



## Flight Operations Briefing Notes

### Standard Operating Procedures

### Conducting Effective Briefings

## I Introduction

To ensure mutual understanding and effective cooperation among crewmembers and with ATC, in-depth **takeoff** and **approach / go-around** briefings should be conducted on each flight.

A thorough briefing should be conducted regardless of:

- How familiar the **departure airport / SID** or **destination airport / approach** may be; or,
- How often the crewmembers have flown together.

This Flight Operations Briefing Note provides generic guidelines for conducting effective and productive briefings.

Effective briefings should be short, structured, concise and adapted to the particular conditions of the takeoff or approach-and-landing.

The information provided hereafter has been expanded on purpose to provide an opportunity to review and discuss in details each briefing item.

## II Statistical Data

The quality of approach and go-around briefings is observed as a causal factor in approximately 50 % of approach-and-landing accident ( source : Flight Safety Foundation – 1998-1999 ), by affecting:

- Understanding of prevailing conditions;
- Horizontal or vertical situational awareness; and,
- Crew coordination.

### III Objectives of Briefings

Crew briefings ( i.e., PF to PNF briefings ) are aimed at the following objectives, in support of standard operating procedures (SOPs) :

- Define and communicate action plans and expectations, under normal or non-normal conditions;
- Confirm applicable task sharing (i.e., crew members' roles and responsibilities);
- Brief specific areas to the required level of details;
- Promote inquiry / advocacy and feedback;
- Ensure full understanding and agreement by both crew members on sequence of actions; and,
- Communicate objectives to other crew members (e.g., cabin crew, as applicable).

Briefings are also intended to enhance the flight crew and cabin crew preparedness for facing unusual requirements or responding to unanticipated conditions ( i.e., « **expecting the unexpected** » ).

### IV Briefing Techniques

The importance of **briefing techniques** often is underestimated, although effective briefings contribute to enhance crew standardization and communication.

The **style and tone** of the briefing play an important role; **interactive briefings** – i.e., confirming the agreement and understanding of the PNF after each phase of the briefing – provides more effective and productive briefings than an uninterrupted recitation terminated by the final query « **Any question ?** » .

Interactive briefings better fulfill an important purpose of the briefings, that is **to provide the PF and PNF with an opportunity to correct each other** (e.g., confirming the use of the correct and effective departure / approach chart, confirming the correct setup of nav aids for the assigned takeoff / landing runway, etc).

Briefings should be **structured** (i.e., follow the logical sequence of the takeoff / departure or approach / landing) and **concise**.

The routine and formal repetition of the same points on each sector may become counterproductive; **adapting and expanding the briefing** by **highlighting the special aspects** of the airport and departure / approach procedure or the prevailing weather conditions and circumstances result in more lively and effective briefings.

In short, the briefing should **encourage effective listening to attract the PNF's attention**.

The briefing should therefore be conducted when the workload and availability of the PNF permit an effective communication.

Any aspect that may affect normal operation (e.g., system failures, weather conditions or other particular conditions) should be carefully evaluated and discussed.

The briefing should help both the PF (giving the briefing) and the PNF (receiving and acknowledging the briefing) understanding the sequence of events and actions, as well as the special hazards and circumstances of the takeoff, departure, approach and landing (i.e., by creating a common mental model of the takeoff or approach).

Whether anticipated or not, changes in an air traffic control (ATC) clearance, weather conditions or landing runway require reviewing part of the initial briefing.

## V Timeliness of Briefings

Briefings should be conducted during low-workload periods.

The takeoff Briefing should be conducted while the aircraft is stationary (i.e., at the gate or other parking position).

Rushing during descent and approach is a significant factor in approach-and-landing incidents and accidents.

To prevent any rush in initiating the descent and the resulting increased workload in conducting the approach, the descent preparation and the approach and go-around briefings typically should be completed 10 minutes before reaching the top-of-descent.

## VI Scope of Briefings

A study of team performance indicates that the quality of the pre-flight briefings ( i.e., flight crew / cabin crew briefing and flight crew takeoff briefing) shapes the quality of the crew performance throughout the entire flight.

The pre-flight briefings start at the dispatch office when the Dispatcher hands over the Flight Folder / Dossier to the flight crew, for review and final decision on the route, cruise flight level and fuel quantity.

