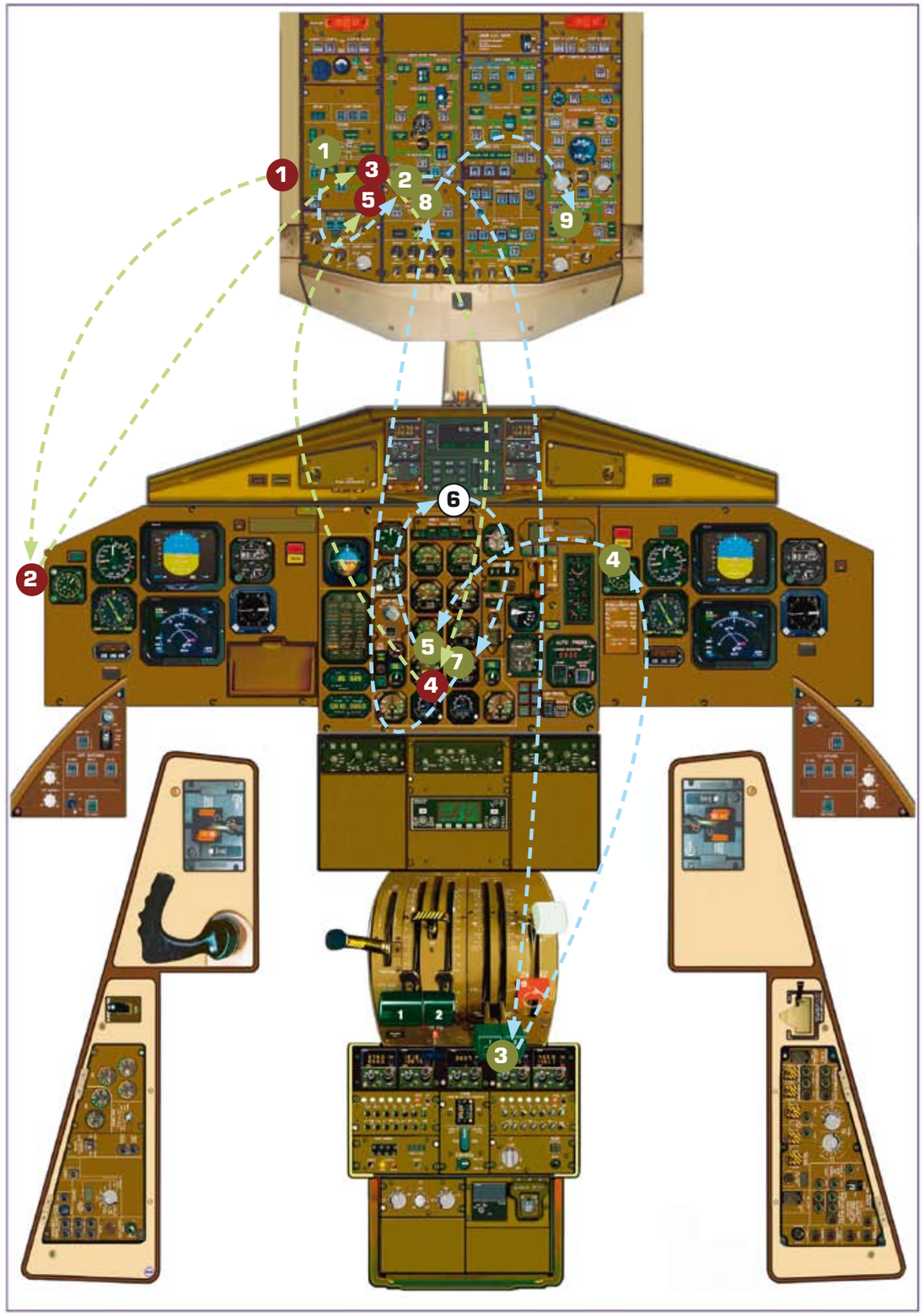
72 not PEC

72 PEC
42 PEC
72 not PEC

1.1. Start up without GPU during long transit (4/4)

Flight events	CM1	CM2
AFTER CENTRAL PANEL SCAN	42 PEC 72 PEC	▶DO **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 HYDRAULIC..... 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 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 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 RMI/EHSI ..... CHECK AIR SPEED INDICATOR ..... CHECK CLOCK.....SET

ENGINE START WITHOUT GPU FLOW



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 exinguishes, 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 STABLISED”, 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.

PERSONAL NOTES

1.2. Start up without GPU during short transit

ENG 2 FIRE tests are performed before starting engine 2 in Hotel mode.

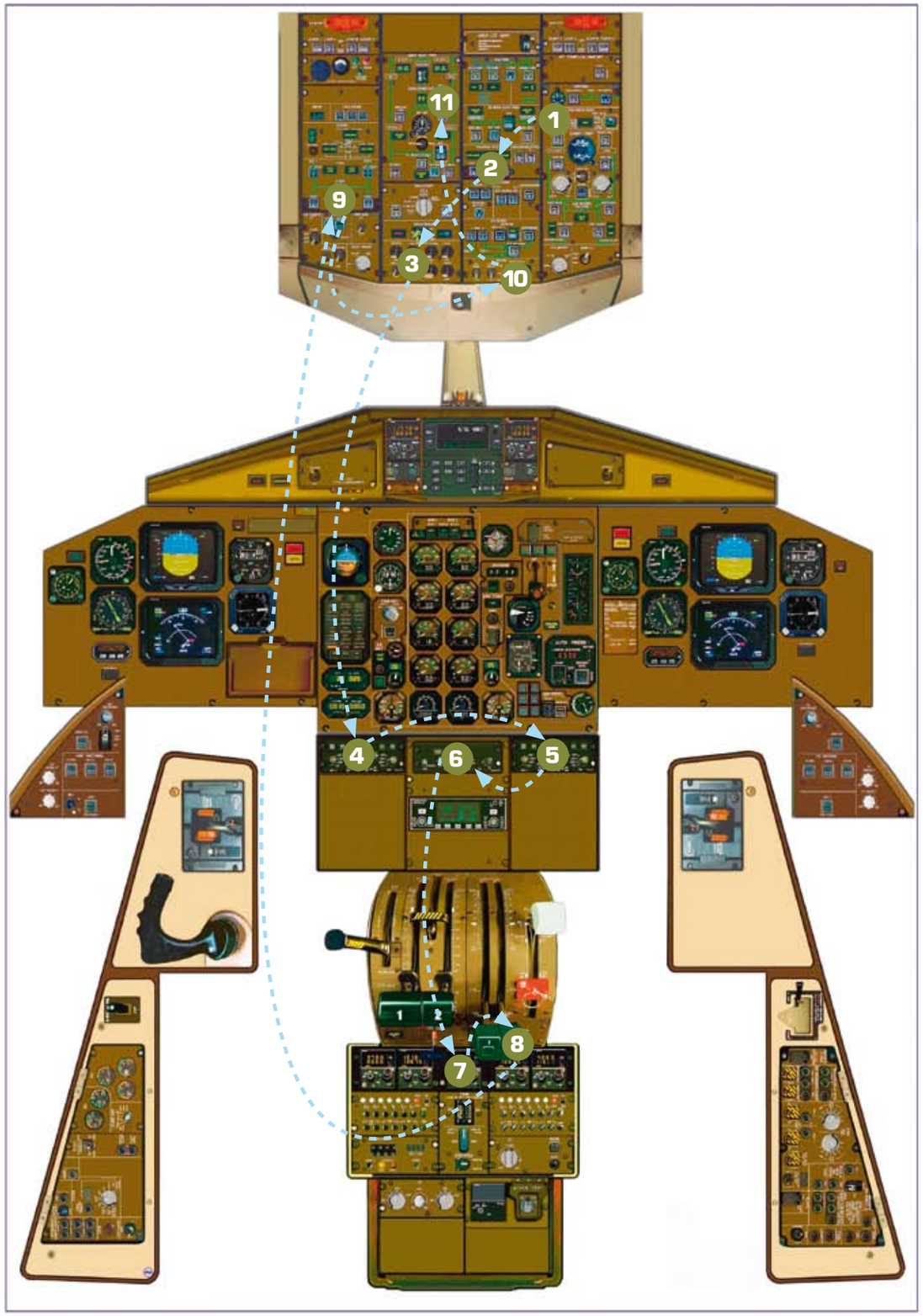
Flight events	CM1	CM2
	▶DO **EXTERNAL INSPECTION**	▶DO ENG 1 FIRE..... 3 TESTS FDEP (If installed).... FLIGHT NUMBER+DATE MCDU (If installed)..... SET FUEL QTY..... TEST/CHECK FUEL USED..... RESET AUTOPRESS..... TEST/LANDING ELEVATION COCKPIT COM HATCH ..... OPEN

1.3. Ramp arrival without GPU

ENG 2 runs until ‘‘Leaving the Aircraft Procedure’’.

