Controlled Flight Into Terrain - CFIT

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IATA AME

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Controlled Flight Into Terrain - Detailed Implementation Plan (CFIT DIP)

Measures to enhance the effectiveness of Enhanced Ground Proximity Warning System / Terrain Avoidance and Warning System (EGPWS/TAWS)

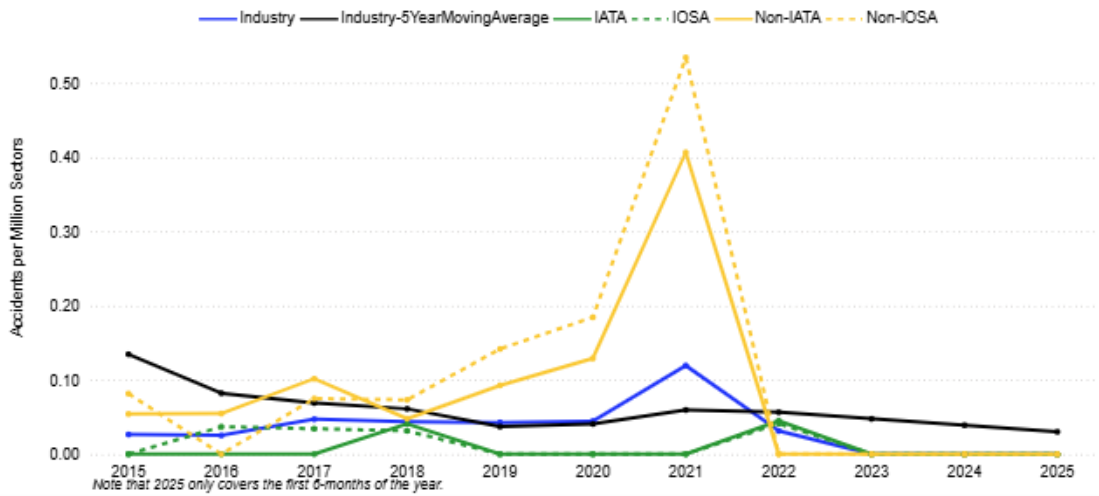
CFIT Global Accidents From 2015 - 2024

Accidents	Fatal Accidents	Fatalities Onboard	Other Fatalities	Jet	Turboprop	Passenger	Cargo	IATA	IOSA
13	11	215	35	1	12	7	6	2	4

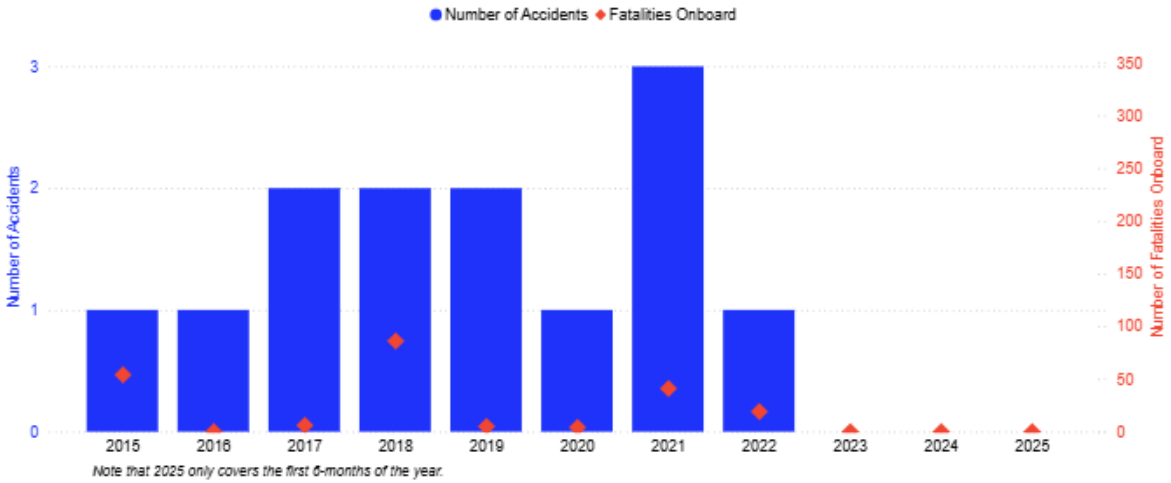
Accidents	Fatal Accidents	Fatalities Onboard	Other Fatalities	Jet	Turboprop	Passenger	Cargo	IATA	IOSA
13	11	215	35	1	12	7	6	2	4

Toggle Region

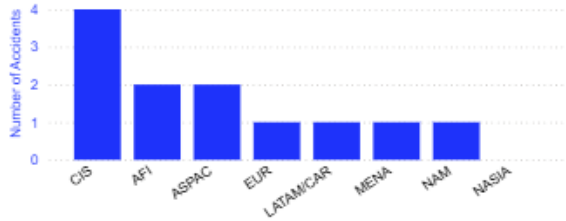
Accident Rate (per Million Sectors) by Year * Data source IATA



Accidents and Fatalities Onboard by Year * Data source IATA

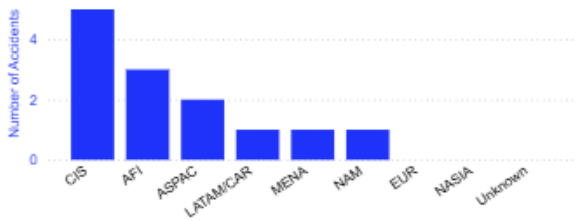


Accidents by Region of Operator * Data source IATA



Note that 2025 only covers the first 6-months of the year.