The on-board takeoff briefing should include the following generic aspects of the takeoff and departure phase :

- Takeoff and departure conditions (i.e., weather and runway conditions, special hazards);
- Lateral and vertical navigation (i.e., intended use of automation);
- Communications;
- Non-normal procedures, as applicable; and,
- Review and discussion of takeoff and departure hazards.

The **approach and go-around briefings** should cover the following generic aspects of the approach and landing, including a possible missed approach and a second approach or diversion:

- Approach conditions (i.e., weather and runway conditions, special hazards);
- Lateral and vertical navigation (i.e., intended use of automation);
- Instrument approach procedure details;
- Communications;
- Non-normal procedures, as applicable; and,
- Review and discussion of approach-and-landing hazards.

These aspects are expanded and discussed in details in this Flight Operations Briefing Note.

## VII Takeoff Briefing

The **takeoff briefing** is conducted by the crewmember designated as **Pilot Flying** (PF) for the flight leg.

The takeoff briefing enables the PF to **inform the PNF** of the planned course of actions (i.e., expectations, roles and responsibilities, unique requirements) for both **normal** and **abnormal conditions** during the takeoff phase.

A full takeoff briefing should be conducted on the first sector of the day, subsequent briefings should be limited to the specific aspects of each individual airport / runway / takeoff / SID conditions.

The takeoff briefing should be guided and illustrated by referring to the applicable **FMS pages** and to the **ND** (e.g., to visualize the departure route and confirm the various data entries, ...).

An expanded review of the items to be covered in the takeoff briefing – **as practical and appropriate for the conditions of the flight** – is provided hereafter.

### VII.1 ATIS :

Review the last ATIS message, including :

- Expected takeoff runway in use and SID;
- QNH / QFE;
- Transition altitude (if variable with QNH);
- Weather, OAT / Dew point;
- Wind and runway condition.

#### VII.2 NOTAMs :

Review and discuss takeoff and departure NOTAMs, as applicable, for possible operational impact, e.g. :

- Unserviceable nav aids, change of departure routing, airspace restrictions, ....; and/or,
- Specific threats / hazards (e.g., work-in-progress on taxiways and/or runways, obstructions, man-made obstacles, volcanic activity, ...).

In case of any doubt on the contents or interpretation of a NOTAM, contact the company Dispatch office for confirmation.

#### VII.3 Weather Briefing :

Based on the weather briefing conducted by the dispatcher and on last ATIS information, discuss the effect of prevailing weather conditions on takeoff and departure procedures (e.g., use of weather radar in case of suspected windshear, requirement for a takeoff alternate, use of engine and wing anti-ice, ...).

#### VII.4 Dispatch Conditions ( MEL ) affecting Takeoff Performance :

Review and discuss any dispatch condition (i.e., dispatch under MEL/DDG) that affects :

- Takeoff performance (i.e., takeoff weight and/or speeds); or,
- Fuel consumption.

Ensure that dispatch conditions are compatible with the flight to be performed and do not combine conditions (i.e., inoperative items) that cannot be combined (i.e., exclusive dispatch conditions).

#### VII.5 Takeoff Performance Limitations :

Review and discuss prevailing takeoff performance limitation (e.g., runway, second segment, obstacle, ...) as well as any specific takeoff performance limitation (i.e., minimum climb gradient during SID, non-standard turn, EOSID, ...).

#### VII.6 Weight and Balance Data - Load Sheet Review :

Review weight and balance data (i.e., preliminary data from the Flight Folder / Dossier or final Load & Trim Sheet).

#### VII.7 Runway Condition and Wind :

Confirm the expected takeoff runway, the runway condition and wind component.

#### VII.8 Takeoff Data :

Confirm the computed takeoff data for the prevailing conditions, i.e. :

- Slats / Flaps configuration;
- V-speeds (i.e., V1, VR, V2 – F, S, Green Dot speeds or V3, V4, V<sub>FTO</sub>);
- Thrust setting (i.e., TOGA or FLEX ...); and,
- Confirm the air bleed configuration for takeoff, i.e. :
  - Air-conditioning packs / engine anti-ice / wing anti-ice.

#### VII.9 Noise Abatement Procedure (as applicable) :

Review and discuss the applicable noise-abatement procedure, particularly if the noise abatement procedure is not standard and / or not programmed in the FMS.

