



Enhancing Safety through CFIT Prevention, EGPWS, and PBN Implementation

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Asky Airlines



INTRODUCTION



- Welcome to today's presentation on Enhancing Safety through the use of CFIT, EGPWS, and PBN.
- We will explore these critical aviation safety concepts and how they apply specifically to ASKY Airline

ASKY Airline



ASKY Airline :

- **ASKY** airline is a private company based in Lome - Togo. The airline operates to over 24 stations with **11** B737NG and 2 B737MAX-8.
- Safety in aviation is not just a goal but a necessity. It is a multi-faceted commitment that encompasses human lives, economic considerations, regulatory compliance, and the reputation of airlines and the entire industry.

CONTROLLED FLIGHT INTO TERRAIN (CFIT)



Definition:

Controlled Flight into Terrain (CFIT) occurs when an airworthy aircraft under the complete control of the pilot is inadvertently flown into terrain, water, or an obstacle.

The pilots are generally unaware of the danger until it is too late.

CONTROLLED FLIGHT INTO TERRAIN

(CFIT)



Typical causes of CFIT Accidents and RISK Factors

Typical causes :

- Poor judgement
- Poor airmanship
- Failure in CRM
- Lack of positional awareness
- Flight handling

The Risk factor includes:

- Terrain
- Non Precision Approach
- Short Runway
- Current Weather,
- Unexpected Weather condition change

ASKY PRECAUTION AND AVIODANCE STRATEGIES



- Airplane Equipment
- Crew training
- Use of Accurate data and documentation.

ASKY PRECAUTION AND AVIODANCE STRATEGIES



➤ Airplane Equipment

ASKY operates B737-NGs and B737-MAX, all equipped with;

A Ground Proximity Warning Systems (GPWS) with Forward Looking Terrain Avoidance Function (EGPWS).

FMC with Nav data software U10.8a and later versions

ASKY PRECAUTION AND AVIODANCE STRATEGIES



➤ **Crew training/Operational procedures**

ASKY Operational Manual part A – 8.3.1.2: Stabilized Approach And CFIT Avoidance (RANT 6 OPS-1.D.260)

In order to ensure a safe final approach and landing, it is essential to reduce speed, establish the required configuration (flaps and gear) and stabilize the aircraft in a timely manner

Initial and Recurrent Trainings :

ASKY Operational Manual part D defines the CFIT training as a mandatory training in ground course and in simulator;

ASKY PRECAUTION AND AVIODANCE STRATEGIES



- ✓ **Every 3 years**, the recurrent training includes CFIT and proper response to EGPWS alerts;
- ✓ The recurrent training for CRM in ASKY is **1 year**, to emphasizes on crew coordination and Respect of the SOPs;
- ✓ Regular sensitization of crew about stabilized approaches (SPIs) via **staff instructions, safety bulletins** and simulator trainings.
- ✓ Good communication with ATC (minimum English proficiency level 4 is required for all ASKY pilots)

ASKY PRECAUTION AND AVOIDANCE STRATEGIES



- ✓ ASKY Flight Data Analysis Action Group –(FDA Action Group), once a month access FDA to address relevant safety occurrences and takes mitigation action.
- ✓ During indoctrination courses, crew are briefed on OMC-ASKY route manual, where they familiarize with routes affected by high terrain, or depressurization escape routes, and airports with engine out procedures.
- ✓ Every crew must have briefing for all CAT B airport before operating it.

ASKY PRECAUTION AND AVIODANCE STRATEGIES



- **ALWAYS FOLLOW EGPWS COMMANDS;**
- **USE SOP'S**
- **BE FAMILIAR WITH THE TERRAIN**

ASKY PRECAUTION AND AVIODANCE STRATEGIES



➤ Use Of Accurate Data and documentation.

✓ Performance Data Availability

ASKY Flight **Operations Engineering** and documentation has procedures to assist crew avoiding CFIT by providing them with accurate and complete data and documentation.