Accidents by Region of Occurrence * Data source IATA



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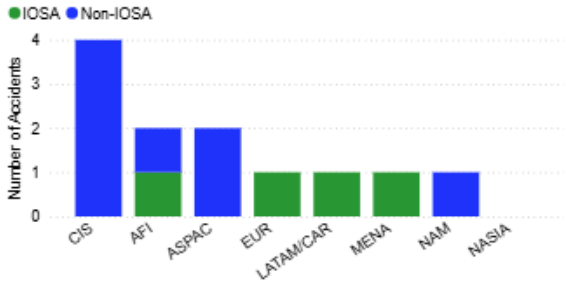

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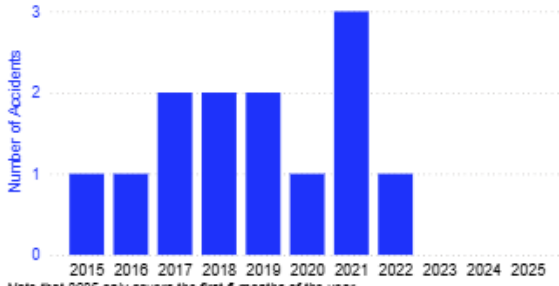
Accidents by Year * Data source IATA



Note that 2025 only covers the first 6-months of the year.

Accidents by Phase of Flight * Data source IATA

Note that 2025 only covers the first 6-months of the year.

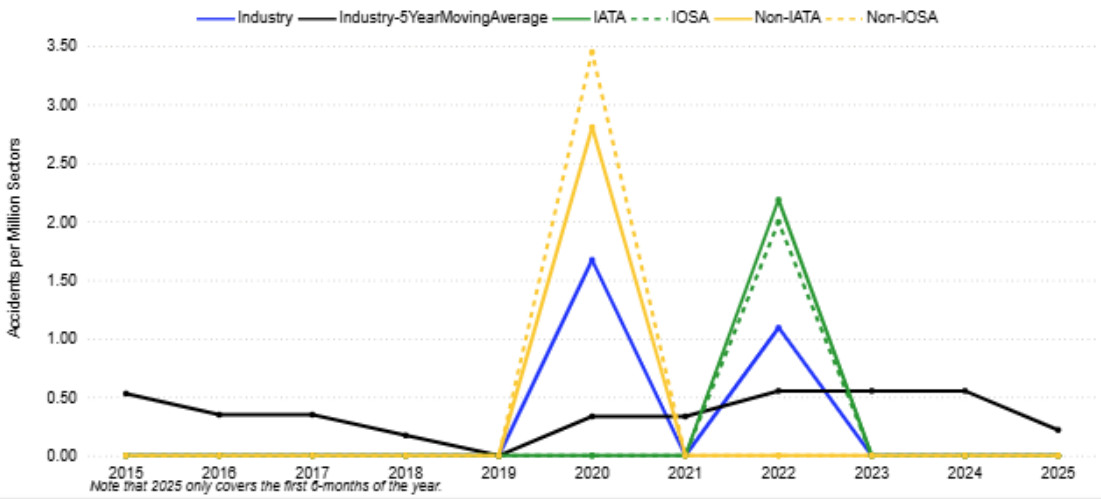
CFIT AFI 2015 - 2024

Accidents	Fatal Accidents	Fatalities Onboard	Other Fatalities	Jet	Turboprop	Passenger	Cargo	IATA	IOSA
2	2	23	0	0	2	1	1	1	1

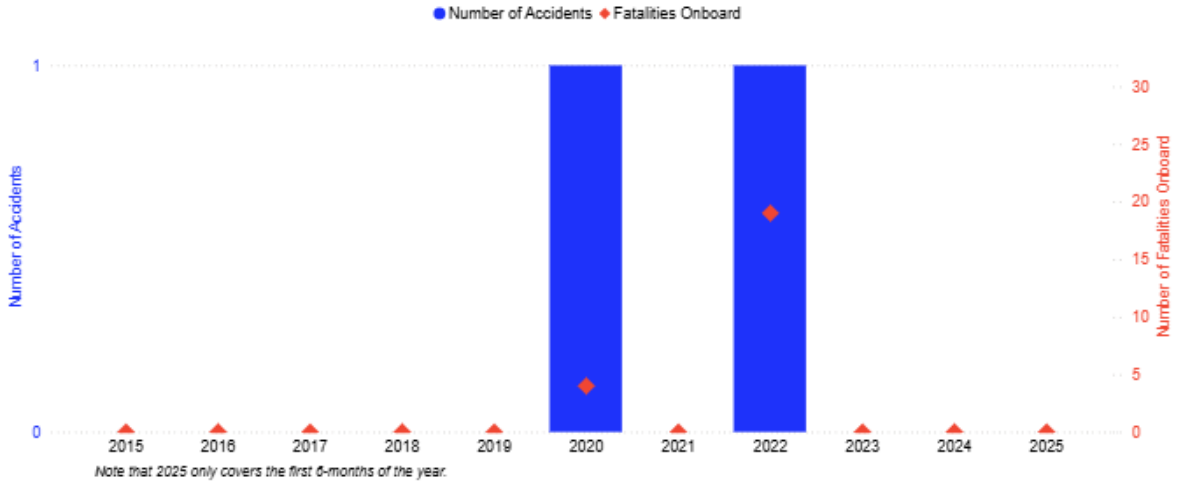
Accidents	Fatal Accidents	Fatalities Onboard	Other Fatalities	Jet	Turboprop	Passenger	Cargo	IATA	IOSA
2	2	23	0	0	2	1	1	1	1

