



Annual Safety Report **2025**

ASIA PACIFIC REGION | OCTOBER 2025



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Acknowledgement to contributors

RASG-APAC thanks the members of the RASG-APAC Annual Safety Reporting Programme Working Group that contributed to the completion of this 2025 RASG-APAC Annual Safety Report:

- International Civil Aviation Organization (ICAO)
- International Air Transport Association (IATA)
- Commercial Aviation Safety Team (CAST)

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01 Introduction

The objective of this RASG-APAC Annual Safety Report is to gather safety information from various stakeholders and to identify the main aviation safety risks in the Asia Pacific region. This is to support the development of mitigation measures to enhance aviation safety in a coordinated manner.

The analysis in this report covers accidents involving aircraft that: (1) are used for commercial scheduled operations (2) have Maximum Take-off Weight (MTOW) greater than 5700 kg and (3) are registered in or operated by States/Administrations of RASG-APAC.

The analysis focuses on examining the APAC region's accident rates, accident numbers and accident categories. The analysis also provides a breakdown of the sub-regions¹ – North Asia, South Asia, South East Asia and the Pacific. The results of the analysis for each of the sub-regions can be used by the COSCAPs or subregional bodies to identify work programmes and provide assistance or training in areas that are most relevant/critical to their sub-regions. This analysis is limited by the lack of available final accident reports in the APAC region, an issue which has been highlighted in numerous meetings.

The safety data and safety information presented in this report is based on the compilation and analysis of data provided by International Civil Aviation Organization (ICAO), International Air Transport Association (IATA) and data from OAG Aviation that is checked and verified by ICAO.

The accident data used in this report is the official ICAO accident statistics provided to the regions to develop the Annual Safety Report.

The data is based on scheduled commercial operations involving aircraft having a Maximum Take-off Weight (MTOW) above 5700 kg and are reviewed and validated by the ICAO Occurrence Validation Study Group (OVSG) based on definitions provided in Annex 13 – Aircraft Accident and Incident Investigation.

All IATA data presented in this report was extracted from the interactive safety report available on IATA's official website. It is important to note that the definition of an accident differs between ICAO and IATA. Also, IATA's North Asia (NASIA) and Asia Pacific (ASPAC) regions are equivalent to ICAO's APAC region.

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¹ The grouping of States/Administrations are primarily based on their membership with the respective Cooperative Development of Operational Safety and Continuing Airworthiness Programme (COSCAP) or, if there is no affiliated membership with any subregional body, on geographical association.



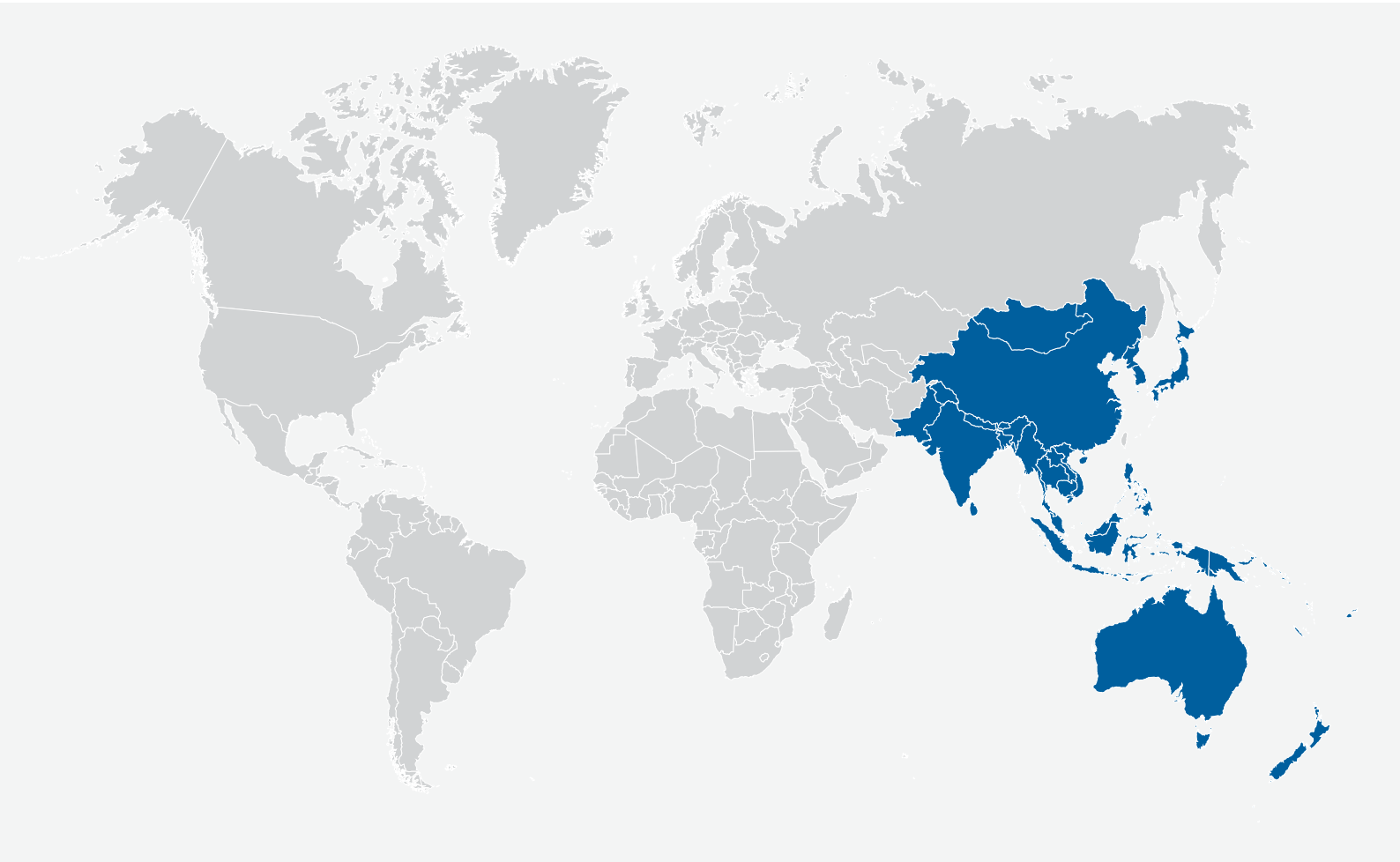
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1.1 RASG APAC Member States/Administrations

Table 1.1 Member States/Administration accredited with the ICAO Asia Pacific Office

Member States/Administration	
Afghanistan	Mongolia
Australia	Myanmar
Bangladesh	Nauru
Bhutan	Nepal
Brunei Darussalam	New Zealand
Cambodia	Pakistan
China	Palau
Hong Kong, China	Papua New Guinea
Macao, China	Philippines
Cook Islands	Republic of Korea
Democratic People's Republic of Korea	Samoa
Fiji	Singapore
India	Solomon Islands
Indonesia	Sri Lanka
Japan	Thailand
Kiribati	Timor Leste
Lao People's Democratic Republic	Tuvalu
Malaysia	Tonga
Maldives	Vanuatu
Marshall Islands	Vietnam
Micronesia (Federated States of)	

Figure 1.1 Asia Pacific region – countries associated with the ICAO Asia Pacific Regional Office



02 Key Takeaways

2.1 Significant uptrend in APAC accident rate and increase in fatalities

Global accident rate rose to 2.56 per million departures in 2024 from 1.87 in 2023. The RASG-APAC region's accident rate also increased significantly to 1.62 per million departures in 2024 from 0.78 in 2023. The number of fatalities in the RASG-APAC region increased to 186 in 2024, up from 72 in 2023 and 133 in 2022. Overall, the RASG-APAC accident rate has remained lower than the global accident rate over the past decade. The five-year moving average accident rate for the world and RASG-APAC remained stable.