Flight events	CM1	CM2
ALL DOCUMENTATION FILLED	▶ORDER **“LEAVING THE AIRCRAFT PROCEDURE”**	▶DO OXYGEN MAIN SUPPLY..... OFF ICE AND RAIN PROTECTION OFF EXT LTs ..... OFF EFIS ..... OFF RADAR ..... OFF COMs ..... OFF CL2..... SHUT-OFF FUEL PUMPS ..... OFF EMER EXIT LT .....DISARM CDLS (if installed)..... OFF CDLS CTL Panel FAULT LIGHT..... CHECK BAT ..... OFF ▶ANNOUNCE **“LEAVING THE AIRCRAFT PROCEDURE COMPLETE”**
PROCEDURE COMPLETE		▶READ FOR HIMSELF **“LEAVING THE AIRCRAFT CHECKLIST”** *Refer to QRH 6.01* ▶ANNOUNCE **“CHECKLIST COMPLETE”**

ARRIVAL WITHOUT GPU 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: OFF
8. CL 2: FUEL S/O
9. BOTH FUEL PUMPS: OFF
10. EMER EXIT LIGHT: DISARM
11. BATTERY: OFF

ALL ATR

PERSONAL NOTES

PERSONAL NOTES

2. Noise abatement procedures

The noise abatements 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

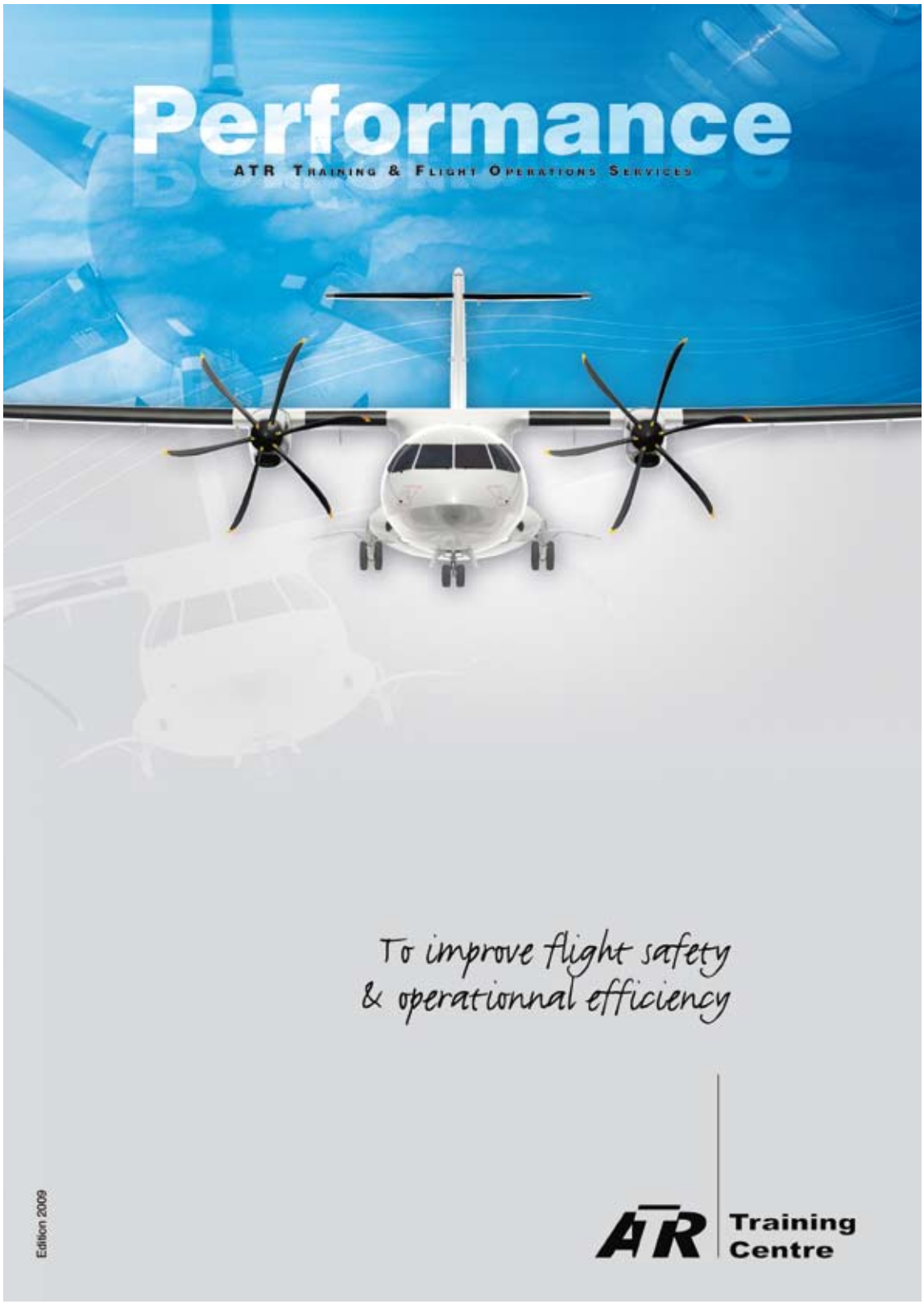
Local aerodrome procedures: Refer to published airport manuals (In Jeppesen charts, the Noise Abatement page is usually in chapter 10-4).

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:

Flight events	CM1	GROUND STAFF
CLEARED TO PUSH BACK	▶DO NOSE WHEEL STEERING SWITCH.....OFF PARKING BRAKE.....OFF ▶ANNOUNCE **"GROUND FROM COCKPIT, I CONFIRM CLEAR TO PUSH, NOSE NORTH (SOUTH, EAST, WEST), PARKING BRAKE IS OFF, NOSE WHEEL STEERING IS OFF"**	▶ANNOUNCE **"STARTING PUSH"**
WHEN PUSH BACK COMPLETE	▶DO PARKING BRAKE.....ON	▶ANNOUNCE **"COCKPIT FROM GROUND, PUSH BACK COMPLETE, PARKING BRAKE ON"**
TOW BAR DISCONNECTED AND VISUALLY CONFIRMED BY CREW	▶DO NOSE WHEEL STEERING SWITCH.....ON ▶ANNOUNCE **"NOSE WHEEL STEERING IS ON, YOU CAN DISCONNECT YOURSELF, GOOD BYE"**	▶ANNOUNCE **"TOW BAR IS DISCONNECTED, YOU MAY CONNECT NOSE WHEEL STEERING"**
	CM 2 REQUEST TAXI CLEARANCE	

ALL ATR

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 responsiblity. For safety reasons, engine 1 start must be performed on a clear taxiway, and in low workload environment.