Toggle Region

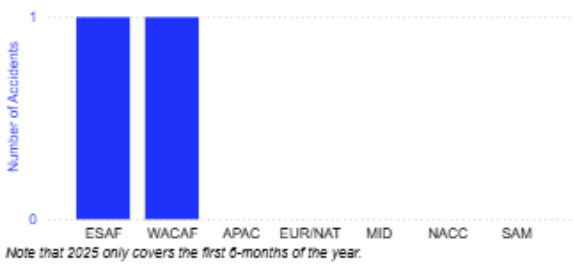
Accident Rate (per Million Sectors) by Year * Data source IATA



Accidents and Fatalities Onboard by Year * Data source IATA



Accidents by Region of Operator * Data source IATA



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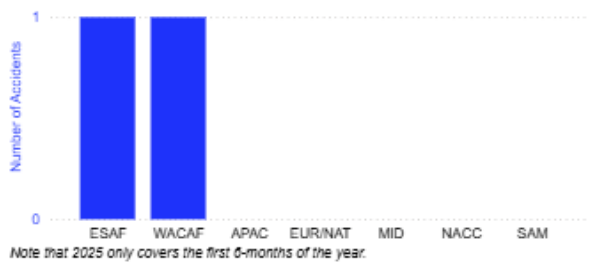

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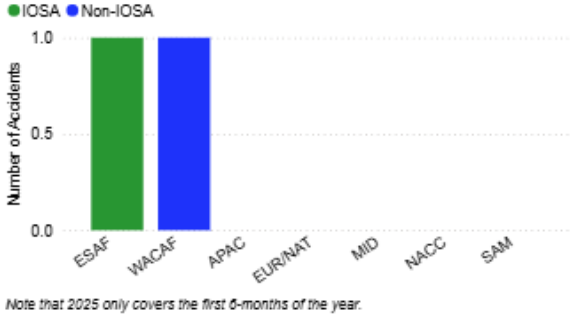
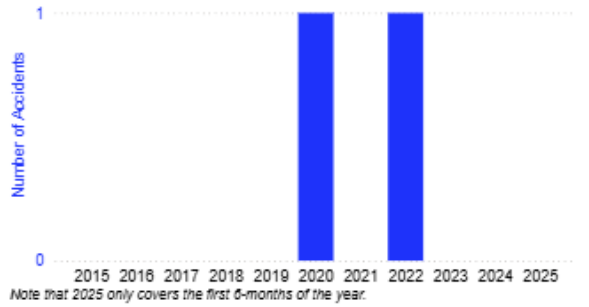
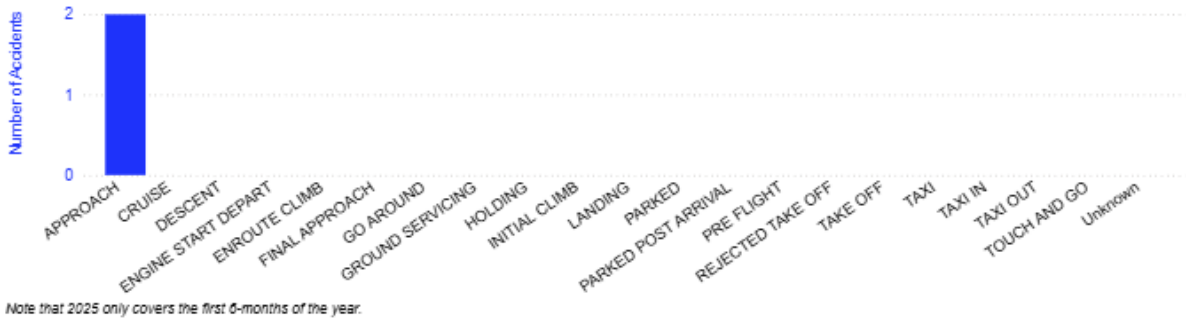


