

**61ST CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGION**

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AGENDA ITEM 3: AVIATION SAFETY

**ENHANCING AVIATION SAFETY THROUGH REGIONAL
DATA SHARING**

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

SUMMARY

This paper provides an update on the regional safety data sharing initiative established by Indonesia, Malaysia, the Philippines, Singapore and Thailand, following the progress reported at the 60th DGCA Conference. It presents safety insights derived from deeper analyses of consolidated occurrence data, such as for runway incursions and Ground Proximity Warning System (GPWS) alerts. The paper also highlights how participation in the initiative has contributed to improvements in national safety occurrence reporting systems. In addition, it outlines the initial outcomes and considerations arising from a trial of Safety Performance Indicator (SPI) rate sharing.

These developments demonstrate the value of regional collaboration in enhancing safety understanding and supporting more data-driven safety oversight across the Asia-Pacific region.

ENHANCING AVIATION SAFETY THROUGH REGIONAL DATA SHARING

1. INTRODUCTION

1.1 At the 59th DGCA Conference in 2024, Indonesia, Malaysia, the Philippines, Singapore and Thailand jointly established the first safety data sharing initiative among States in this region. The initiative focuses on the sharing and analysis of safety occurrence data collected through States' mandatory occurrence reporting systems.

1.2 At the 60th DGCA Conference last year, the participating States reported on the implementation progress of the initiative, including the development of a comprehensive governance framework, and preliminary safety insights on bird strikes and GPWS alerts. The Conference also noted the initiative's plans to expand its scope to include runway incursions, unstabilised approaches (that continued to land), and wildlife sightings.

1.3 This paper provides a further update on the initiative, including new safety insights from targeted deep-dive analyses, improvements to national reporting systems arising from participation in the initiative, and a trial to share Safety Performance Indicator (SPI) rates to support regional safety analysis. To date, more than 13,000 occurrences across ten safety occurrence categories covering the period from January 2023 to February 2026 have been shared through this initiative.

2. DISCUSSION

Increasing trend of Runway Incursions

2.1 Runway incursion remains one of aviation's most critical safety concerns and is recognised as a Global High-Risk Category of Occurrence. ICAO statistics¹ indicate that, between 2021 and 2025, runway incursions accounted for 11% of fatal accidents involving scheduled commercial operations by aircraft over 5,700 kg. In the APAC region, there was one fatal accident related to runway incursion in the past five years.

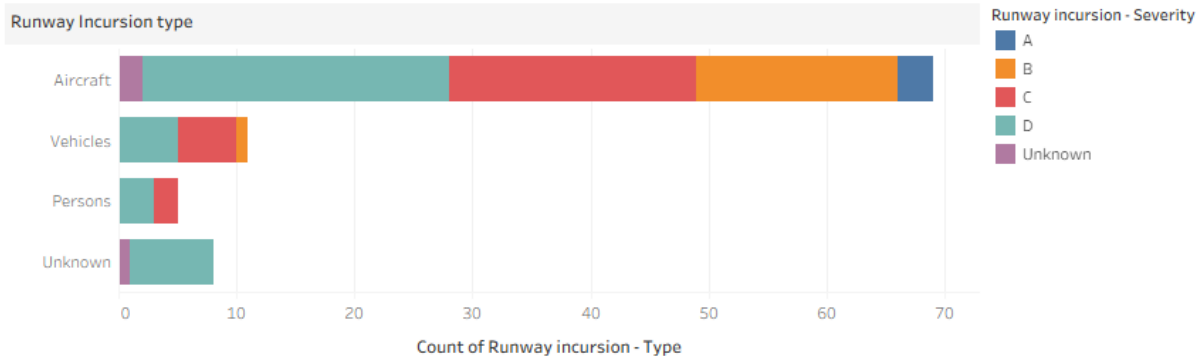
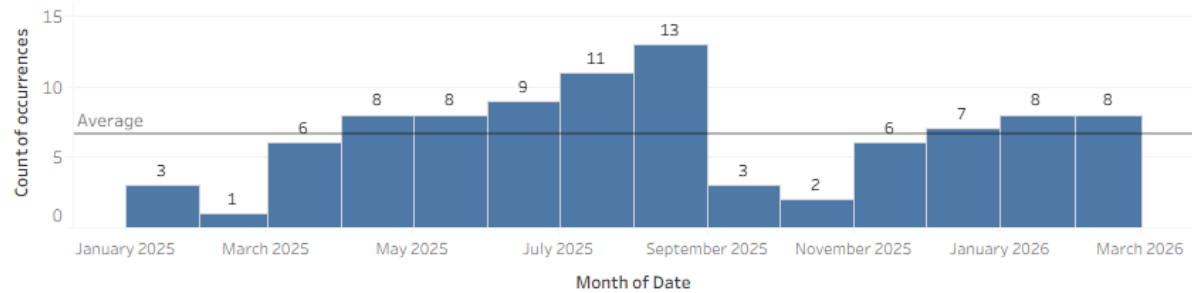
2.2 Noting the global focus in addressing runway safety, participating States began sharing runway incursion data from 2025 onwards. Analysis of the consolidated data has shown an increase in runway incursions across participating States in 2025. The data also indicated that a significant number of occurrences (21 out of 93) were classified as severe (A or B)² based on the ICAO Severity Classification system, underscoring the need for targeted safety actions to reduce the risk of an actual accident. As the dataset continues to mature, further monitoring will help determine whether this reflects an actual increase in occurrences, improved reporting, or both, and will inform the prioritisation of appropriate mitigating measures.

