

**59th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

*Cebu, Philippines
14 to 18 October 2024*

AGENDA ITEM 3: AVIATION SAFETY

**ENHANCING AVIATION SAFETY THROUGH REGIONAL
DATA SHARING**

(Presented by Indonesia, Malaysia, the Philippines, Singapore and Thailand)

SUMMARY

Improvements in aviation safety over the past few decades have led to a significant reduction in accidents and serious incidents, with the positive trend expected to continue. As learning from accidents and serious incidents alone is not sufficient to enhance safety, regional collaboration to share safety data and safety information beyond accidents and serious incidents, can help further reduce safety risks through the identification of emerging hazards and risks, and facilitate the identification of relevant mitigating actions.

In view of this, States – Indonesia, Malaysia, the Philippines, Singapore and Thailand – have come together to pilot a regional data sharing initiative. The objective of the initiative is to enhance aviation safety through the sharing and analysis of safety data and safety information from safety occurrence reports collected by States, through their respective mandatory occurrence reporting systems.

ENHANCING AVIATION SAFETY THROUGH REGIONAL DATA SHARING

1. INTRODUCTION

1.1 Learning from past accidents and serious incidents has been a cornerstone of the global approach to prevent the recurrence of such occurrences. Improvements in aviation safety over the past few decades have led to a significant reduction in accidents and serious incidents over time, with the positive trend expected to continue. It is important to continue to reduce the risk of accidents and serious incidents as traffic volume increases. Learning from accidents and serious incidents alone is not sufficient to enhance safety. There is a need to extract insights and lessons learned from less severe events. Some of these events are made known through occurrence reports that are collected and analyzed by the Civil Aviation Authorities.

1.2 Given the cross-cutting nature of safety risks in the aviation environment, it is important to collaborate and share safety data and safety information to better monitor existing safety risks and collectively identify new and emerging threats. To enable the exchange of safety data and safety information across States and regions, there is a need to ensure compatibility of the underlying data through the use of standardized taxonomies and definitions, and to establish a robust governance framework to safeguard the use of the shared data.

2. DISCUSSION

2.1 Recognizing the importance of exchanging safety data and safety information in addressing safety risks, Indonesia, Malaysia, the Philippines, Singapore and Thailand have come together and jointly established a regional data sharing pilot initiative. For a start, this regional data sharing initiative will focus on sharing and analyzing a set of safety occurrences derived from the participating States' mandatory reporting systems. The initial list of safety occurrences (see below) is determined from factors such as the relevance to the high-risk occurrence categories in this region, past occurrence trends and the assessed level of risk by the participating States.

- (i) Traffic Collision Avoidance System – Resolution Advisory (TCAS-RA),
- (ii) Deviations from Air Traffic Controller (ATC) assigned altitude,
- (iii) Ground Proximity Warning System (GPWS) or Terrain Awareness and Warning System (TAWS),
- (iv) Severe turbulence,
- (v) Windshear,
- (vi) Bird strikes,
- (vii) Dangerous goods incidents.

2.2 Data governance principles and robust data confidentiality and protection protocols are critical to foster confidence in the sharing of data. These high-level protocols are captured in a Memorandum of Understanding (MOU) signed by each participating State, which demonstrates its commitment to share safety data solely for enhancing safety and not for other purposes such as enforcement. Apart from the MOU, a data custodian will be appointed to be responsible for the collection, management and storage of safety data received from the participating States. The safety data shared will be de-identified at two levels – i) data provided by States will not include data identifying any organizations or personnel; and ii) data shared by States will be sent to the data custodian, such that the participating States will still preserve anonymity in the provision of the occurrences. The roles and responsibilities of the data custodian and the detailed procedures in storing and de-identifying the safety data will be captured in a Procedural Handbook to be agreed upon by all participating States.