Accidents by Year * Data source IATA



Accidents by Phase of Flight * Data source IATA



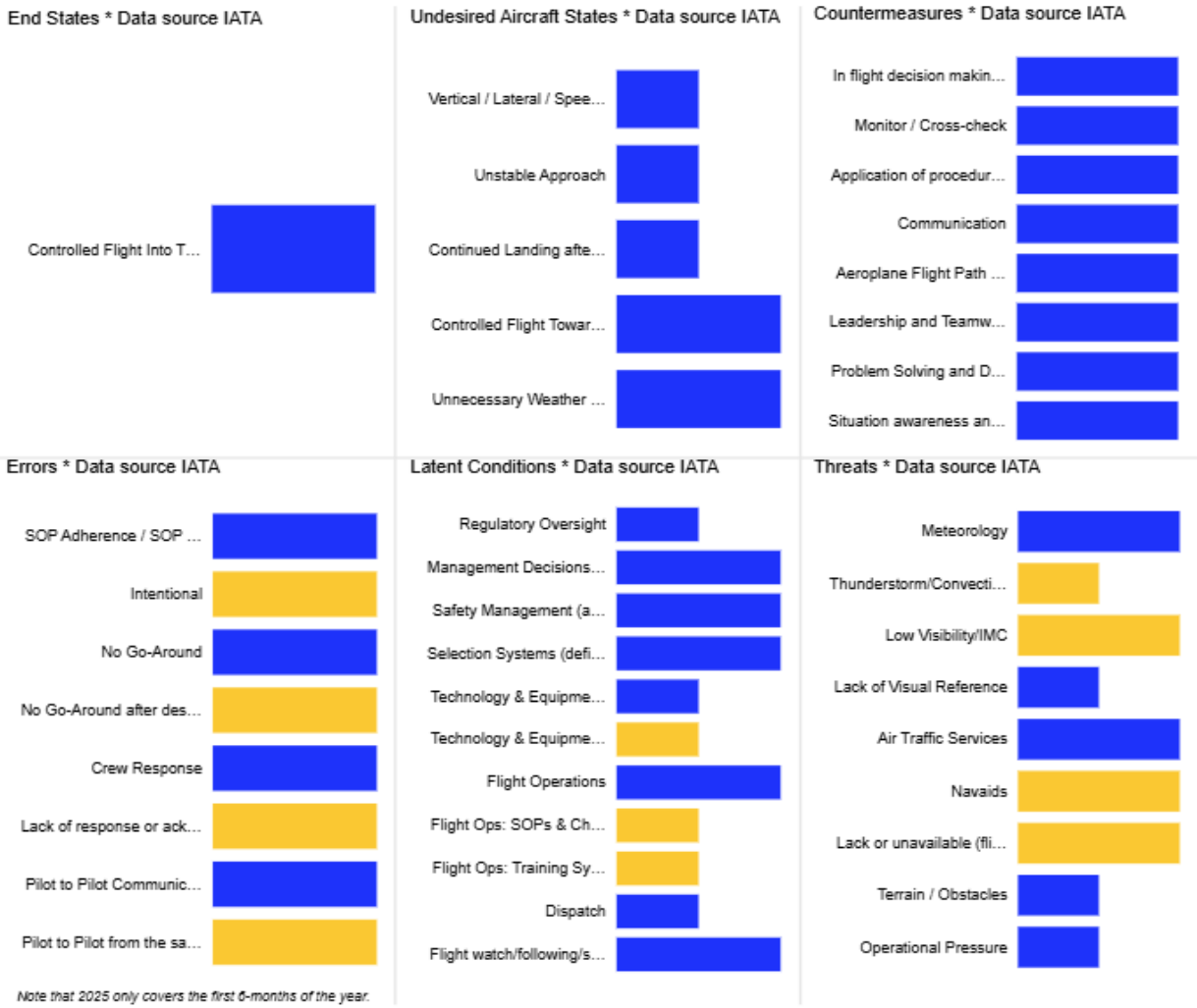
- Insufficient data detracts from accurate safety analysis!
  - Need to encourage better data provision

- 8 accidents - globally (24%) could not be classified due to insufficient data and 3 of these involved AFI based operators.

Threat and Error Management (TEM)

Accidents	Fatal Accidents	Fatalities Onboard	Other Fatalities	Jet	Turboprop	Passenger	Cargo	IATA	IOSA
2	2	23	0	0	2	1	1	1	1