ASKY PRECAUTION AND AVIODANCE STRATEGIES



✓ Documents availability

ASKY Flight operations Documentations has a procedure to make available on-board all airplanes, and in a dedicated place for crew, all required manuals:

- Company Operations manuals: OMA, OMB, OMC, Runway Analysis.
- Constructors manual necessary to calculate performance data (AFM, FPPM, FCOM, QRH)

*ASKY has subscription with Jeppesen to have regular (**once a week**) revision packages for approach and landing chart, and Jeppesen navigation charts*

ASKY PRECAUTION AND AVIODANCE STRATEGIES



✓ **Electronic Data**

Every **28 calendar Day**, the Navigation Database are updated on all our airplanes by maintenance while for the Terrain database is updated every **74 calendar days**;

Flight Operations engineering make available to the maintenance department, at least **72h prior expiry** date of the Navigational database.

At least every year, but not later than every **???** calendar days, we also update the **EGPWS** data base on all our airplanes.

Note: For the revision schedule, Asky received an observation from ANAC-Togo for which we are working on for safety



ASKY PRECAUTION AND AVIODANCE STRATEGIES



✓ **Critical Information dissemination process**

Flight Operations has critical information dissemination process that takes into account NOTAMs (displaced threshold, work in progress on runway or taxiway, ...), Airport information Notices, Navigational data Alerts, Terrain data Alerts, etc...

PBN PRESENTATION



➤ Definition

PBN “ Performance-Based Navigation” It is a concept in aviation that focuses on aircraft navigation and guidance systems that are based on aircraft performance capabilities and operational requirements rather than relying solely on ground based navigation aids.

It also allows for more flexibility and efficient flight paths, improving safety and reducing environmental impact.

PBN PRESENTATION



➤ Regulatory Requirements and Approval Process

We know that the regulatory requirement for implementing PBN procedures can vary by country and aviation authority. These requirements typically involve documentation, equipment and training standards.

Asky is currently **Not Approved** for PBN operation but the approval process with the Aviation authority is ongoing, which is currently at phase 3 of 5 with phase 5 been the final phase for approval.

PBN PRESENTATION



➤ **Equipment:**

According to the **RANT OPS-1.L.055**, Equipment for operations covered by a performance-based navigational (PBN) specification

1. For operations covered by a prescribed performance-base navigation (PBN), in addition to the equipment required under provisions **L.005 and L.025** of **RANT 06 OPS- 1** (1), the airplane must be equipped with navigational equipment that allows them to respect the prescribed navigation specification

PBN PRESENTATION



➤ **Equipment:**

2. Information on the capabilities of the airplane relative to the navigation specification(s) must be included in the flight manual or other airplane document approved by the state of design or state of registration;
3. Information on the capabilities of the airplane relative to the specification(s) navigation must appear in the MEL.

PBN PRESENTATION



➤ Trainings Pilots:

Training pilots for PBN operation is a critical aspect of its implementation and Asky ensured that the pilots receive this training

*Ground Training:

Pilots received theoretical training on PBN concept and manuals were issued, PBN Manuals, OMA Extract PBN from the Operations manual Part **A 8.3.2.8** titled PBN Operations, PBN Presentation slides and lastly PBN Questionnaires were issued with a pass mark of 75%.

PBN PRESENTATION



➤ Trainings Pilots:

*Simulator Training:

Simulator sessions were conducted to allow the pilot to practice PBN procedures in a safe and controlled environment. The Pilots were issued PBN training forms, RNP approach checklist and the simulator training syllabus.

A staff instruction was issued to the pilots stating the importance of PBN training in accordance with the Operations manual **Part D 1.8** titled PBN Training.

PBN PRESENTATION



➤ **Trainings Pilots:**

Documentation record for ground and simulator training for the pilots are maintained to demonstrate compliance with regulatory requirement.

With PBN approval, we can enhance our CFIT avoidance strategy.

Thank You for your attention



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