Flight events	CM1	CM2
ON CAPTAIN DECISION	▶ORDER **"START ENGINE 1, RADIO MY SIDE''**	
AFTER OUTSIDE VISUAL CHECK		▶ANNOUNCE **"STARTING ENG 1''** ▶DO START 1 PB..... DEPRESSED TIMING ..... START
NH = 10% **(UNTILL NH=19% IF ITT>200°C**		▶DO AND ANNOUNCE CL 1 ..... FEATHERED **"FUEL OPEN''** ▶DO ENGINE PARAMETERS ..... CHECK
ITT INCREASING		▶ANNOUNCE **"IGNITION''** ▶DO ENGINE PARAMETERS ..... CHECK
NH = 25%		▶ANNOUNCE **"ECU''**
NH NCREASING		▶DO AND ANNOUNCE ENGINE PARAMETERS ..... CHECK **"OIL PRESS''**
NH = 45%		▶ANNOUNCE **"45%, STARTER OFF''** ▶DO STARTER OFF..... CHECK TIMING .....STOP ITT MAX ..... CHECK ▶ANNOUNCE **" ITT XXX °C''**
NH = 61.5%		▶ANNOUNCE **"PARAMETERS STABILIZED''**
PARAMETERS STABILIZED	▶ORDER **"CL1 MAX RPM"**	▶DO ENGINE START ..... OFF & START ABORT DC GEN 1 FAULT..... EXTINGUISHED DC BTC..... CHECK OPEN BLEED / PACKS ..... LIGHTS EXTINGUISHED OVERHEAD PANEL DARK *(EXCEPTED THE FAULT LIGHT ILLUMINATED ON EXHAUST MODE PB FOR 2 MINUTES AND ALSO ACW GEN 1 FAULT LIGHT)* ▶DO AND ANNOUNCE CL 1 ..... MAX RPM **"CL1 MAX RPM"**
WHEN NP STABILISED AROUND 71%		▶ANNOUNCE **"LOW PITCH"** ▶CHECK ACW GEN 1 ..... ON LINE

42 not PEC

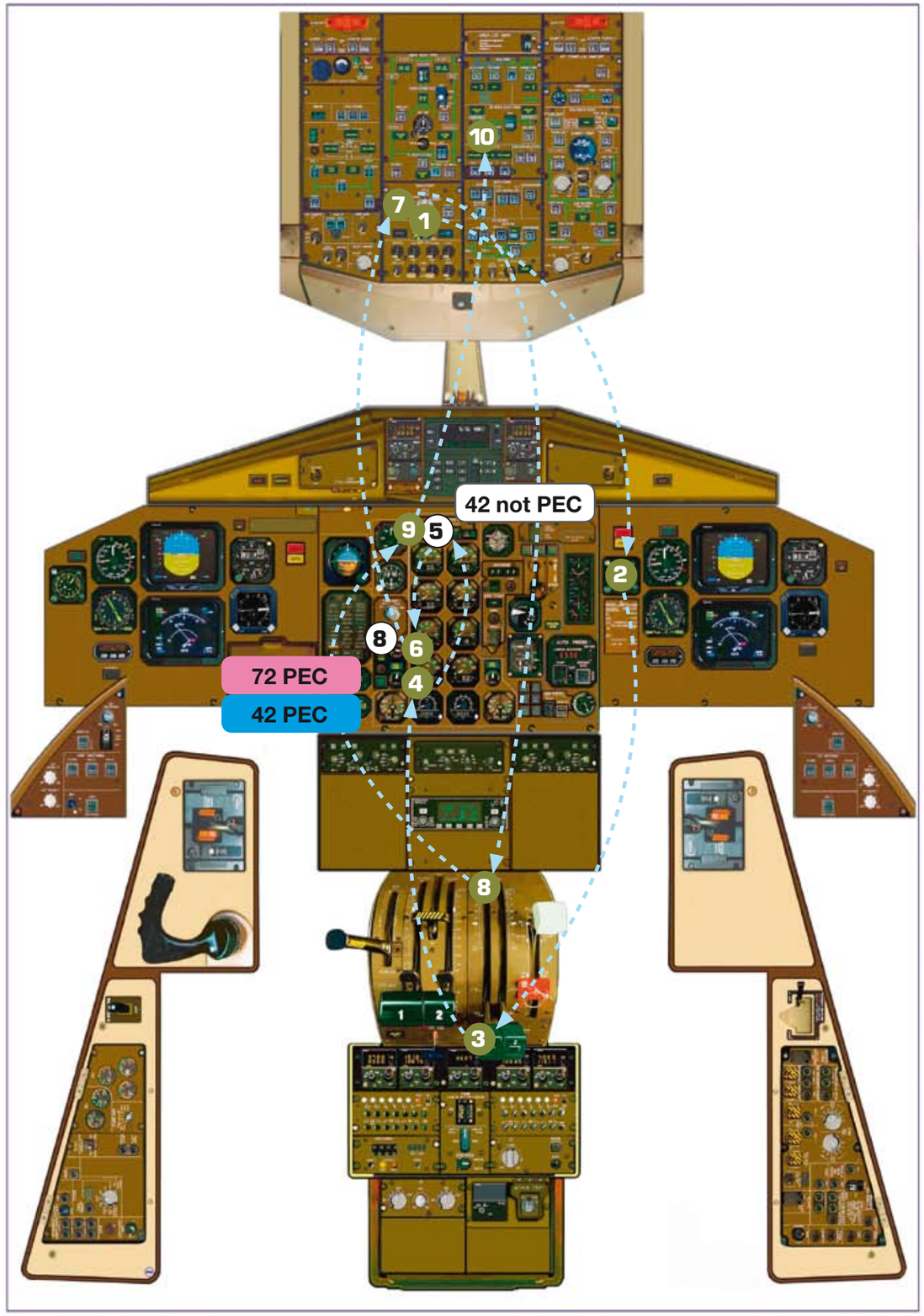
72 PEC
42 PEC
72 not PEC

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 responsiblity. For safety reasons, engine 1 start must be performed on a clear taxiway, and in low workload environment.

Flight events	CM1	CM2
ON CAPTAIN DECISION	▶ORDER "START ENGINE 1, RADIO MY SIDE"	
AFTER OUTSIDE VISUAL CHECK		▶ANNOUNCE "STARTING ENG 1" ▶DO START 1 PB..... DEPRESSED TIMING ..... START
NH = 10% **(UNTILL NH=19% IF ITT>200°C**		▶DO AND ANNOUNCE CL 1..... FEATHERED "FUEL OPEN" ▶DO ENGINE PARAMETERS ..... CHECK
ITT INCREASING		▶ANNOUNCE "IGNITION" ▶DO ENGINE PARAMETERS ..... CHECK
NH NCREASING		▶DO AND ANNOUNCE ENGINE PARAMETERS ..... CHECK "OIL PRESS"
NH = 45%		▶ANNOUNCE "45%, STARTER OFF" ▶DO STARTER OFF ..... CHECK TIMING .....STOP ITT MAX ..... CHECK
NH = 61.5%		▶ANNOUNCE " ITT XXX °C"
PARAMETERS STABILIZED 42 PEC / 72 PEC → ▶ORDER "CL1 AUTO" 72 not PEC → ▶ORDER "CL1 MAX RPM"		▶ANNOUNCE "PARAMETERS STABILIZED" ▶DO ENGINE START ..... OFF & START ABORT DC GEN 1 FAULT..... EXTINGUISHED DC BTC.....CHECK OPEN BLEED / PACKS ..... LIGHTS EXTINGUISHED OVERHEAD PANEL DARK *(EXCEPTED THE FAULT LIGHT ILLUMINATED ON EXHAUST MODE PB FOR 2 MINUTES AND ALSO ACW GEN 1 FAULT LIGHT)* ▶DO AND ANNOUNCE CL 1..... AUTO "CL1 AUTO" ▶DO AND ANNOUNCE CL 1.....MAX RPM "CL1 MAX RPM"
WHEN LOW PITCH AND SGL CH LIGHTS ILLUMINATED	42 PEC / 72 PEC → ▶ANNOUNCE "SINGLE CHANNEL..... LOW PITCH" 72 not PEC → ▶ANNOUNCE "LOW PITCH"	
WHEN NP STABILISED AROUND 71%		▶CHECK ACW GEN 1 ..... ON LINE

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, annouce: “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 STABLISED”, then turn the rotary selector to OFF/START ABORT.