Main categories **Subcategories**



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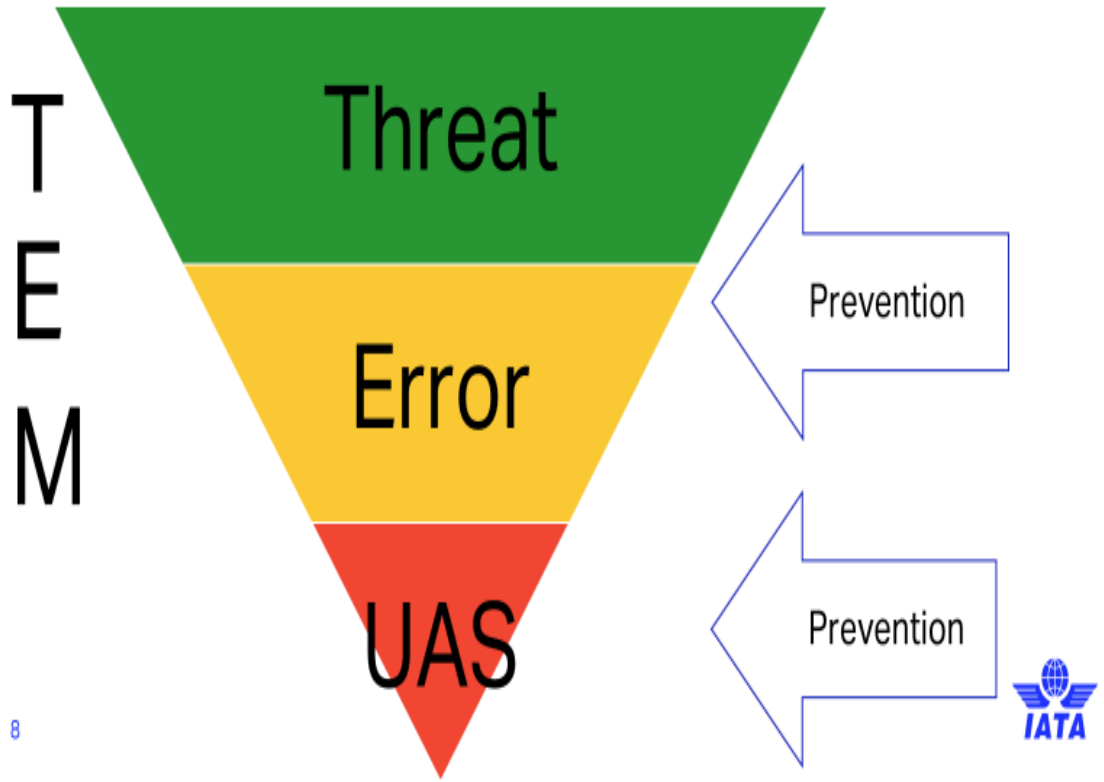

6 October 2025

Accident Rate (per Million Sectors) by Region of Operator * Data source IATA

Legend:
- 2025
- 2024
- 2020 - 2024 Average

Industry
0.00
0.00
0.04

IATA Members
0.00
0.00
0.01

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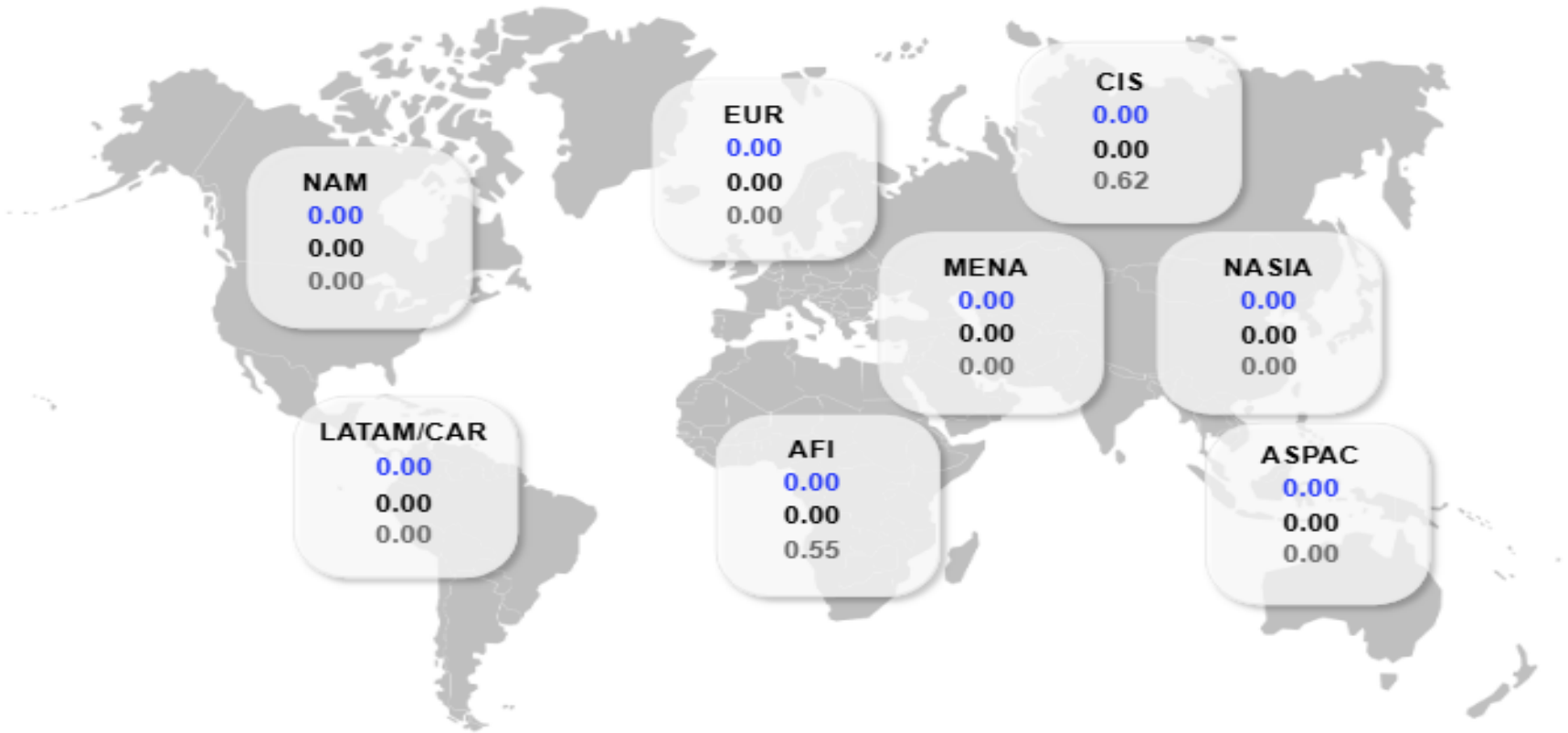
Toggle Region