2.3 In addition to the top-line trends, participating States provided more detailed information on runway incursion occurrences, enabling a deeper analysis of the contributing factors. Several common contributory factors were identified across States: (1) Non-compliance with stop bar procedures resulting in instances where aircraft crossed illuminated red stop bars without appropriate ATC clearance, (2) Communication and phraseology issues including the use of non-standard ATC phraseology, readback errors, and hearback errors arising from anticipated clearances, and (3) Loss of situational awareness by flight crew and vehicle drivers. Participating States have agreed to further consolidate and refine the list of contributing factors from their runway incursion occurrences, to identify targeted mitigating measures and inform regional safety actions.

¹ Statistics taken from ICAO iSTARS 4.0.

² Runway incursion severity classifications – Category A: A serious incident where a collision was narrowly avoided; and Category B: An incident in which separation decreases and there is significant potential for collision, which may result in a time-critical corrective/evasive response to avoid a collision.

Runway incursion occurrences by month



*'Unknown' indicate fields where the data was not available or provided at the time of submission.

Figure 1: Regional data sharing – runway incursion dashboard (Jan 2025 – Feb 2026)

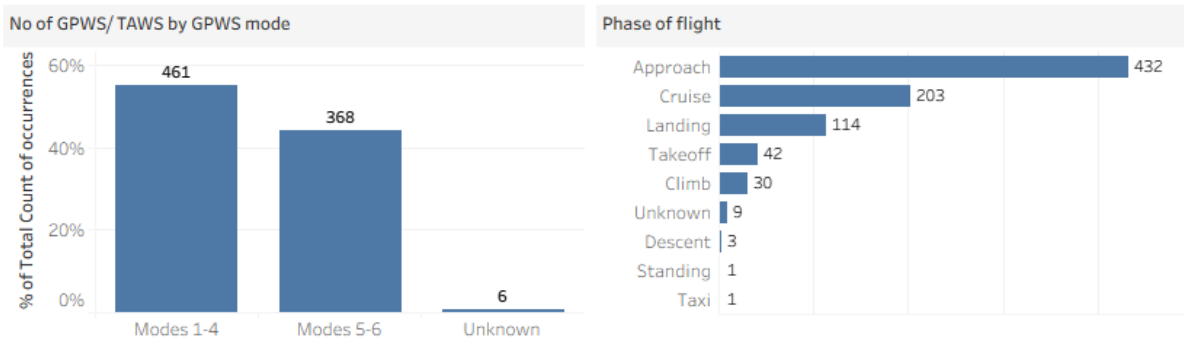
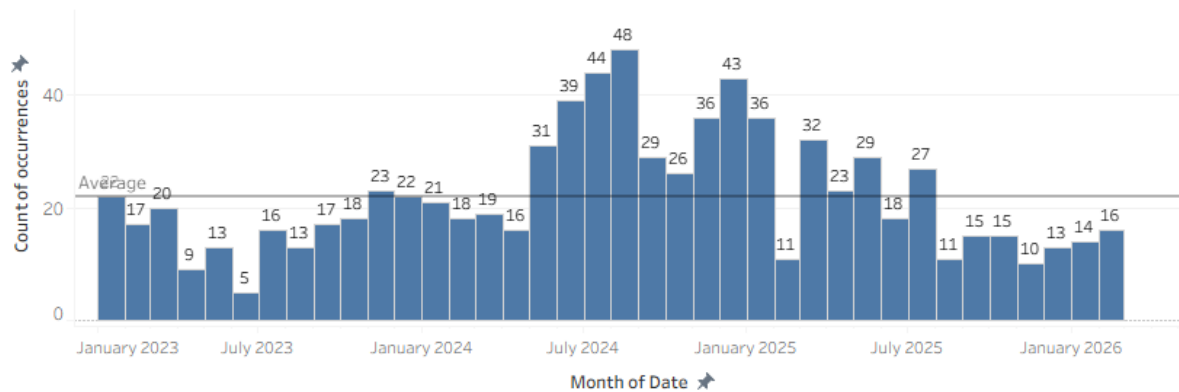
Ground Proximity Warning System (GPWS) alerts