The increasing number of accidents and fatalities serve as a stark reminder of the need to continue ensuring the safety of air travel amidst increasing growth and complexity. We must enhance our efforts to strengthen our safety fundamentals to uphold highest safety standards in our aviation environment.

2.2 Turbulence remains the leading cause of accidents in Asia Pacific

Turbulence encounter remains the leading cause of accidents in the Asia Pacific region from 2022 to 2024. In 2024, turbulence accidents increased to 8 in 2024 from 2 in 2023 and 7 in 2022, accounting for close to 40% of accidents in the APAC region. This trend is expected to continue due to more adverse weather conditions brought about by climate changes. Recognising that Turbulence Encounter is one of most frequent accident categories globally, it will also be included as an additional global operational safety risk to be addressed in the next edition of the Global Aviation Safety Plan (2026–2028).

It is imperative for this region to step up defences against turbulence encounters by adopting technological solutions such as advanced weather radar and electronic weather awareness systems, enhancement of crew training on turbulence scenarios and emphasising of cabin measures such as the securing of seat belts at all times when seated. More importantly, timely and accurate data sharing among Civil Aviation Authorities, Air Navigation Service Providers, Airlines and crew will help increase situation awareness and support the development of mitigation measures to reduce the risks of turbulence.

2.3 USOAP Effective Implementation remained lower than global average

RASG-APAC's USOAP Effective Implementation score rose to 65.3% from 61.7% in 2024. Despite the increase in EI scores, it remains lower than the global average of 69.1%.

In particular, the areas requiring more attention are (1) Accident and Incident Investigation (AIG) at 49.66% (compared to global average of 55.05%) and (2) Aerodrome and Ground Aids (AGA) at 62.44% (versus global average of 63.62%).

By Critical Element, the RASG-APAC region scores lower than the global average across all CEs, with two areas requiring more attention: CE-4 (Qualified technical personnel) at 55.37% (versus global average of 62.39%) and CE-8 (Resolution of safety issues) at 52.42% (versus global average of 54.63%).

03 Key Safety Stats 2024

RASG APAC

20 accidents

▲ 9 in 2023

4 fatal accidents

▲ 1 in 2023

186 fatalities

▲ 72 in 2023

World

85 accidents

▲ 66 in 2023

10 fatal accidents

▲ 1 in 2023

296 fatalities

▲ 72 in 2023

Accident rate

**1.62 per million
departures**

▲ 0.78 in 2023

**2.56 per million
departures**

▲ 1.87 in 2023

USOAP Effective Implementation

65.3%

▲ 61.7% in 2023

69.1%

▲ 68.1% in 2023

STATE SAFETY PROGRAMME

6 States² completed, **16 progressing** towards target

CERTIFICATION OF AERODROMES

353 of 384 certified, **92%** completion rate

INDEPENDENT ACCIDENT INVESTIGATION AUTHORITY

40% established

SIGNIFICANT SAFETY CONCERN

1 SSC by 1 State

² Australia, India, Republic of Korea, Singapore, Sri Lanka, Vietnam

3.1 2024 Key Safety Charts

Chart 3.1.1 Global vs RASG-APAC Accident Rate 2015-2024

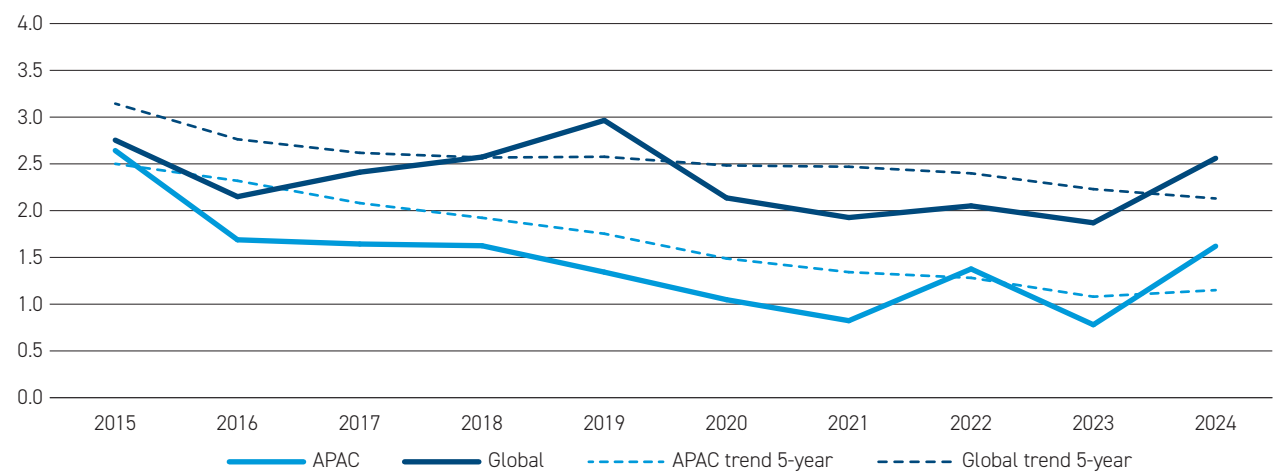


Chart 3.1.2 Global vs RASG-APAC FATAL Accident Rate 2015-2024

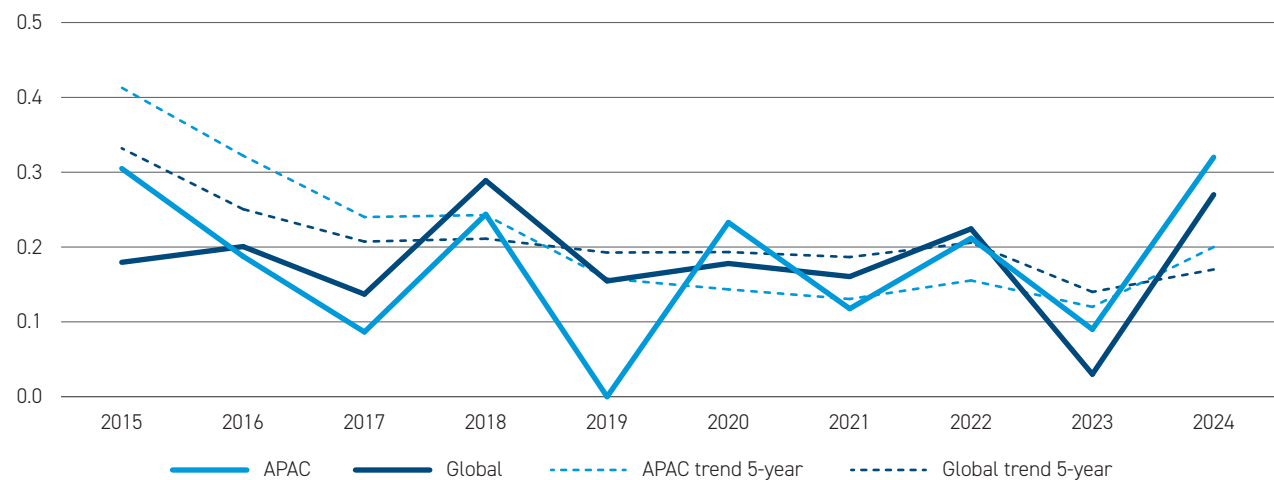
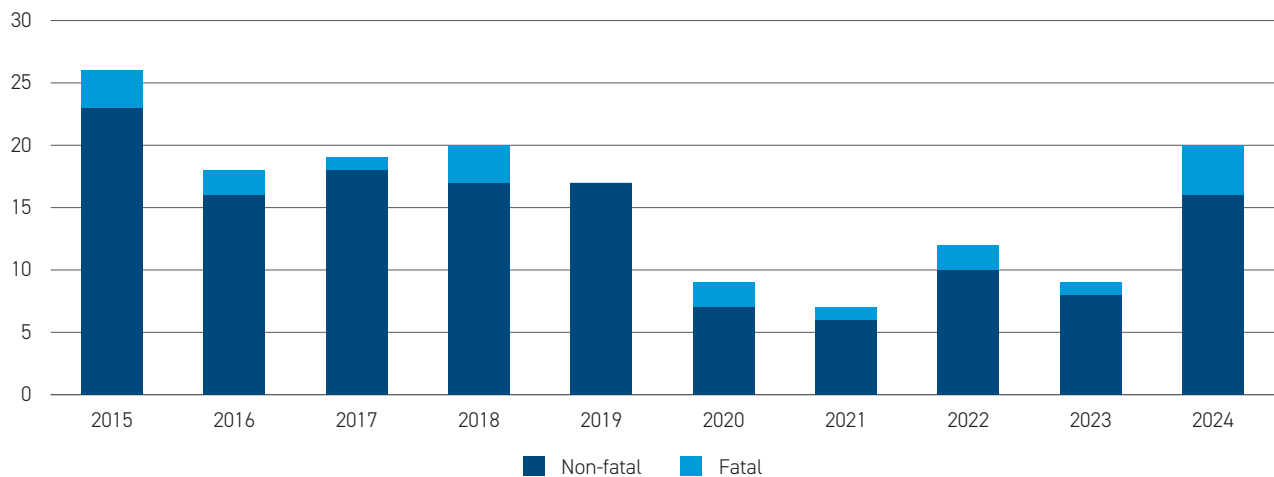