8 CONDITION LEVER 1: MAX RPM/AUTO

(8) PEC SINGLE CHANNEL TEST: CHECK
Check SGL CH is illuminated, then extinguished.

9 LO PITCH LIGHT: ILLUMINATED

10 ACW GEN 1: ON LINE
Check ACW BTCs OPEN.

PERSONAL NOTES

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 VS for ATR 42 – 300 or V_{AT} = 1.23 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

Aeroplane Category	V_{AT}
A	V_{AT} < 91 kt
B	91 kt ≤ V_{AT} <121 kt
C	121 kt ≤ V_{AT} <141 kt
D	141 kt ≤ V_{AT} <166 kt
E	166 kt ≤ V_{AT} < 211 kt

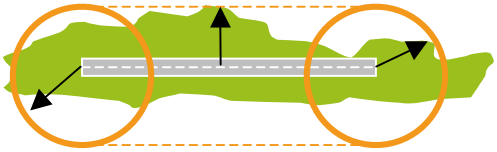
7.2.2 Procedure protections

ATR is integrated in category B	
Vat	91/120 Kt
Initial Approach	120/180/(170) Kt*
Final Approach	85/130 Kt
Circle to land	135 Kt
Missed approach	130/150 Kt

** Speed use in parallel entry*

ALL ATR

7.2.3. Obstacle clearance



→ The arrow represents the radius for the circle to land protection zone.

ATR is integrated in category B	
Speed	135 Kt
Radius	2.8 Nm
Obstacle clearance	295 Ft
OCH	492 Ft
Minimum visibility	2.8 Km

7.2.4. Entry in the standard Patterns:

• (1) parallel entry

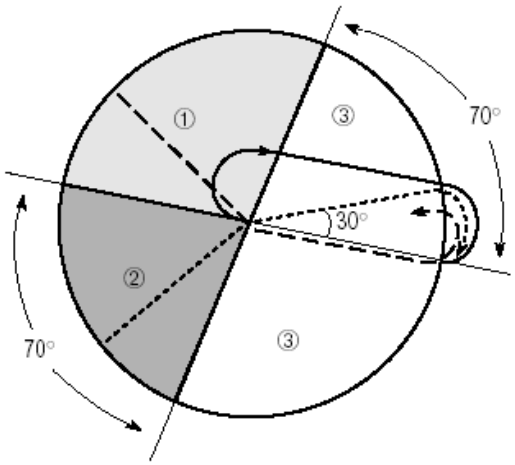
Parallel holding course, turn left and return to holding fix or intercept holding course

• (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.



ALL ATR

7.3. RVR / visibility

All tables are extracted from the OPS 1.430 appendix 1.

7.3.1. Take-off

Facilities	RVR / Visibility (3)
Nil (day only)	500 m
Runway edge lighting and/or centreline marking	250/300 m (1) (2)
Runway edge and centreline lighting	200/250 m (1)
Runway edge, centreline lighting and multiple RVR information	150/200 m (1) (4)

(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

Facility (approach aid)	lowest MDH (ft)
ILS with no glide path (LLZ)	250
SRA (terminating at 1/2 NM.)	250
SRA (terminating at 1 NM.)	300
SRA (terminating at 2 NM.)	350
VOR	300
VOR/DME	250
NDB	300
VDF (QDM and QGH)	300

7.3.3. Cat I approach

Decision Height (7)	Facilities/RVR (5)			
	Full (1)(6)	**Intermediate** (2)(6)	**Basic** (3)(6)	**Nil** (4)(6)
200 ft	550 m	700 m	800 m	1000 m
201-250 ft	600 m	700 m	800 m	1000 m
251-300 ft	650 m	800 m	900 m	1200 m
301 ft and above	800 m	900 m	1000 m	1200 m

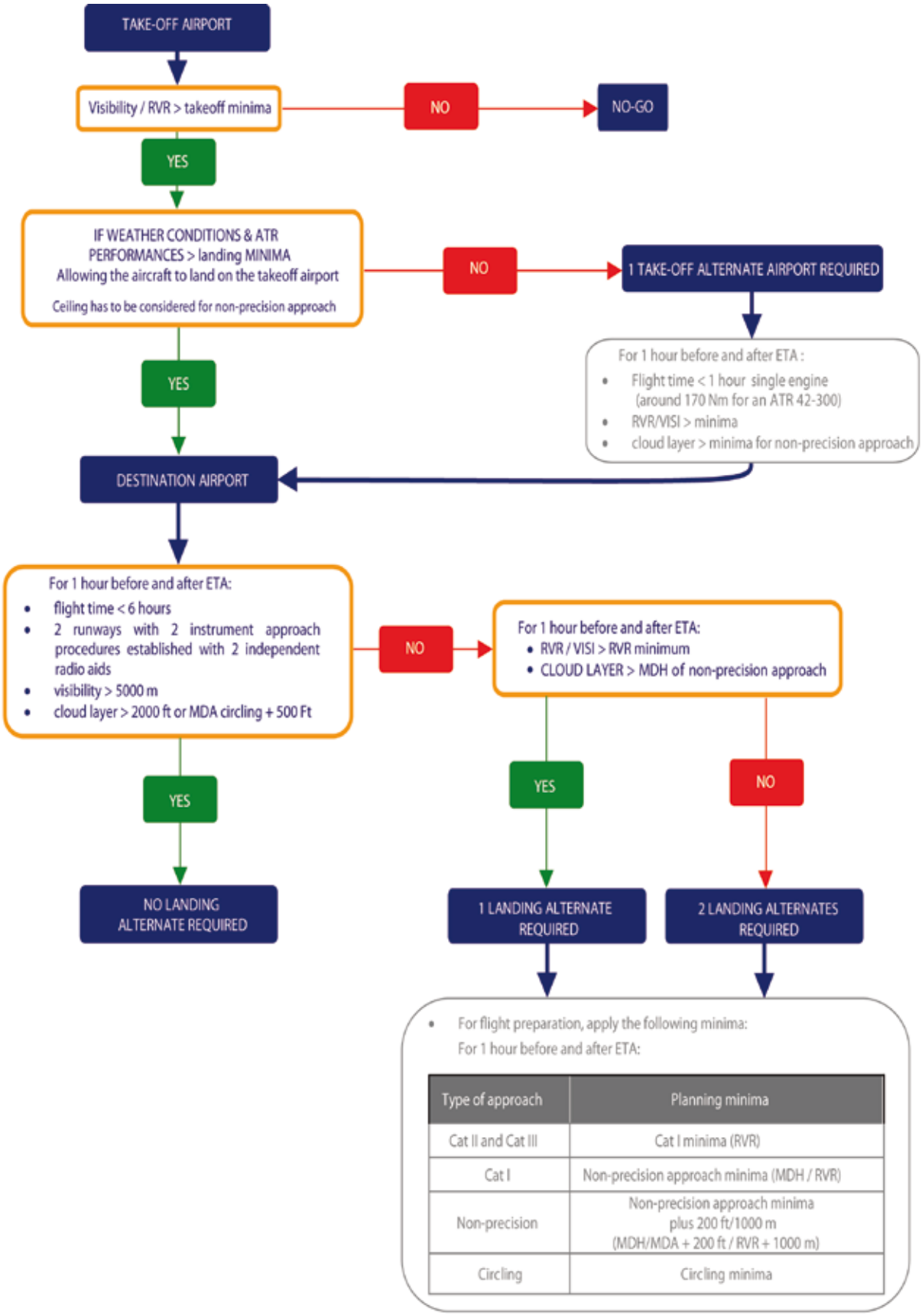
(1) Full facilities comprise runway markings, 720 metres of HI/MI approach lights, runway edge lights, threshold and end lights. Lights must be on.
(2) Intermediate facilities comprise runway markings. 420-719 metres of HI/MI approach lights, runway edge, threshold and end lights. Lights must be on.
(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