2.4 As presented at the 60th DGCA Conference, analysis of the consolidated dataset revealed a higher rate of GPWS alerts associated with certain aircraft types across multiple participating States. To further understand this trend, participating States engaged the relevant aircraft manufacturer and requested additional information on the reported occurrences from airlines, including the duration of the alert trigger.

2.5 Analysis of the additional data showed that many of the GPWS alerts were brief in duration, in some cases lasting approximately one second, and were typically resolved without a go-around being executed. The alerts were predominantly sink rate alerts (Modes 1-4) during approach phases in terminal areas. The frequency of such brief activations raises concern regarding potential pilot desensitisation, as repeated exposure to short-duration alerts that do not require corrective action may, over time, reduce crew responsiveness to genuine GPWS warnings. Further analysis, including with the support of the aircraft manufacturer, is required to determine whether these activations reflect normal operational characteristics of the aircraft type or operating environment conditions.

2.6 The consolidated dataset also revealed an elevated concentration of GPWS alerts in the vicinity of one airport in the region. This pattern was not apparent from the relevant State's own national occurrence data, as the aircraft type contributing most significantly to these alerts was not operated by that State's own carriers. It was only through the consolidation of occurrence data from across the participating States that the elevated alert rate at that location became visible. Following this finding, the State involved has updated its Aeronautical Information Publication (AIP) for the airport. Further analysis, as part of the broader engagement with the aircraft manufacturer described above, is ongoing.

GPWS/TAWS occurrences by month



*'Unknown' indicate fields where the data was not available or provided at the time of submission.

Figure 2: Regional data sharing – GPWS dashboard (Jan 2023 – Feb 2026)

Sharing of Safety Performance Indicator (SPI) rates

2.7 The sharing of de-identified SPI rates was discussed at the 42nd ICAO Assembly (A42-WP/175) and RASG-APAC/15 (RASG 25/05). At RASG-APAC/15, it was agreed that the ICAO APAC Regional Office would support the sharing of de-identified SPIs by consolidating and aggregating voluntary submissions from States and submitting the aggregated data to the Asia-Pacific Regional Aviation Safety Team (APRAST) for further analysis. Following this, participating States in the regional data sharing initiative began trialling the sharing of de-identified SPI rates, starting with a selected set of SPIs derived from data already shared under the initiative.

2.8 The example below shows the de-identified runway incursion rates shared by participating States, plotted on a box-and-whisker chart. The mean runway incursion rate was 6.2 per 100,000 aircraft movements in 2024 and 11.3 in 2025.