Chart 3.1.3 ICAO iSTARS, OVSG and OAG: Number of Accidents - RASG-APAC (2015-2024)



04 Top accident categories

4.1 Overview

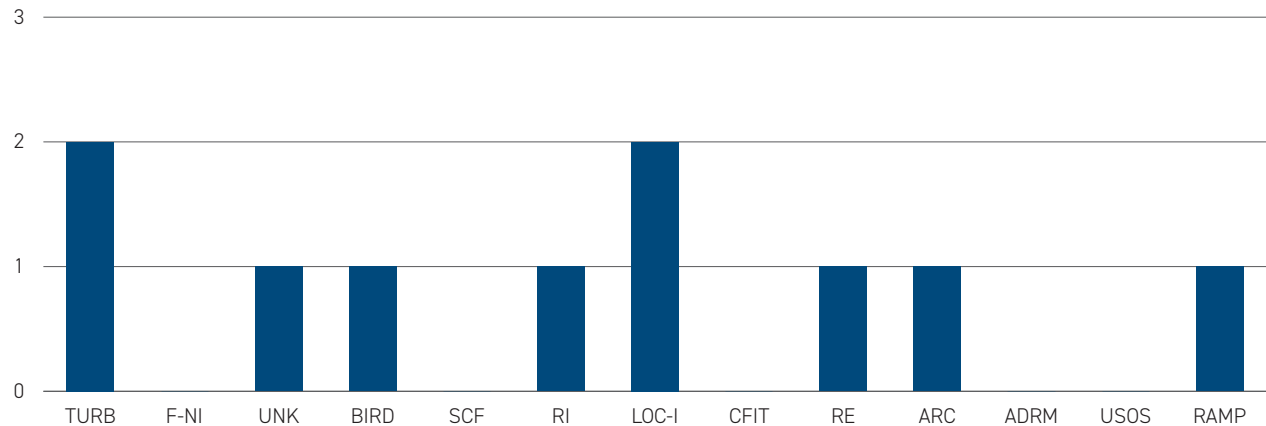
Fatal accidents

In 2024, Birdstrike (BIRD), Runway Incursion (RI), Ground Handling (RAMP) and Turbulence Encounter (TURB) each accounted for 1 fatal accident.

Over the last five years (2020 to 2024), the most frequent accident categories were: **1) Loss of Control In-Flight (LOC-I)**, followed by **2) Turbulence Encounter (TURB)**.

Accident category	Number
TURB	1
RI	1
RAMP	1
BIRD	1
RE	0
CFIT	0
MAC	0
LOC-I	0
Total	4

Chart 4.1.1 APAC fatal accidents by ICAO ADREP categories (2020 to 2024)



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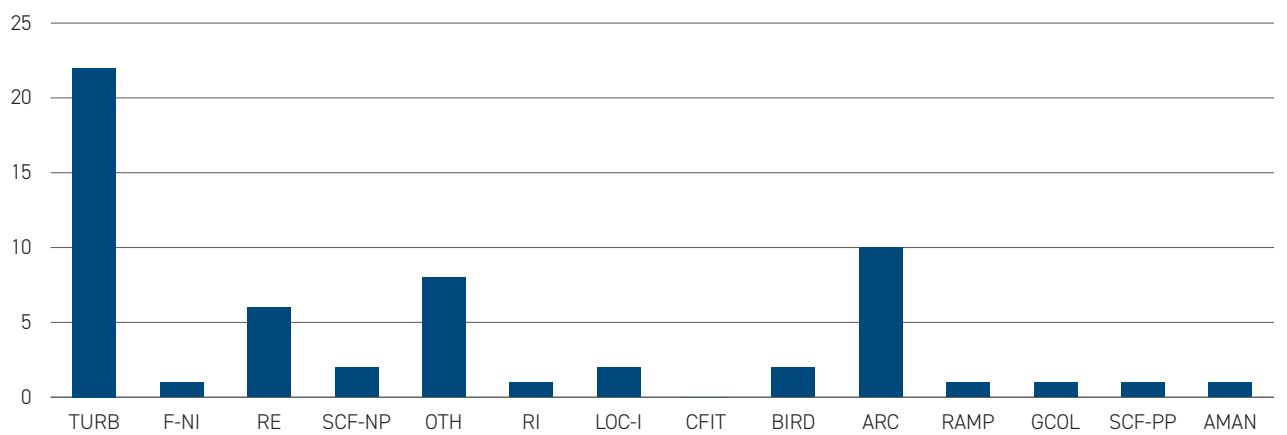
All accidents

In 2024, **Turbulence Encounter (TURB)**, **Abnormal Runway Contact (ARC)** and **Runway Excursion (RE)** were the most frequent accident categories.

Over the last five years (2020 to 2024), the most frequent accident categories were: **1) Turbulence Encounter (TURB)**, followed by **2) Abnormal Runway Contact (ARC)** and **3) Runway Excursion (RE)**.

Accident category	Number
TURB	8
F-NI	0
RE	2
SCF-NP	0
OTH	3
RI	1
LOC-I	0
CFIT	0
BIRD	2
ARC	2
RAMP	1
GCOL	0
SCF-PP	1
AMAN	0
Total	20

Chart 4.1.2 All APAC accidents by ICAO ADREP categories (2020 to 2024)





05 Global High-risk Categories of Occurrence

5.1 Overview

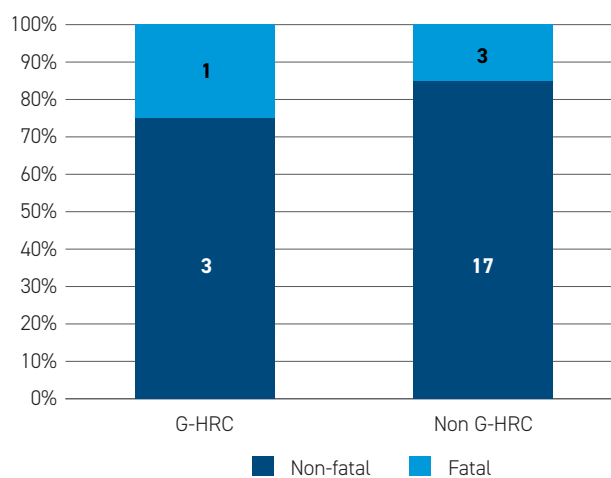
ICAO's Global Aviation Safety Plan 2023–2025 identifies five Global High-Risk Categories of occurrence (G-HRCs) that should be addressed to mitigate the risk of fatalities.