Lighting element in operation	RVR = Reported Meteorological visibility multiplied by	
	Day	**Night**
HI approach and runway lighting	1.5	2.0
Any type of lighting installation other than above	1.0	1.5
No lighting	1.0	Not applicable

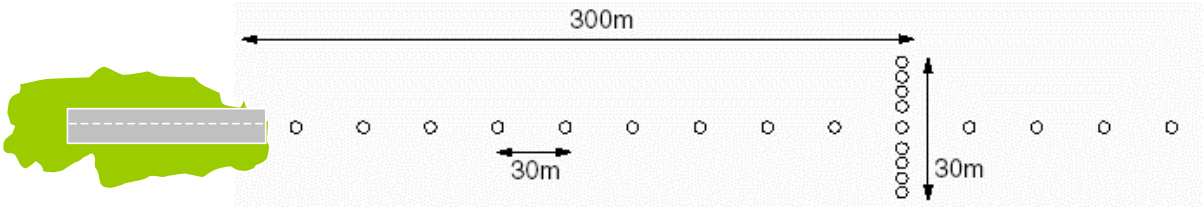
** This table can be used only for flight management, never for flight preparation.*

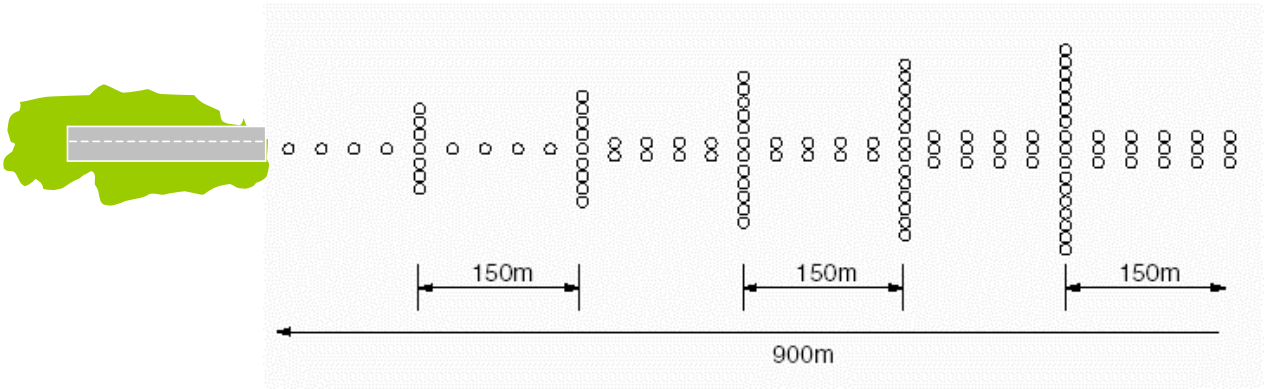
7.4. Flight preparation



7.5. Airport approach facilities

7.5.1. Runway approach line





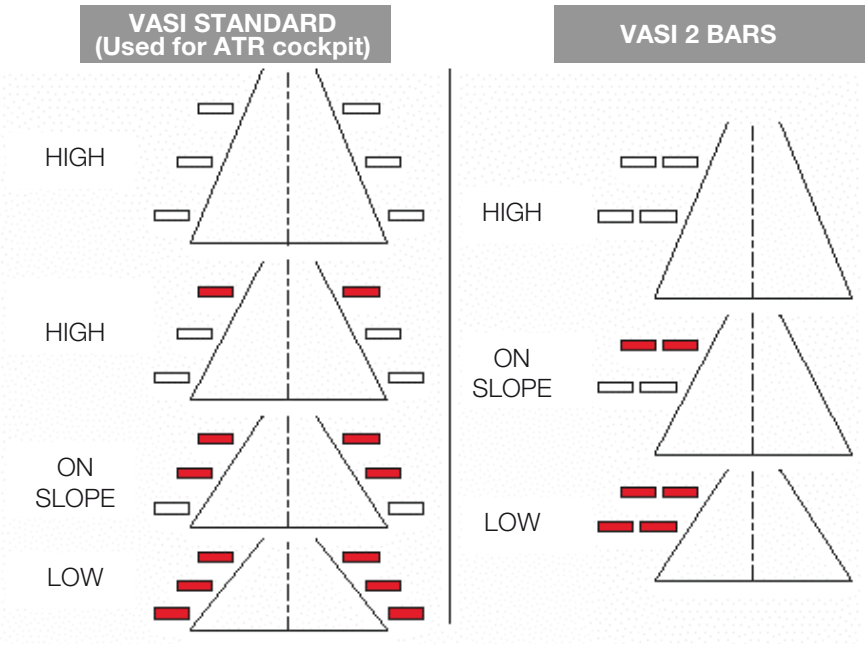
• Full facilities comprise runway markings, 720 meters of HI/MI approach lights, runway edge lights, threshold and end lights. Lights must be on.

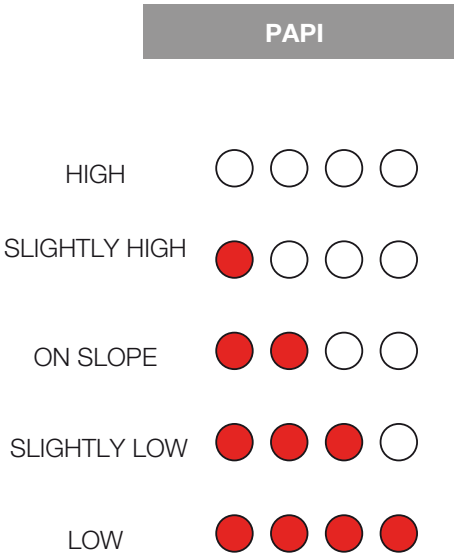
• Intermediate facilities comprise runway markings. 420-719 meters of HI/MI approach lights runway edge, threshold and end lights. Lights must be on.