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CFIT DIP Recommendations

1. Ensure EGPWS Software and Terrain/Obstacle/Runway database are kept up to date

2. Ensure GPS/GNSS is used as a position source for the EGPWS

3. Ensure a policy is in place that at least one pilot selects terrain display during critical phases of flight (such as climb and descent below MSA) for additional situational awareness. If weather is not a threat, then both pilots could decide to select terrain display

4. Establish a training program to ensure flight crew is trained to respond to EGPWS alert effectively

5. Recommend airlines to have procedures to ensure that EGPWS equipment always remains activated and serviceable

6. Pilots and operators should promptly notify the respective authorities of the interference location and the relevant ATC if they experience GPS anomalies

7. Consult with the IATA/Honeywell Performance assessment of pilot response guidance material (GM) and recommendations

1: EGPWS Software & Terrain Database are kept up to date

- States and Regulators should ensure the navigation references are updated in accordance with WGS-84
- Regulators to check if the airlines keep the database and software up to date
- Operators should have a policy in place or a program of continuous maintenance that periodically checks the system operation, updates the runway, terrain and obstacle databases and EGPWS software to the latest available
- Guidance to airline's Technical Operations dept. (Engineering & Maintenance) should emphasize the safety benefit that can be obtained by keeping the EGPWS software / terrain database up to date

2. GPS/GNSS is used as a position source for the EGPWS

- Operators should encourage the use of GNSS/GPS as a position source for the EGPWS
- Manufactures should encourage the association of EGPWS operations with the use of GNSS for the position source

3. Terrain Display during Critical Phases of Flight Policy

- Operators should publish a clear SOP for the use of terrain awareness display during critical phases of flight
- Regulators are recommended to check if the terrain display SOP is implemented

4. Training for Flight Crew to respond to EGPWS Alerts

- Encourage operators to consult with EGPWS training guidance available from IATA, EASA, FAA, ICAO, OEMs, and others
- Encourage regulators to check if the EGPWS training is performed in compliance with regulations
- Encourage operators to use FDM or FOQA data to monitor proper responses by flight crew to EGPWS events

5. EGPWS Equip. Always Remains Activated & Serviceable

- Operators are encouraged to have procedures in place to ensure that EGPWS equipment remains activated and serviceable at all times

6. Notify Authorities & ATC of the Locations and Impact of GPS or radio altimeter Anomalies

- Airspace users are encouraged to report GPS interference or any disruption of radio altimeter operation to the appropriate national authorities, with a copy to safety@iata.org
- Efforts must be taken to create awareness of the impact of GPS jamming or radio altimeter anomalies on aviation safety

7. Consult with the IATA/Honeywell performance assessment of pilot response GM & recommendations

- Operators are encouraged to consult with the IATA/Honeywell performance assessment of pilot response to EGPWS

CFIT/EGPWS Detailed Implementation Plan

What is required from Operators' perspective:

Safety Management System

- Dedication and commitment from leadership and everyone
- Establishing a positive safety culture
- Encourage operators to use FOQA data to monitor proper responses by flight crew to EGPWS events
- Increase awareness and visibility on the implications of deviating from established procedures
- Consult with and promote the performance assessment of EGPWS Guidance Material (GM) and its recommendations

Training

- Training Departments should perform gap analysis against the latest EGPWS training guidance available from IATA, EASA, FAA, ICAO, OEMs, and others.
- Enhancing flight crew training by implementing Operators should enhance flight crew training by implementing Competency-based Training and Assessment (CBTA) to include Evidence Based Training program
- Consult with the performance assessment of EGPWS Guidance Material (GM) and its recommendations

CFIT/EGPWS Detailed Implementation Plan

What is required from Operators' perspective:

Flight Operations	Technical Operations (Engineering & Maintenance)
• Use of Terrain display in order to enhance full situational awareness and ensure timely and appropriate pilot response. • Encourage pilots and operators to report instantly to the relevant ATC Units and authorities all incidents related to GPS interference • Encourage Flight crew to immediately respond to EGPWS warning • Consult with and promote the performance assessment of EGPWS GM and its recommendations	• Ensure the EGPWS software / terrain database are kept up to date and highlight the safety benefits that can be obtained by keeping the software/database up to date • Ensure the use of GPS/GNSS for the position source to EGPWS. • Consult with the performance assessment of EGPWS GM and its recommendations

CFIT/EGPWS Detailed Implementation Plan

What is required from Manufacturers' perspective:

- To ensure the timely update of the EGPWS Software & Terrain Database
- Consult with and promote within your organization the performance assessment of EGPWS GM and its recommendations