- Controlled flight into terrain;
- Loss of control in-flight;
- Mid-air collision;
- Runway excursion; and
- Runway incursion.

The G-HRCs were determined based on actual fatalities, high fatality risk per accident or the number of accidents and incidents, as well as results from the analysis of safety data collected from proactive and reactive sources of information from ICAO and other non-governmental organizations.

In 2024, one fatal accident and three accidents were related to G-HRC, representing 25% of fatal accidents and 15% of all accidents in the APAC region.

Chart 5.1 G-HRC vs non-G-HRC



5.2 Runway Excursion

Runway excursion remains a significant operational risk in aviation, occurring when an aircraft veers off or overruns the runway during take-off or landing.

In 2024, the accident rate for runway excursions in the APAC region was 0.14 per million departures, an increase from zero in 2023. Fatality risk³ remained at zero since 2021.

0.14 Accidents per million departures in 2024

- Increased from 0 in 2023
- APAC's runway excursion rate remained lower than global rate since 2020

0 fatality risk since 2021

2 runway excursion accidents in 2024

- Aircraft veered off runway after aborted take-off, resulting in serious injuries to both pilots and multiple minor injuries
- Aircraft overran end of the runway and went through the fence before taking off and was diverted to another airport for landing. There were no injuries, but the aircraft sustained substantial damage

Chart 5.2.1 IATA: Annual runway excursion accident rate (APAC vs World)

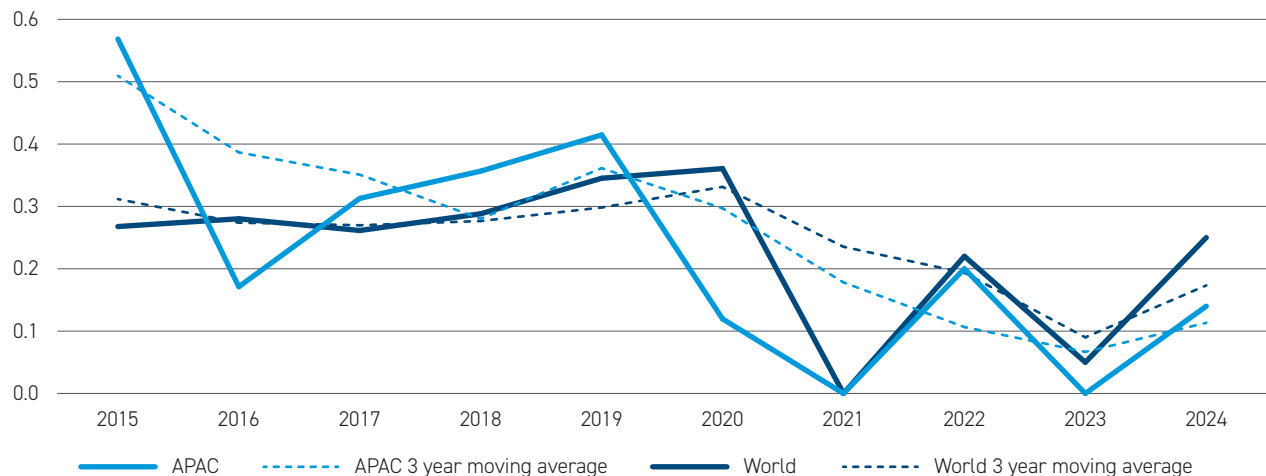
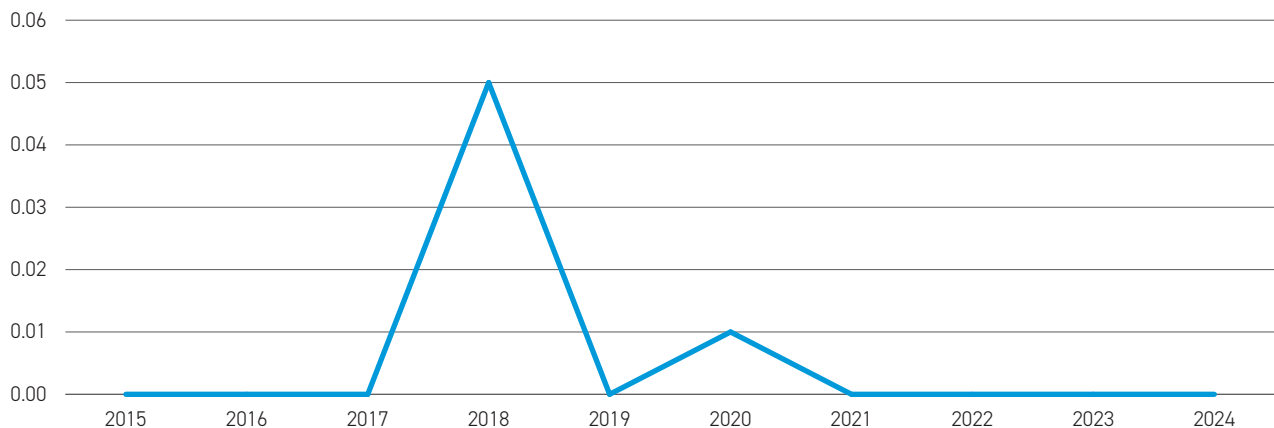


Chart 5.2.2 Fatality risk of runway excursion in APAC



3 IATA defines fatality risk as the sum of full-loss equivalents per 1 million sectors, measuring the exposure of a passenger or crew member to a non-survivable accident.

5.3 Loss of Control in-flight

Loss of Control In-flight (LOC-I) is one of the most severe categories of aviation accidents, accounting for a disproportionate share of aviation fatalities despite representing a relatively small percentage of total accidents. LOC-I occurs when an aircraft departs from controlled flight and the flight crew is unable to recover before impact. Due to its sudden onset and often catastrophic consequences, LOC-I remains a key focus area in aviation safety globally.

In 2024, the accident rate for LOC-I in the APAC region was zero per million departures, an improvement from 0.07 per million departures in 2023. Consequently, the APAC region recorded 0 fatality risk for LOC-I in 2024.

0 Accidents per million departures in 2024

- APAC's LOC-I rate has dropped below the global rate of 0.02 per million departures

0 fatality risk

Chart 5.3.1 IATA: Annual LOC-I accident rate (APAC vs World)