2.3 To facilitate data exchange, States have also agreed on the definitions of the occurrences and the necessary data fields to be shared. The occurrence categories are based mainly on the taxonomies derived by the CAST/ICAO Common Taxonomy Team (CICTT), for consistency with international standards. Data fields such as date, time, and location, are also standardized to ensure the

accuracy of information shared and to minimize the effort required for post-processing (refer to the Annex for more information on the definition and details of data fields to be shared for the respective occurrences). The data fields are captured in a template to ease the collection of the data and information by the data custodian. For a start, the States have agreed to share the safety data and safety information on a monthly basis. Noting that there could be instances where air operators report the same occurrence to the air traffic control of the State of occurrence as well as to its Civil Aviation Authority, the participating States also established mechanisms to rationalize such duplicate reports. It is envisaged that the outcomes of the analysis would be further shared at regional forums to promote the exchange of safety information and insights to enhance safety.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) Note the regional data sharing initiative embarked on by Indonesia, Malaysia, the Philippines, Singapore and Thailand, to enhance aviation safety through the sharing and analysis of safety data and safety information from safety occurrence reports.
- b) Encourage States/Administrations in the Asia-Pacific region to explore opportunities for collaboration and participation in this regional data sharing initiative, recognising the collective impact it can have on enhancing aviation safety and contributing to the region's safety efforts;
- c) Encourage the sharing of safety data and safety information experiences and lessons learned from various initiatives, to foster the development and enhancement of similar data sharing initiatives.
- d) Encourage States/Administrations in the Asia-Pacific region to consider the applicable outcomes of the analyses as potential lessons learned through this initiative, which will be further shared in regional forums with the aim of enhancing safety.

—END—

Annex – Definitions and data fields to be shared

S/N	Event Type	Definition	Source	Date	Time (UTC)	Aircraft Model	Location	Other Information
1	TCAS-RA	Any TCAS RA event. Does not include TCAS TA "Traffic Traffic" events.	AOC holders/ ATC	DDMMYYYY	HH:MM	Variant	FIR (enroute) or aerodrome (TMA), and waypoint (if available)	<ul style="list-style-type: none"> • Phase of flight • Vertical speed
2	Deviation from ATC assigned altitude	Deviation from the assigned altitude (or flight level) equal to or greater than 300 feet.	AOC holders/ ATC	DDMMYYYY	HH:MM	Variant	FIR (enroute) or aerodrome (TMA), and waypoint (if available)	<ul style="list-style-type: none"> • Phase of flight • Primary contributing factor – pilot, ATC, NAVAID, weather, etc.
3	GPWS/TAWS	Incidents involving activation of <ul style="list-style-type: none"> • Mode 1: Sink Rate • Mode 2: Terrain • Mode 3: Don't Sink • Mode 4: Too low gear/flaps • Mode 5: glideslope • Mode 6: Bank Angle, excluding spurious alerts. 	AOC holders	DDMMYYYY	HH:MM	Variant	Aerodrome (TMA)	<ul style="list-style-type: none"> • Phase of flight – departure/approach • Modes 1-4, Modes 5-6
4	Severe turbulence	Severe turbulence encounters as defined by the respective States' occurrence reporting systems.	AOC holders	DDMMYYYY	HH:MM	Variant	FIR (enroute), and waypoint (if available)	<ul style="list-style-type: none"> • Any injury (no, minor, severe)

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5	Windshear	<ul style="list-style-type: none"> • Predictive - Incident involving activation of aircraft windshear early warning windshear warning e.g. "Windshear Ahead" • Reactive - Incident involving activation of aircraft active windshear warning or pilot recognition of actual windshear occurrence 	AOC holders	DDMMYYYY	HH:MM	Variant	Aerodrome	<ul style="list-style-type: none"> • Alert – predictive/reactive • Altitude
6	Birdstrikes	Collision with or ingestion of one or several birds	AOC holders/ aerodrome	DDMMYYYY	HH:MM	Variant	Aerodrome	<ul style="list-style-type: none"> • Damage (y/n), • Estimated size of bird(s) • Estimated number of birds
7	Dangerous goods	Occurrence involving dangerous goods that were transported by air on commercial aircraft	AOC holders/ GHSPs	DDMMYYYY	HH:MM	Variant	Aerodrome (of occurrence, and of reporting)	<ul style="list-style-type: none"> • Incident type – undeclared, misdeclared, forbidden, exceed qty limits, etc. • Classification of DG • Qty