CFIT/EGPWS Detailed Implementation Plan

What is required from Pilots:

- The EGPWS is **NOT** to be used as a primary reference for terrain or obstacle avoidance and does **NOT** relieve the pilot from responsibility of being aware of the surroundings during flight. **Situational awareness must be maintained at all times**
- Pilots are directly responsible and are the final authority as to the operation and safety of the flight. **They are responsible for terrain, other aircraft, and obstacle clearance and separation**
- Once the pilot is cleared to conduct a visual approach, the pilot has the full responsibility to maintain separation from terrain or obstacle. **Safe separation with the terrain, obstacle or other aircraft must be maintained throughout the flight by using accurate navigation, especially during takeoff, decent and final approach briefings and proper checks.** If pilots are unable to maintain terrain/obstacle clearance or separation, the controller should be advised and pilots should state their actions

CFIT/EGPWS Detailed Implementation Plan

What is required from Pilots:

Importance of the briefing

- Through thorough briefing, the flight crew would be able to know
  - the main features of the departure route, descent, approach and missed approach;
  - terrain and hazard awareness

Briefing to include:

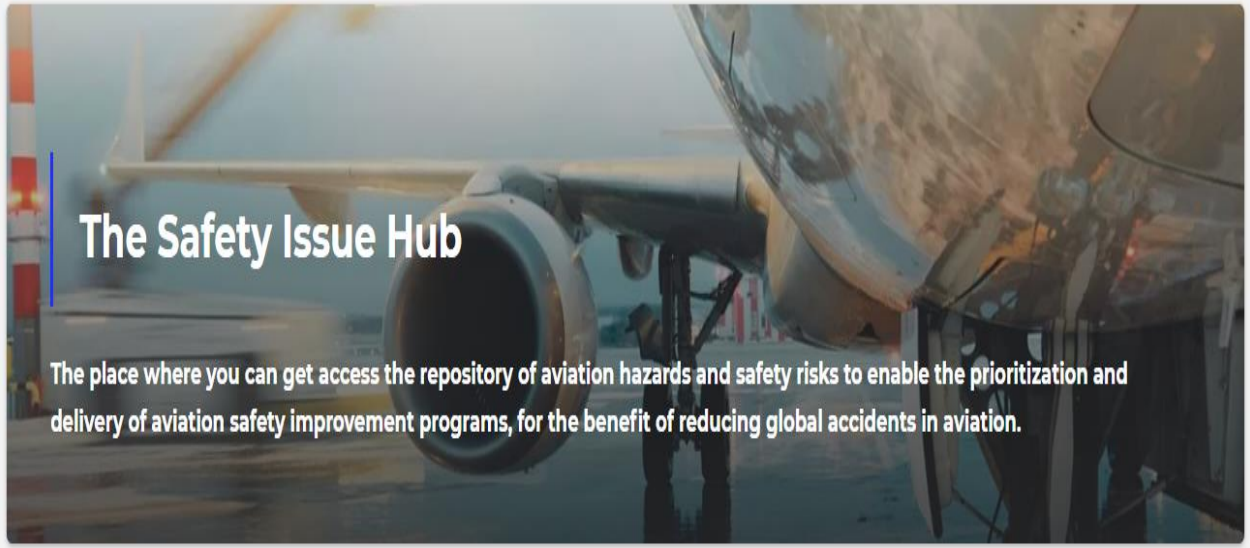
- Briefing should include
  - Significant terrain, obstacles along the intended departure route
  - Standard Instrument Departure (SID) and Minimum Safe Altitude (MSA)
- For the approach briefing, it should include
  - Descent profile Management and energy management
  - Terrain awareness and approach hazard awareness
  - Elements of unstable approach and Missed approach procedures
  - MSAs and applicable minimum (visibility, runway visual range, ceiling)
  - Go-around altitude

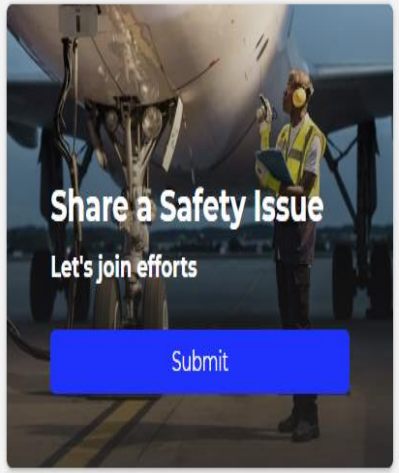
CFIT/EGPWS Detailed Implementation Plan

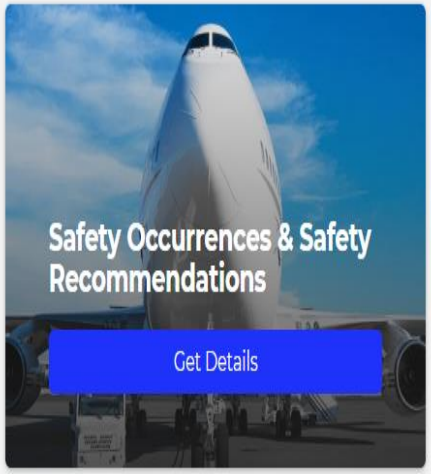
What is required from Pilots:

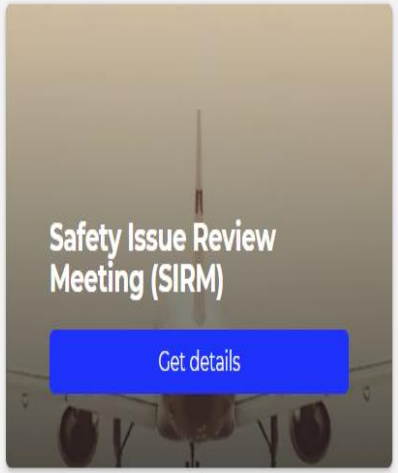
Briefing

In order to conduct a safe go-around, advance preparation and a comprehensive crew briefing are essential components of risk mitigation. Operators should encourage flight crews to implement a Threat and Error Management (TEM) arrival briefing, that includes aspects regarding the prescribed missed approach procedure and any threats, such as at airports surrounded by high terrain (with higher required climb gradients) aircraft performance in case of a one-engine inoperative situation or a balked landing









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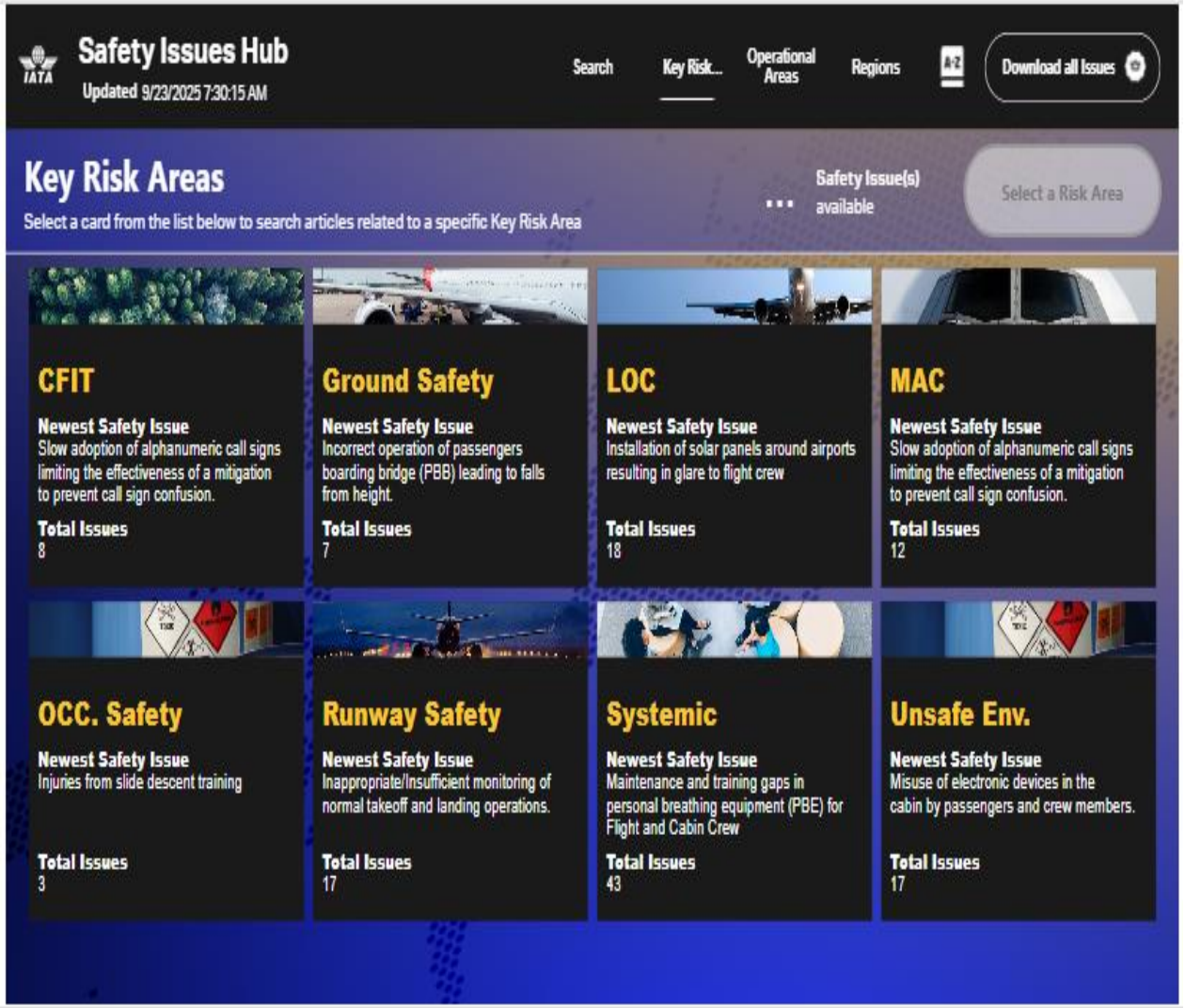

[Baro RNAV Altimeter Setting Error]

https://www.iata.org/en/programs/safety/operational-safety/controlled-flight-into-terrain/