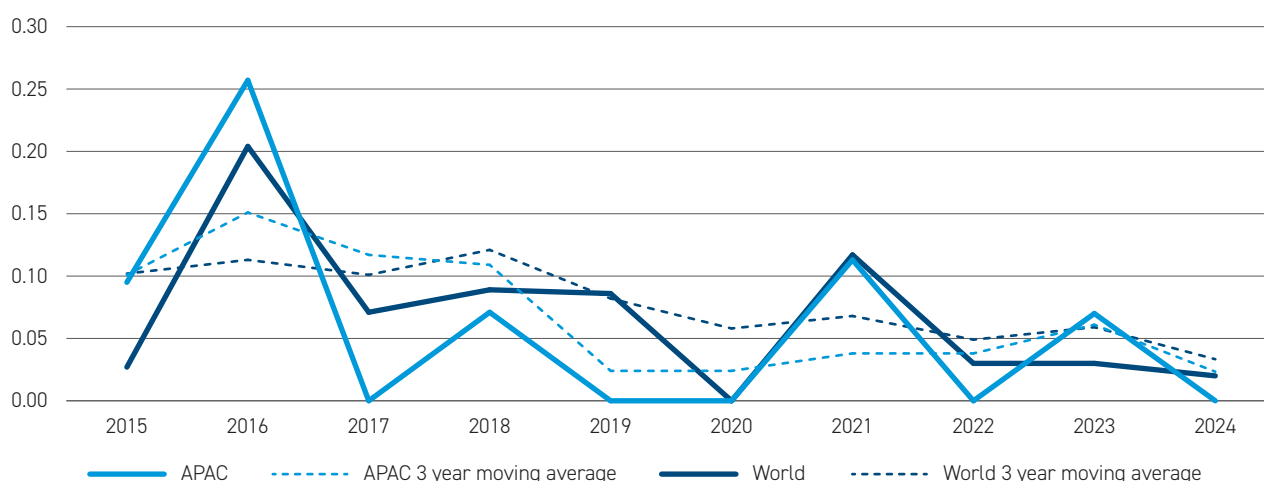
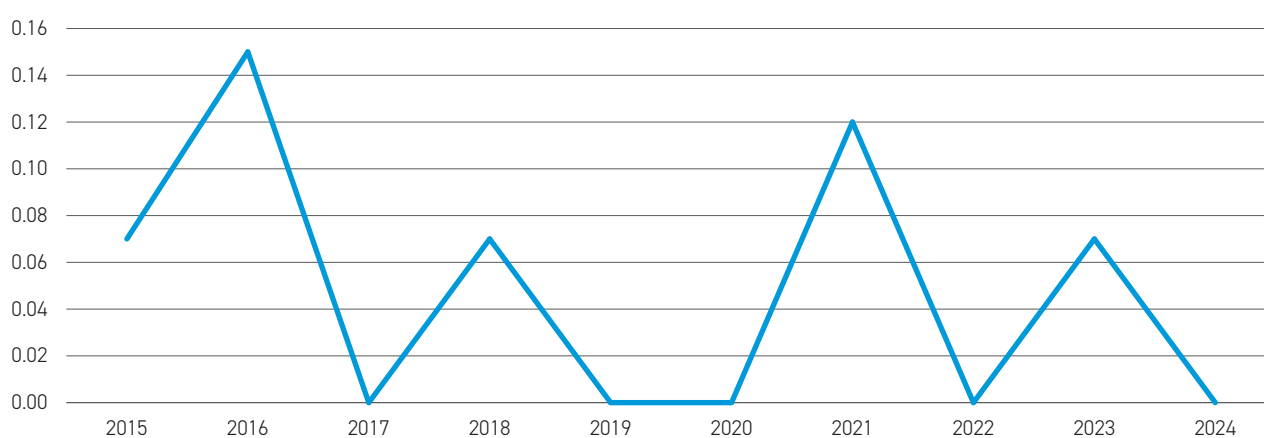


Chart 5.3.2 IATA: Fatality risk of LOC-I in APAC



5.4 Mid Air Collision

A Mid-Air Collision is an accident where two aircraft encounter each other while both are in flight.

In 2024, the accident rate for MAC in the APAC region was zero per million departures, maintaining the trend over the last decade. Consequently, the APAC region recorded 0 fatality risk for MAC in 2024.

0 Accidents per million departures in 2024

- APAC's MAC rate remained lower than global rate since 2023

0 fatality risk

Chart 5.4.1 IATA: Annual MAC accident rate (APAC vs World)

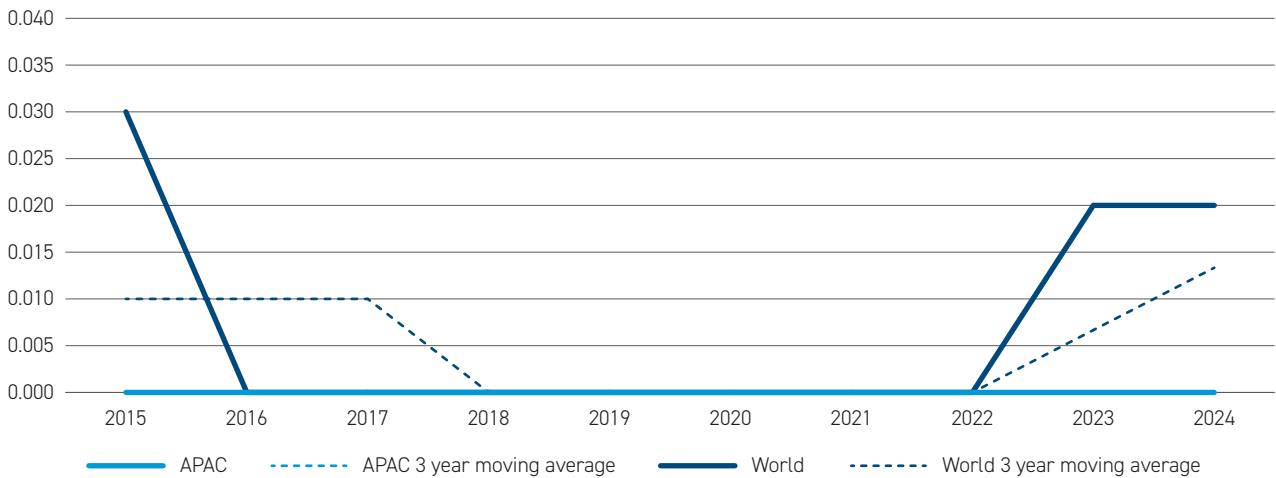
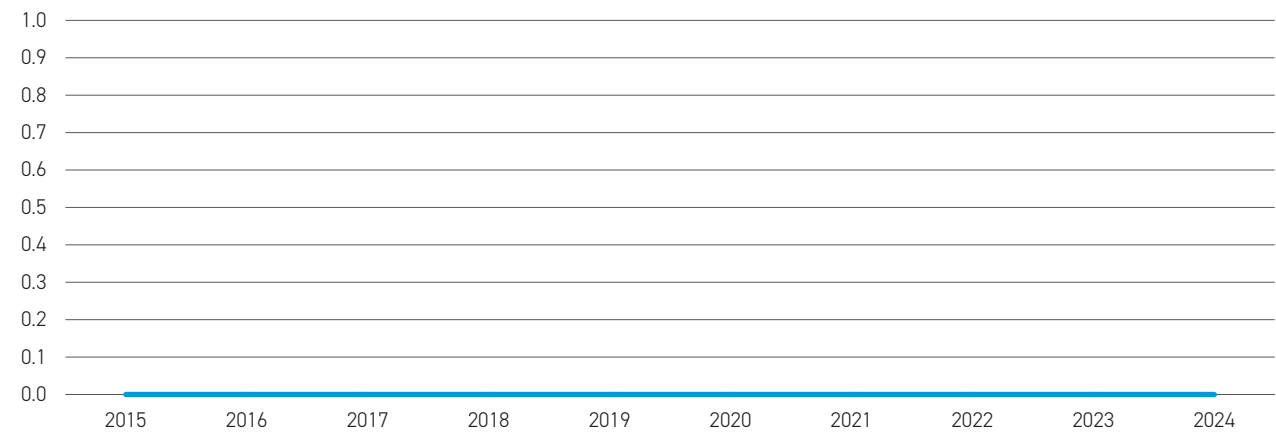


Chart 5.4.2 IATA: Fatality risk of MAC in APAC



5.5 Controlled Flight into Terrain

Controlled Flight into Terrain (CFIT) is defined as an in-flight collision or near collision with terrain, water, or obstacle without indication of loss of control. In other words, the aircraft is inadvertently flown into terrain or an obstacle. These accidents are generally characterized by the flight crew's loss of situational awareness in the approach and landing phases of flight.

In 2024, the accident rate for CFIT in the APAC region was zero per million departures, maintaining the trend since 2018. Consequently, the APAC region recorded 0 fatality risk for CFIT in 2024.