• 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

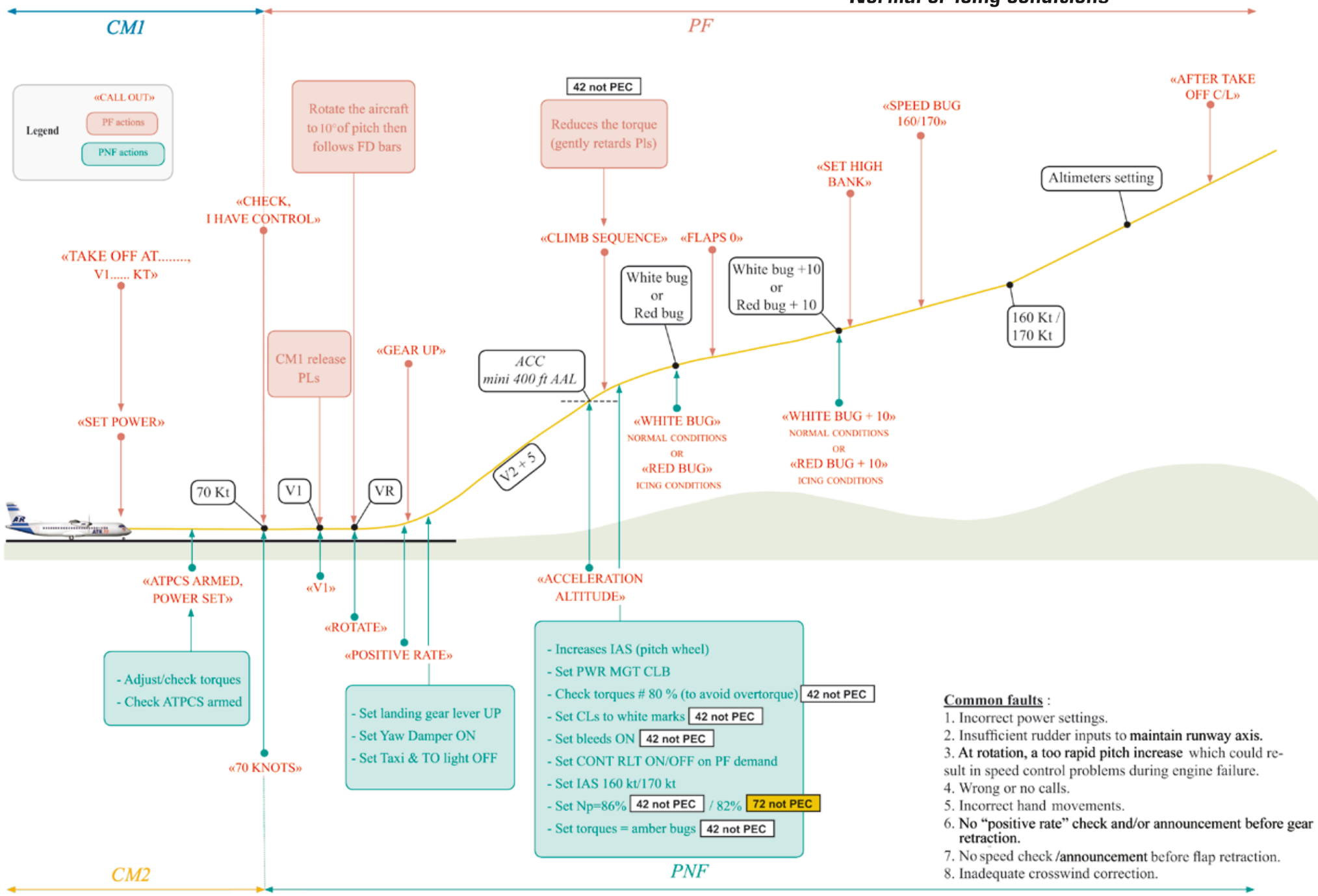




PERSONAL NOTES

1. Take-off

Normal or icing conditions

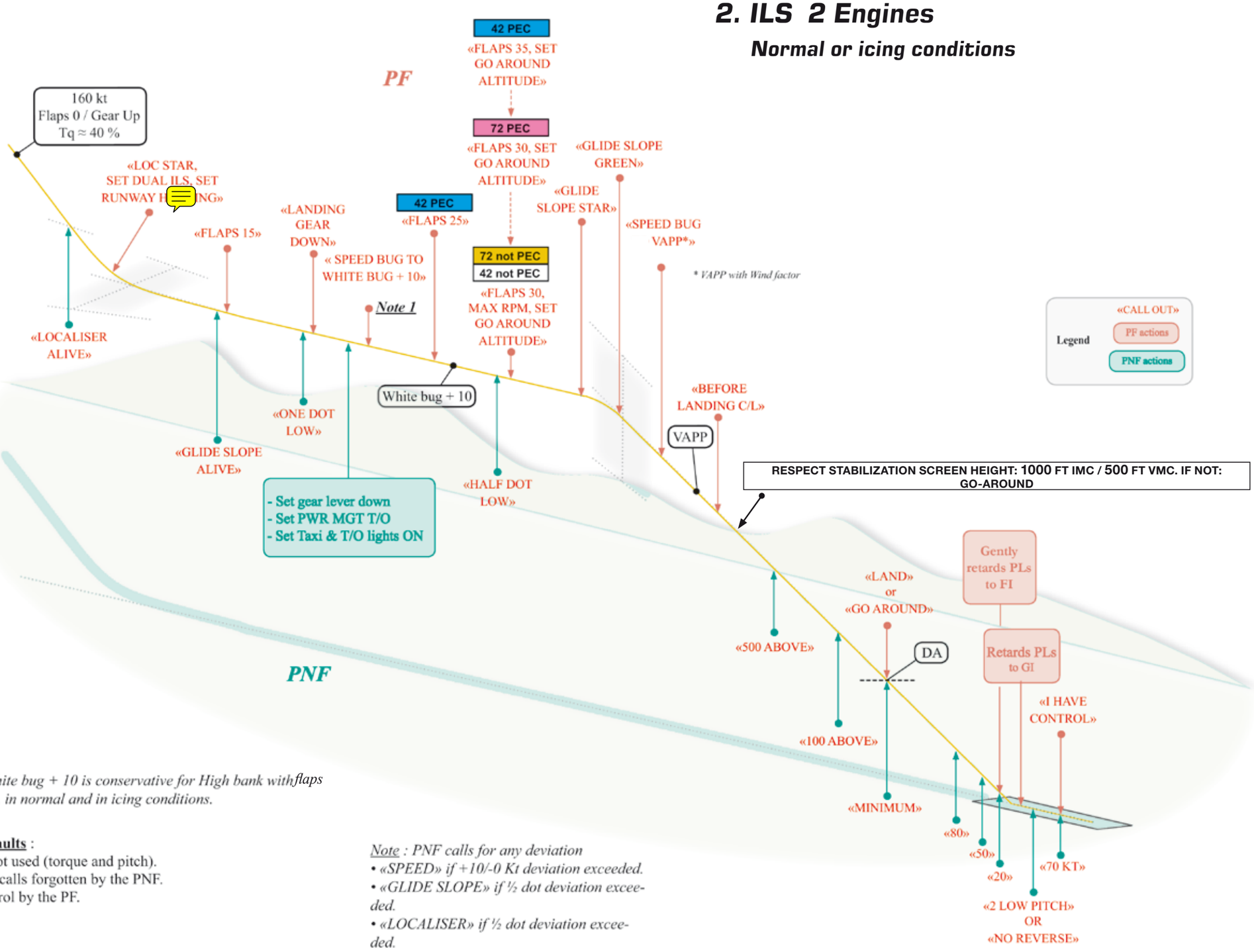


Common faults :