#### VII.10 Departure Route ( SID ) :

Review and discuss the following elements, with reference to the FMS CDU, ND , FCU and chart :

- First cleared altitude (if departure clearance available);
- Transition altitude;
- Routing (i.e., speed and/or altitude constraints, airspace restrictions, terrain / MSA);
- Specific procedures in case of loss of communication (NORDO); and,
- Special procedures or considerations, as applicable.

#### VII.11 Nav aids Setup – Use of Automation :

Set nav aids as required to fly and/or cross-check the correct tracking of the SID by the FMS, or in readiness to fly the EOSID or for an immediate return.

#### VII.12 Rejected Takeoff Briefing :

The rejected takeoff ( RTO ) part of the takeoff briefing should include the following sections :

- **Stop or Go Decision;**
- **Stop Actions; and,**
- **Go Actions.**

The RTO briefing is described and discussed in details in the Flight Operations Briefing Notes **Revisiting the Stop or Go Decision.**

#### VII.13 Taxi to Active Runway :

The taxi phase should be considered as a **critical phase of flight** and be carefully briefed.

Using the airport chart, perform a review of the expected taxi routes with special attention to « **hot spots** » (i.e., intersections where the risk of confusion and the resulting risk of taxiway or runway incursion may exist).

**Plan the execution of checks and actions** to be performed during taxi in order to prevent distraction by cockpit duties when approaching hot spots.

Pay particular attention to **temporary situations** such as **work in progress**, other unusual activity and recent changes in airport layout.

When **taxi instructions** are received from ATC, PF and PNF should refer again to the airport diagram to verbally agree on the assigned runway and taxi route, including instructions to hold short of or cross an intersecting runway.

Be aware that the expectations established during the takeoff briefing can be significantly altered with a different and unexpected taxi clearance (i.e., be prepared to follow the clearance or instructions you actually received, and not the one you expected to receive).

As applicable, discuss the **low-visibility taxi procedures and routes** (if published) and the characteristics of the airport surface movements guidance and control system (SMGCS).

For more information on the **prevention of taxiway and / or runway incursions**, refer to the Flight Operations Briefing Note dedicated to **Preventing Runway Incursions**.

#### VII.14 Deviations from SOPs :

Any intended deviation from SOPs or from standard calls should be discussed during the briefing.

#### VII.15 Briefing Confirmation during Taxi :

Confirm the elements of the detailed takeoff briefing for possible changes (e.g., runway change, intersection takeoff, runway condition change, revised departure clearance, ...).

**Confirm the takeoff data** or modify the aircraft configuration (i.e., flaps, bleeds, ...), the thrust setting (i.e., FLEX or TOGA) and the FMS / FCU setup, as required.

## VIII Cruise Briefing(s)

As practical, depending on the duration of the cruise phase, it is recommended performing a structured cruise briefing – or repeated cruise briefings - covering the following aspects, as applicable, e.g. :

- **Strategy in case of engine failure** (e.g., speed strategy depending on obstacles and ETOPS/non-ETOPS nature of flight, preferred diversion airfield depending on aircraft position, ...); and,
- **Strategy in case of cabin depressurization** (e.g., speed strategy, ...).

## IX Approach Briefing

FMS pages and ND should be used to guide and illustrate the briefing, and to confirm the various data entries.

An expanded review of the items to be covered in the approach briefing – **as practical and appropriate for the conditions of the flight** – is provided hereafter.

### IX.1 Aircraft Status :

Review the aircraft STATUS, as applicable (i.e., any failure or malfunction experienced during the flight) and discuss the possible consequences in terms of operation and performance (i.e., final approach speed and landing distance).

### IX.2 Fuel Status :

Review the fuel status:

- Fuel on board;
- Minimum diversion fuel; and,
- Available holding fuel and time.

### IX.3 ATIS :

Review and discuss the following items:

- Runway in use (type of approach);
- Expected arrival route (standard terminal arrival [ STAR ] or radar vectors);
- Altimeter setting (QNH or QFE, as required),
  - For international operations, be aware of the applicable altimeter setting unit (hectopascals or inches-of-mercury);
- Transition level (unless standard transition levels are used in the country or for the airport);



- Terminal weather (e.g., icing conditions, turbulence, suspected low-level windshear, ceiling and visibility / RVR, ...); and,
- Advisory messages (as applicable).