0 Accidents per million departures

■ APAC's CFIT rate in line with global rate since 2022

0 fatality risk since 2018

Chart 5.5.1 IATA: Annual CFIT accident rate (APAC vs World)

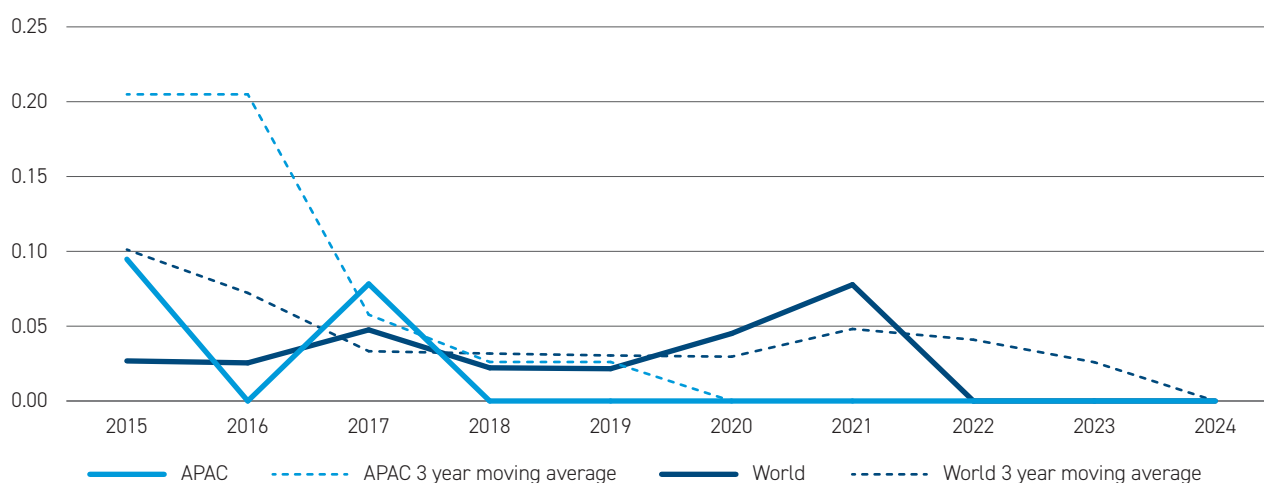
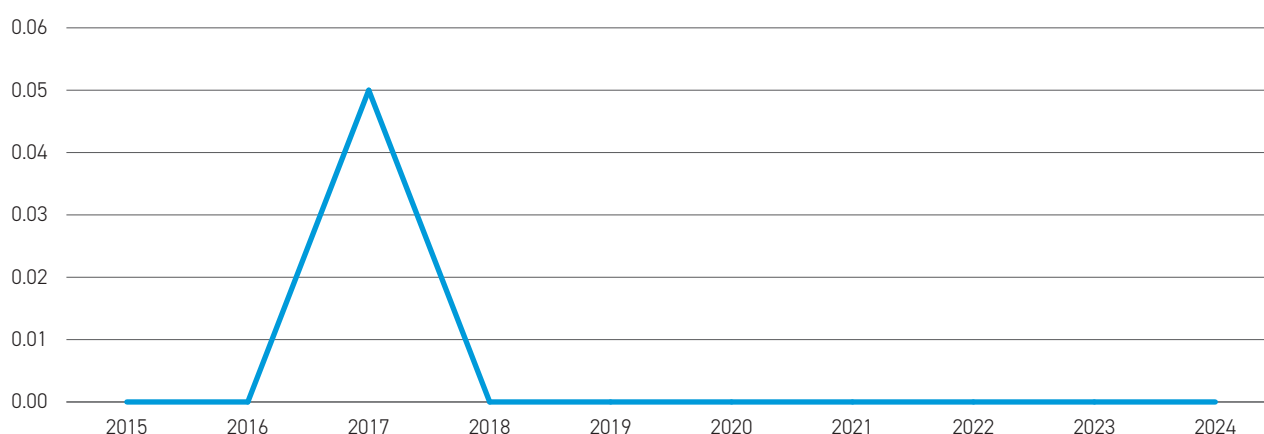


Chart 5.5.2 Fatality risk of CFIT in APAC



06

ICAO USOAP Effective Implementation

Through USOAP CMA, ICAO measures a State's safety oversight capability, calculated for each CE, each AA or as an overall measure. This measure is referred to as the "effective implementation" or "EI". The EI is expressed as a percentage; it is an indicator of a State's capability for safety oversight.

The primary tool used in USOAP to assess the level of effective implementation of a State's safety oversight system is referred to as Protocol Questions (PQs). The list of PQs can be found on the USOAP CMA online framework (OLF) at www.icao.int/safety/CMAForum/Pages/default.aspx.

Chart 6.1 Overall effective implementation – RASG APAC compared with ICAO Member States (World)

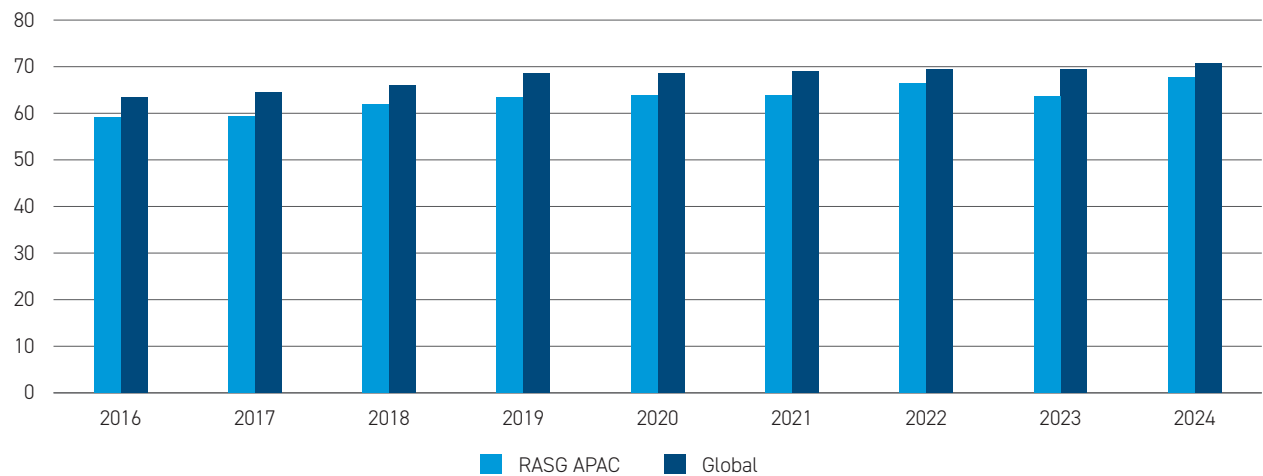
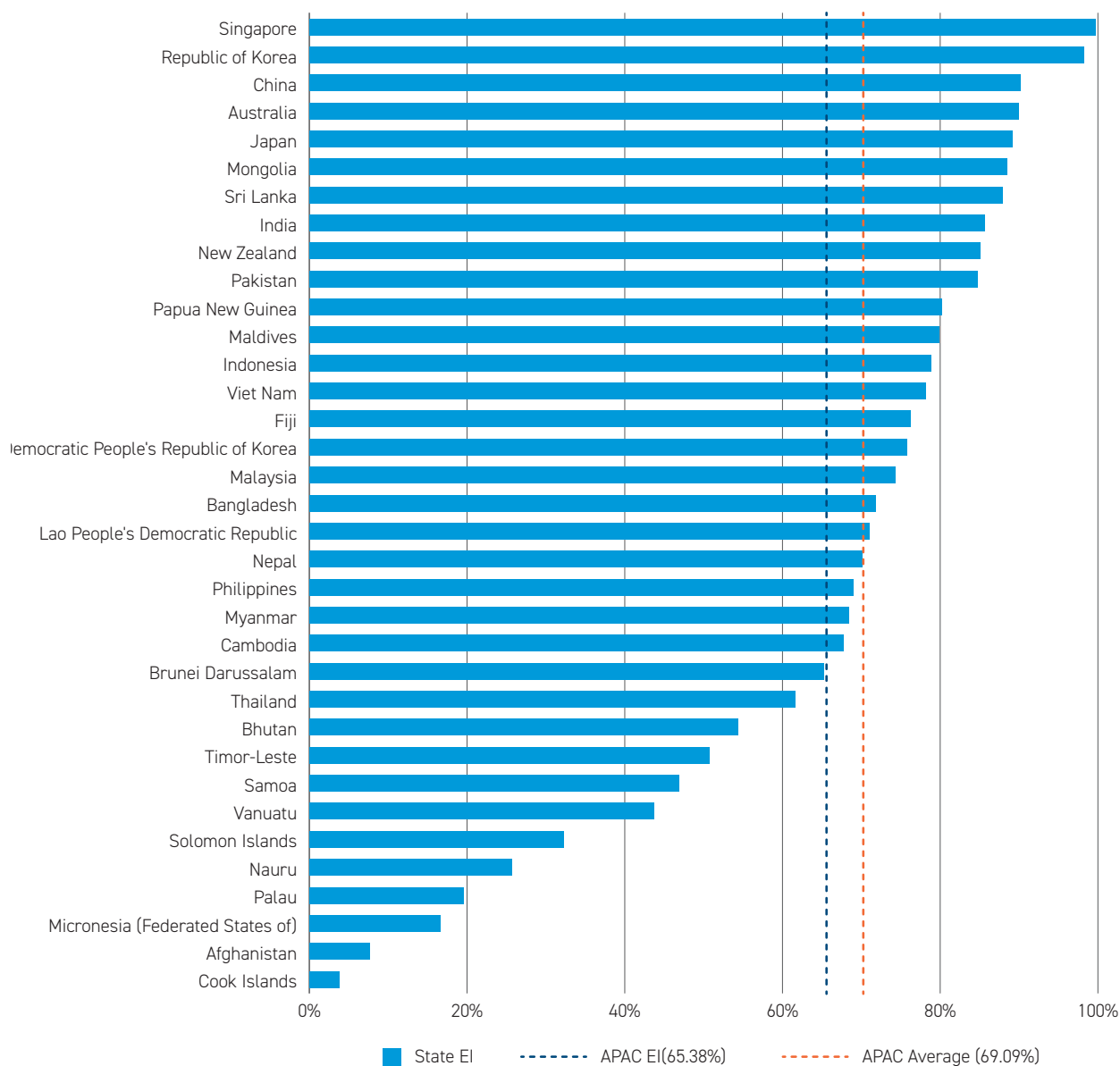