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.*

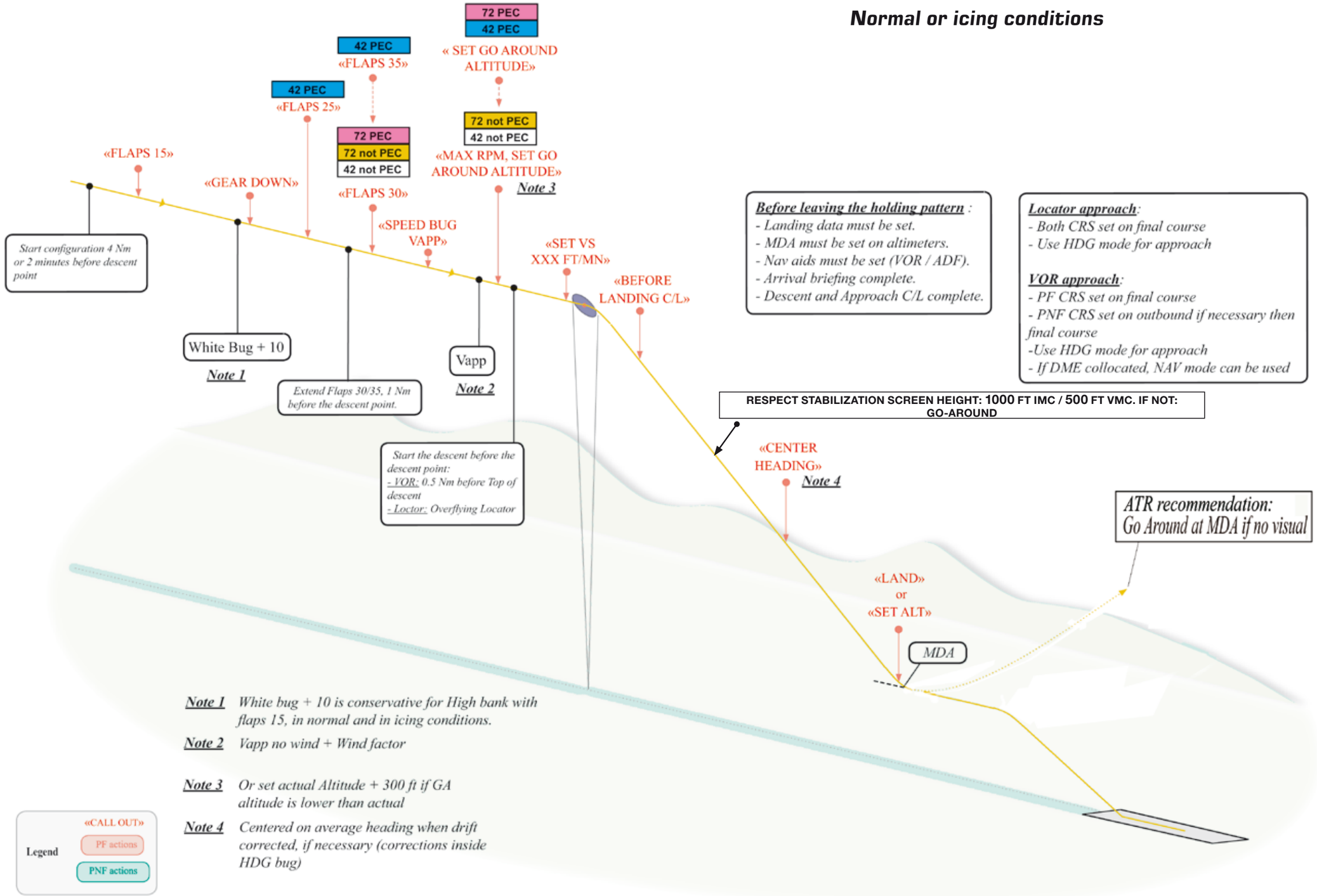
Common faults :
1. Presets not used (torque and pitch).
2. Standard calls forgotten by the PNF.
3. Overcontrol by the PF.

Note : PNF calls for any deviation
- *«SPEED» if +10/-0 Kt deviation exceeded.*
- *«GLIDE SLOPE» if ½ dot deviation exceeded.*
- *«LOCALISER» if ½ dot deviation exceeded.*

ALL ATR

3. Non precision approach

Normal or icing conditions



Before leaving the holding pattern :
- *Landing data must be set.*
- *MDA must be set on altimeters.*
- *Nav aids must be set (VOR / ADF).*
- *Arrival briefing complete.*
- *Descent and Approach C/L complete.*

Locator approach:
- *Both 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*

Note 1 *White bug + 10 is conservative for High bank with flaps 15, in normal and in icing conditions.*

Note 2 *Vapp no wind + Wind factor*

Note 3 *Or set actual Altitude + 300 ft if GA altitude is lower than actual*

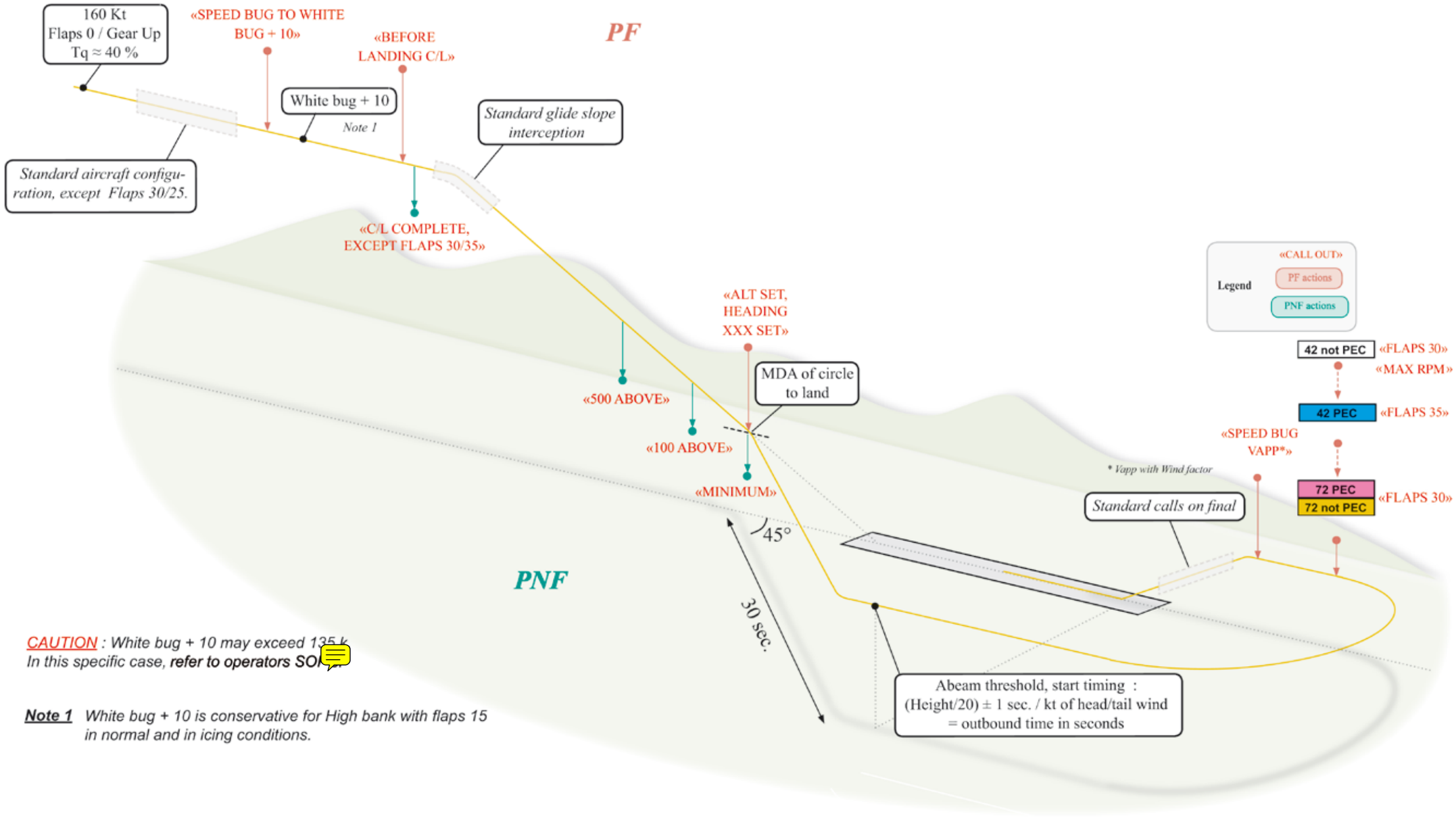
Note 4 *Centered on average heading when drift corrected, if necessary (corrections inside HDG bug)*