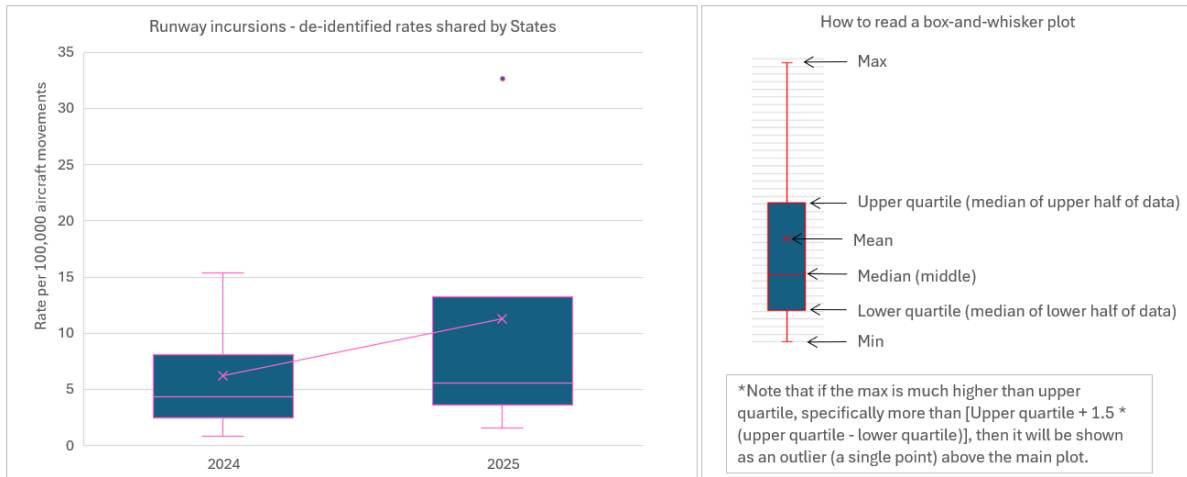


Figure 3: De-identified SPI sharing example – Runway Incursion rates shared by the Regional Data Sharing States

2.9 The trial demonstrated the potential value of sharing aggregated and de-identified SPI rates, by enabling participating States to assess their safety performance against the aggregated regional dataset. This provided States with a broader reference point to interpret their own safety trends, identify areas that may warrant closer attention, and support more evidence-based prioritisation of safety actions. The aggregated shared rates are intended for safety discussion and prioritisation, and do not reflect the safety performance of any individual State.

2.10 At the same time, the trial also identified several practical considerations that will need to be addressed as the SPI rate-sharing framework continues to develop. These include differences in how States define specific SPIs, variations in data availability and completeness, and differences in the methodologies used to normalise occurrence data into comparable rates.

Broader benefits of regional collaboration

2.11 Beyond the direct sharing and analysis of occurrence data, participation in the initiative has encouraged States to review and refine their national safety occurrence reporting frameworks. The collaborative process of developing common taxonomies, standardised data fields and reporting definitions has provided a useful reference for States to assess how closely their national frameworks align with emerging regional practices. This has in turn helped improve the quality and completeness of data collected at the national level, which in turn strengthens the regional dataset and supports more meaningful regional safety analysis. The initiative has also supported internal discussions among participating States on promoting more coordinated follow-up actions on identified safety issues.

2.12 The initiative has also established a regular platform for participating States to come together to collectively review and discuss the shared data. Through these meetings, States discuss findings from the analyses, share operational and local context associated with reported occurrences, and exchange observations on emerging safety trends, enabling safety issues to be examined from a broader regional perspective. This allows the participating States to pool not just the shared safety data, but their analytical and safety intelligence capabilities too.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) note the continued progress of the regional data sharing initiative, including the expanded safety occurrence categories and safety insights derived from analyses of GPWS alerts and runway incursions;
- b) recognise the value of regional collaboration in enhancing safety intelligence, improving national safety reporting systems, and supporting more data-driven safety oversight across the Asia-Pacific region;
- c) encourage States/Administrations in the Asia-Pacific region to engage with the regional data sharing initiative, including as observers, to better understand the framework, safeguards and potential benefits before deciding on participation; and
- d) encourage States/Administrations in the Asia-Pacific region to participate in the voluntary sharing of de-identified SPI rates, while continuing to address differences in definitions and methodologies across States/Administrations, to enhance understanding of regional safety performance and inform targeted safety actions.

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