#### IX.4 NOTAMs :

Review and discuss enroute and terminal NOTAMs, as applicable, for possible operational impact (e.g., unserviceable nav aids, airspace restriction, obstructions / man-made obstacles, ...) or additional threat / hazards.

In case of any doubt on the contents or interpretation of a NOTAM, contact the company Flight Watch office for confirmation.

#### IX.5 Top-of-Descent Point :

Confirm or adjust the top-of-descent ( TOD ) point, computed by the FMS, as a function of the expected arrival (i.e., following the published STAR or expecting radar vectors).

Be aware of the resulting **track-distance** between the TOD point and the runway threshold.

#### IX.6 Approach Chart :

Review and discuss the following items using the approach chart and the FMS/ND (as applicable):

- **Designated runway** and **approach type** (confirm the designated PF for the approach, in line with company policy for the type of approach to be flown);
- Chart **index number** and **date**;
- **Minimum Safe Altitude** (MSA) - reference point, sectors and minimum sector safe altitudes;
- **Let-down nav aid(s)**, type, frequency and identifier (confirm the correct setup of nav aids);
- **Radio frequencies** (discuss special procedures in case of loss of communications – NORDDO – as applicable);
- **Airport elevation**;
- **Approach transitions** (IAF, IF, other fixes, holding pattern, altitude and speed constraints/restrictions, required nav aids setup);
- **Final approach course** (and lead-in radial, as applicable);
- **Terrain features** (location and elevation of hazardous terrain or man-made obstacles);

- **Approach profile** view (i.e., including crossing altitudes) :
  - Final approach fix (FAF);
  - Final descent point (if different from FAF);
  - Outer marker (OM), as applicable;
  - Visual descent point (VDP), if indicated on approach profile or if computed by flight crew;
  - Missed-approach point (MAP);
  - Typical vertical speed (V/S) for the expected final approach ground speed (GS); and,
  - Touchdown zone elevation (TDZE).
- **Missed approach** :
  - Lateral and vertical navigation; and,
  - Speed restrictions.

Refer to paragraph **X.** for a detailed description of the **Go Around Briefing.**

- **Visibility/RVR minimums** (and ceiling, as applicable);
- **Descent/decision minimums**:
  - MDA(H) for non-precision approaches;
  - Barometric DA(H) for CAT I ILS approaches; or,
  - Radio-altimeter DH for CAT II and CAT III ILS approaches.
- **Local airport requirement** (e.g., noise restrictions on the use of thrust reversers, etc).

#### IX.7 Airport Chart / Diagram :

Review and discuss the following items using the airport chart:

- Runway length, width and slope;
- Approach and runway lighting, and other expected visual references;
- Specific hazards (as applicable); and,
- Intended turnoff taxiway.

If another airport is located in the close vicinity of the destination airport, relevant details or procedures should be discussed for awareness purposes.

#### IX.8 Use of Automation :

Discuss the intended use of automation for vertical / lateral guidance and for speed guidance, depending on FMS navigation accuracy (only for aircraft not equipped with GPS or if GPS PRIMARY LOST is displayed):

- Use of **FMS** vertical navigation and lateral navigation or use of **selected** vertical modes and lateral modes; and,
- Step-down approach (if a constant-angle non-precision approach – CANPA - is not available or not possible).

#### IX.9 Use of Aircraft Systems :

Discuss the use of the following aircraft systems, depending on prevailing conditions :

- Nacelle / engine anti-ice;
- Wing anti-ice;
- Weather radar; and,
- [ ... ].

#### IX.10 Landing and Stopping :

Discuss the intended **landing flaps configuration** (if different from full flaps).

Review and discuss the following features of the intended landing runway:

- **Surface condition** (i.e., nature and depth of contaminant, as applicable);
- Intended use of **autobrake** (i.e., intended mode) and **thrust reversers**; and,
- Expected **runway turn-off** taxiway.

#### IX.11 Taxi to Gate :

The taxi phase should be considered as a **critical phase of flight** and be carefully briefed.