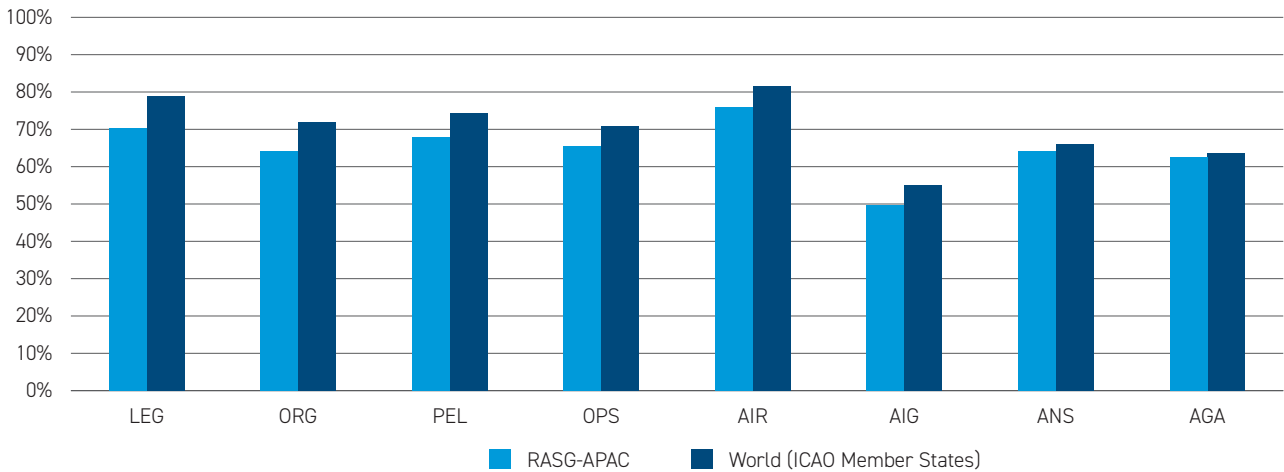
Chart 6.2 Overall EI (RASG-APAC)



RASG-APAC's USOAP Effective Implementation (EI) score rose to 65.3 % from 61.7 % in 2024. Despite the increase in EI scores, it remains lower than the global average of 69.1%. While the overall EI scores for this region remain relatively stable, it has persistently been lower than global average every year since 2017.

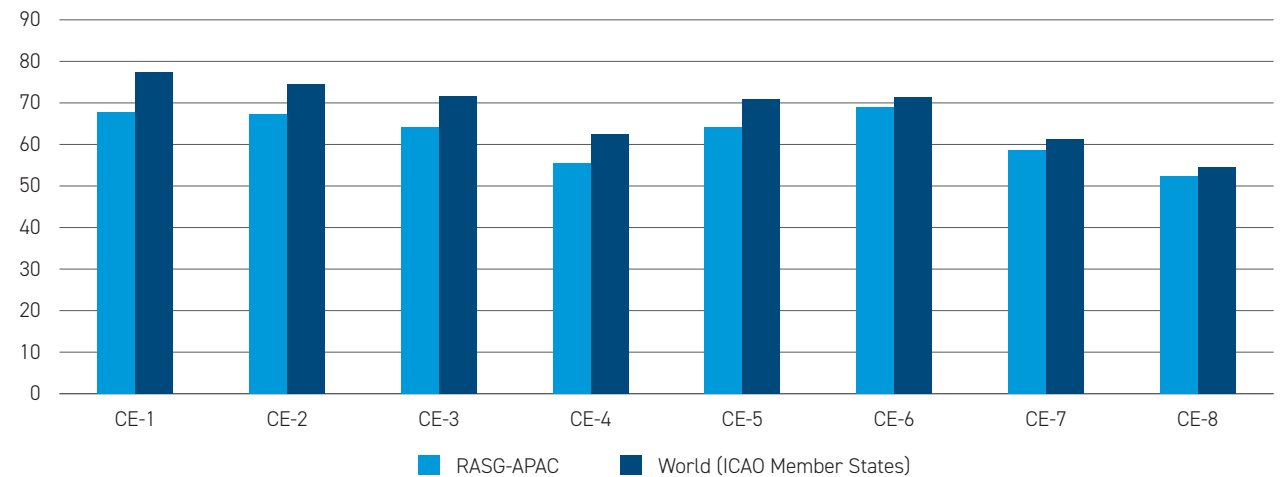
20 out of 39 member States have EI more than global average. 2 member States have not been audited.

Chart 6.3 EI by Audit Area (RASG-APAC vs World)



RASG-APAC's Effective Implementation scores are lower than global averages across all audit areas, with two areas requiring particular attention: Accident and Incident Investigation (AIG) at 49.66% (compared to global average of 55.05%) and Aerodrome and Ground Aids (AGA) at 62.44% (versus global average of 63.62%). These findings highlight the key areas where the region needs to strengthen its implementation.