Legend: «CALL OUT» | PF actions | PNF actions

ALL ATR

4. Circling approach

Normal or icing conditions



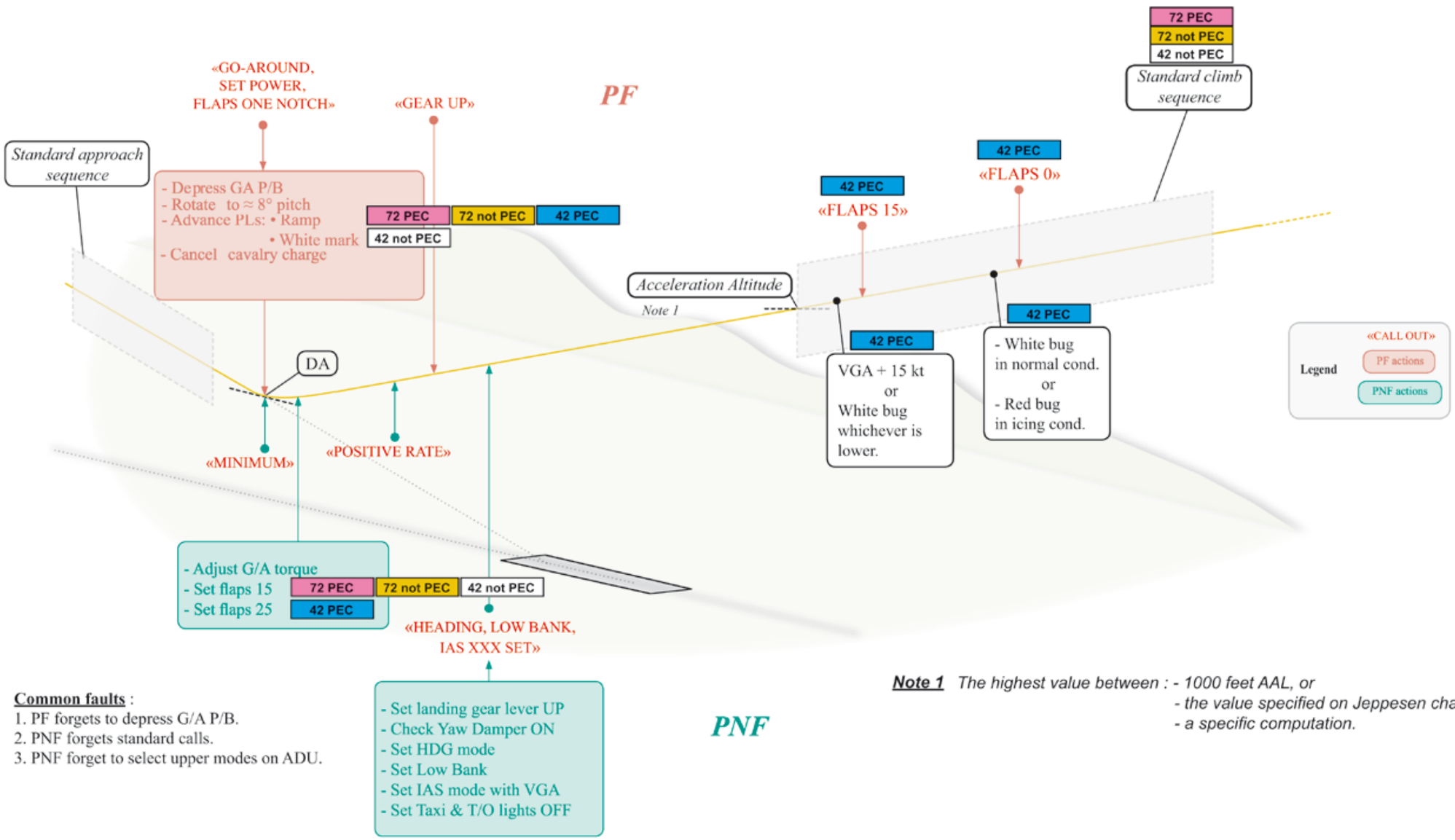
CAUTION : White bug + 10 may exceed 135 k
In this specific case, **refer to operators SOP**.

Note 1 White bug + 10 is conservative for High bank with flaps 15 in normal and in icing conditions.

ALL ATR

5. Go-around 2 engines

Normal or icing conditions



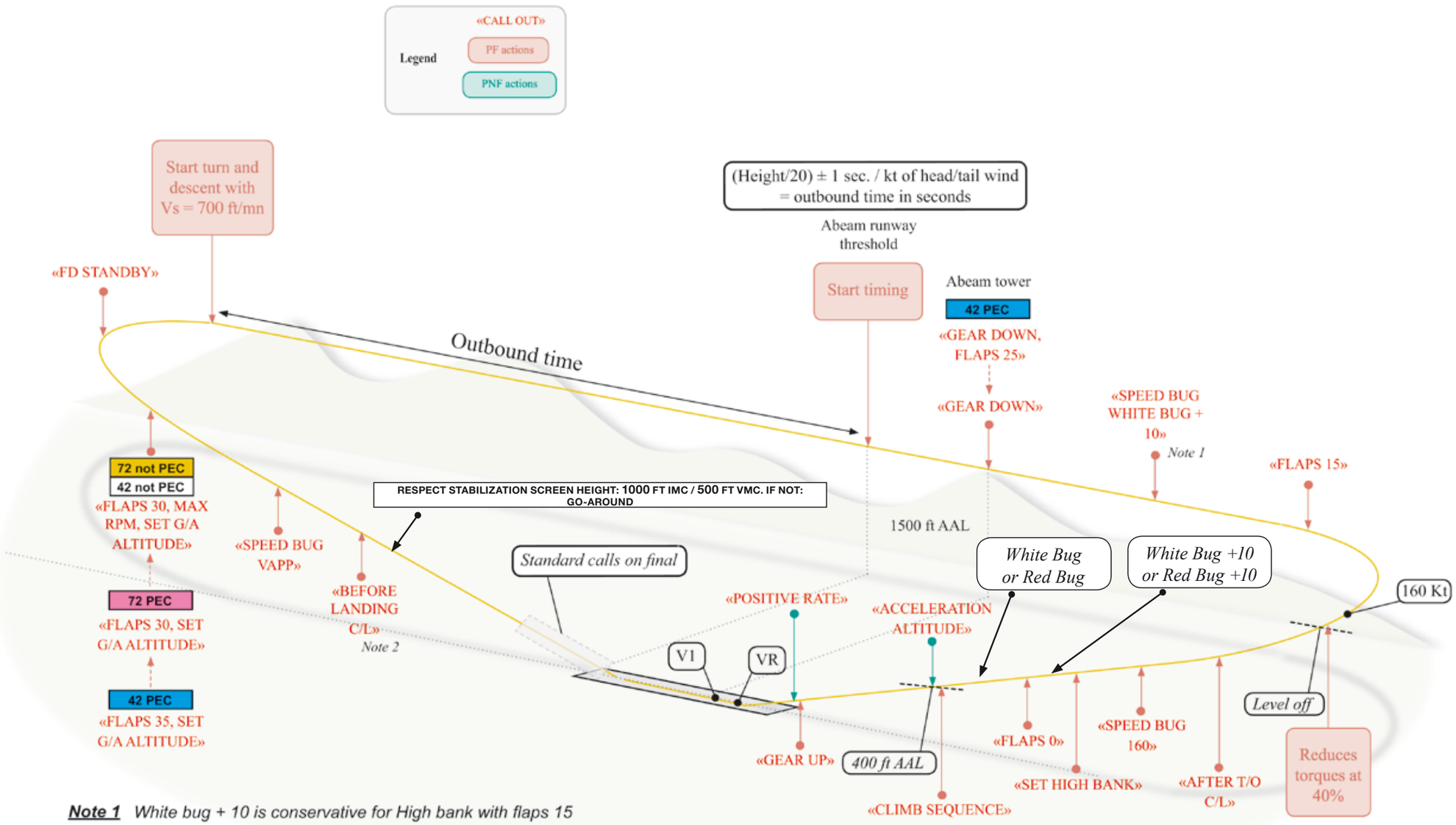
Common faults :
1. PF forgets to depress G/A P/B.
2. PNF forgets standard calls.
3. PNF forget to select upper modes on ADU.

Note 1 *The highest value between : - 1000 feet AAL, or*
- the value specified on Jeppesen chart, or
- a specific computation.

ALL ATR

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.

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