Review and discuss the following items :

- Anticipated taxiways to taxi to the assigned gate (e.g., back-track on active runway or on parallel runway, with special emphasis on the possible crossing of active runways, as applicable);
- Non-standard lighting and/or marking of taxiways; and/or,
- Possible work in progress on runways and taxiways.

As required, this review and discussion can be delayed until after landing.

#### IX.12 CAT II / CAT III ILS briefing :

For CAT II and CAT III ILS approaches, perform the specific CAT II (CAT III) briefing in accordance with company' SOPs.

#### IX.13 Deviations from SOPs :

Any intended deviation from SOPs or from standard calls should be discussed during the briefing.

### X Go Around Briefing

A detailed go-around briefing should be included in the descent-and-approach briefing, highlighting the key points of the go-around maneuver and missed-approach, and the task sharing under normal or abnormal / emergency conditions.

The go-around briefing should recall briefly the following key aspects:

- **Go-around callout** (i.e., a loud and clear **go-around / flaps** call);
- **PF/PNF task sharing** (i.e., flow of respective actions, including use of AP, speed restrictions, go-around altitude, parameter-excessive-deviation callouts);
- **Intended use of automation** (i.e., automatic or manual go-around, use of FMS lateral navigation or use of selected modes for missed-approach);
- **Missed-approach lateral navigation and vertical profile** (e.g., speed limitations, airspace restrictions, highlighting obstacles and terrain features, ..., as applicable); and,
- **Intentions** (i.e., second approach or diversion) :
  - In case of a second approach, discuss the type of approach (i.e., if a different runway and/or type of approach is envisaged); and,
  - Confirm the minimum diversion fuel.

It is recommended to briefly recall the main points of the go-around and missed-approach when established on the final approach course or after completing the landing checklist (as deemed practical).

## XI Summary of Key Points

The takeoff, cruise, approach and go-around briefings should be adapted to the specific conditions of the flight and focus on the items that are relevant for the particular takeoff, departure, cruise phase (e.g., ETOPS, ...), approach and landing (such as specific flight-phase-related hazards).

The approach and go-around briefing should include the following **ALAR-critical items**:

- Minimum safe altitude;
- Terrain and man-made obstacles features;
- Weather and runway condition;
- Other approach hazards, as applicable (e.g., visual illusions);
- Applicable minimums (visibility or RVR, ceiling as applicable);
- Applicable stabilization height (approach gate);
- Final approach flight path angle (and vertical speed); and,
- Go-around altitude and missed-approach initial steps.

## XII Associated Briefing Notes

The following Flight Operations Briefing Notes should be reviewed in association with the above information for a complete overview of the operational and human factors associated with the conduct of effective briefings :

- **Operating Philosophy - SOPs**
- **Preventing Runway Incursions**
- **Understanding the Takeoff Speeds**
- **Revisiting the Stop or Go Decision**
- **Being Prepared for Go-around**
- **Effective Pilot / Controller Communications**
- **Human Factors in Incidents and Accidents**
- **CRM Issues in Incidents and Accidents**

### XIII Regulatory References

- ICAO – Annex 6 – Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes, Appendix 2, 5.16.
- ICAO – Procedures for Air navigation Services – Aircraft operations (PANS-OPS, Doc 8168), Volume I – Flight Procedures (Post Amendment No 11, applicable Nov.1/2001).
- ICAO – Preparation of an Operations manual (Doc 9376).
- FAR 121.315 – Cockpit Check Procedure, for normal and non-normal conditions.
- JAR-OPS 1.1045 and associated Appendix 1, paragraphs A.8 – Operating Procedures and B.2.1 – Normal Procedures.

### XIV Airbus References

- Airbus model of JAR-OPS-compliant Operations Policy Manual – Chapter 8 – Operating Procedures.
- Airbus Flight Crew Operating Manual (FCOM) – Standard Operating Procedures (SOPs) chapter.

This Flight Operations Briefing Note (FOBN) has been adapted from the corresponding ALAR Briefing Note developed by Airbus in the frame of the Approach-and-Landing Accident Reduction (ALAR) international task force led by the Flight Safety Foundation.

This FOBN is part of a set of Flight Operations Briefing Notes that provide an overview of the applicable standards, flying techniques and best practices, operational and human factors, suggested company prevention strategies and personal lines-of-defense related to major threats and hazards to flight operations safety.

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