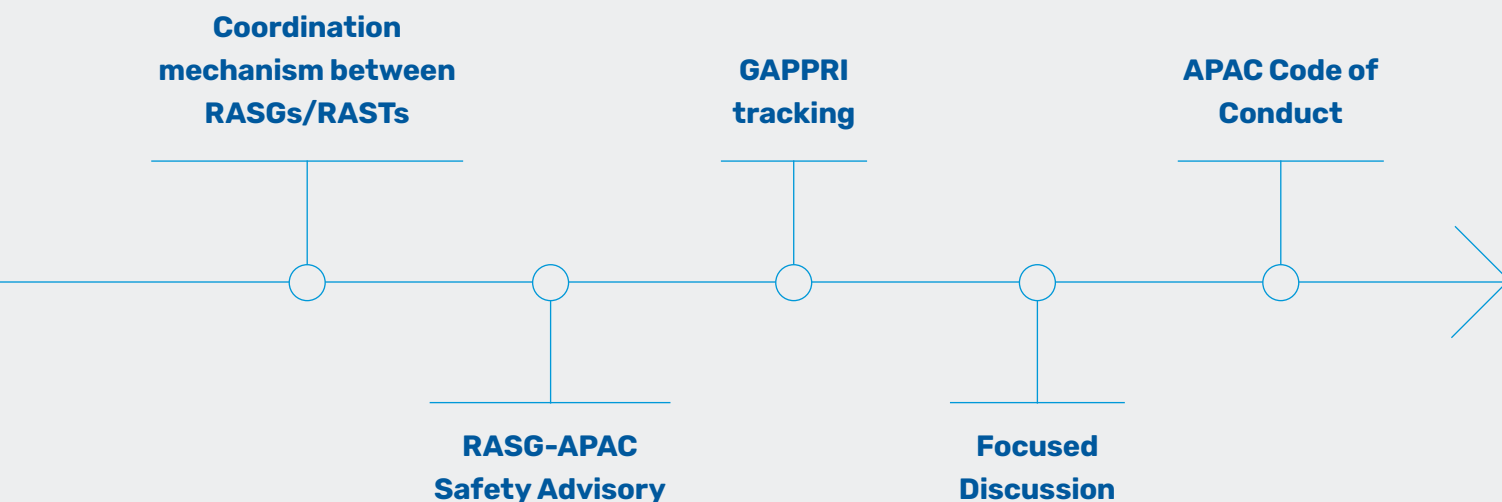
Chart 6.4 EI by Critical Element (RASG-APAC vs World)



By Critical Element (CE), the RASG-APAC region scores lower than the global average across all CEs, with two areas requiring more attention: CE-4 (Qualified technical personnel) at 55.37% (versus global average of 62.39%) and CE-8 (Resolution of safety issues) at 52.42% (versus global average of 54.63%). Overall, while the APAC region shows progress in certain areas, the chart emphasizes persistent gaps in legislative foundations and technical expertise that must be addressed to enhance the region's aviation safety oversight system.

07 Safety Initiatives

7.1 Overview of key developments



In 2024, the RASG-APAC made considerable progress in advancing the regional safety initiatives.

From developing and updating Safety Enhancement Initiatives, the RASG-APAC shifted its focus to leverage existing guidance materials to address high risk areas. An example is the analysis and tracking of the Global Action Plan for the Prevention of Runway Incursions (GAPPRI) document developed by Flight Safety Foundation and its partners. This has helped to focus the effort on identifying gaps within the region so that the necessary targeted intervention measures can be developed.

The RASG-APAC introduced the RASG-APAC Safety Advisory, or RSA in short, as a new communication mechanism to allow for timely dissemination of critical safety information and/or highlight specific mitigations found in existing guidance materials.

The RASG-APAC also established a coordination mechanism between RASGs and RASTs to enhance interregional collaboration on aviation safety. A 2-year trial is ongoing between APRAST and Pan America RAST to assess its effectiveness.

The RASG-APAC also introduced a new concept called the Focused Discussion where Subject Matter Experts present on specific issues of interest during the APRAST meeting. The Focused Discussion is held in a hybrid format to facilitate greater participation from the APAC community.

The RASG-APAC approved the APAC-Accident Investigation Group Code of Conduct on the cooperation relating to Civil Aviation Accident/Incident Investigation to be recognized as the Investigation Cooperation Mechanism for APAC Region.

Looking ahead, the APRAST will be implementing a new structure, aimed at enhancing coordination and streamline work processes. The changes would be gradually implemented over the next few APRAST meetings from 2025 onwards.

08 List of acronyms

AA	Audit Area	E-GPWS	Enhanced ground proximity warning system
ACAS	Airborne collision avoidance systems	EDTO	Extended Diversion Time Operations (replaces ETOPS)
ADRM	Aerodrome	EI	Effective Implementation
AFI	Africa (IATA Region)	EUR	Europe (ICAO and IATA Region)
AIS	Aeronautical information service	EVAC	Evacuation
AMAN	Abrupt manoeuvre	FDA	Flight data analysis
ANSP	Air navigation service provider	FLP	Flight planning (IATA)
AOC	Air operator certificate	F-NI	Fire/smoke (non-impact)
APAC	Asia Pacific	FMS	Flight management system
APR	Approach	FOQA	Flight operations quality assurance
ARC	Abnormal runway contact	F-POST	Fire/smoke (post-impact)
ASIA PAC	Asia/Pacific (ICAO Region)	FUEL	Fuel related
ASPAC	Asia/Pacific (IATA Region)	GASP	ICAO global aviation safety plan
ATC	Air traffic control	GCOL	Ground collision
ATM	Air traffic management	GNSS	Global navigation satellite system
BIRD	Birdstrike	GOA	Go-around
CABIN	Cabin safety events	GPWS	Ground proximity warning system
CAST	Commercial Aviation Safety Team	GSI	Global safety initiative
CE	Critical Element	HL	Hull loss. Aircraft destroyed, or damaged and not repaired
CFIT	Controlled flight into terrain	IATA	International Air Transport Association
CICTT	CAST/ICAO Common Taxonomy Team	ICAO	International Civil Aviation Organization
CIS	Commonwealth of Independent States (IATA Region)	ICE	Icing
CMA	Continuous monitoring approach	ICL	Initial Climb
CRM	Crew resource management	IMC	Instrument meteorological conditions
CRZ	Cruise	INOP	Inoperative
CVR	Cockpit voice recorder	IOSA	IATA operational safety audit
DFDR	Digital flight data recorder	iSTARS	Integrated Safety Trend Analysis and Reporting System
DGAC	Directorate General of Civil Aviation Conference	LALT	Low altitude operations
DGCA	Directors General of Civil Aviation		
DH	Decision height		

LATAM	Latin America and the Caribbean (IATA Region)
LEI	Lack of effective implementation
LND	Landing
LOC-G	Loss of control-ground
LOC-I	Loss of control-in-flight
LOSA	Line operations safety audit
MAC	AIRPROX/TCAS alert/loss of separation/ near miss collisions/mid-air collisions
MDA	Minimum descent altitude
MED	Medical
MEL	Minimum equipment list
MENA	Middle East and North Africa (IATA REGION)
NAM	North America (ICAO and IATA Region)
NASIA	North Asia (IATA Region)
NAVAIDS	Navigational aids
NOTAM	Notice to airman
OAG	Official Aviation Guide
OTH	Other
RA	Resolution advisory
RAMP	Ground handling operations
RE	Runway excursion (departure or landing)
RE-Landing	Runway excursion – Landing
RE-Take-off	Runway excursion – Take-off
RI	Runway incursion
RI-A	Runway incursion – animal
RI-VAP	Runway incursion – vehicle, aircraft or person
RS	Runway safety

RTO	Rejected Take-off
SAM	South America (ICAO Region)
SARPS	Standards and recommended practices (ICAO)
SCF-NP	System/component failure or malfunction – Non-powerplant
SCF-PP	System/component failure or malfunction – Powerplant
SD	Substantial damage
SEC	Security-related
SISG	Safety Indicator Study Group (ICAO)
SMS	Safety management system
SOP	Standard operating procedure
SRVSOP	Regional safety oversight system
SSP	State safety programme
TAWS	Terrain awareness warning system
TCAS	Traffic collision and avoidance system
TCAS RA	Traffic collision and avoidance system – Resolution advisory
TEM	Threat and error management
TOF	Take-off
TURB	Turbulence encounter
TXI	Taxi
UAS	Undesirable aircraft state
UNK	Unknown or undetermined
USOAP	Universal safety oversight audit programme
USOS	Undershoot/overshoot

