



Annual Safety Report

2024

ASIA PACIFIC REGION



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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 2024 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 Foreword

Regional Aviation Safety Group – Asia Pacific (RASG-APAC) Background

The establishment of the Regional Aviation Safety Group – Asia Pacific (RASG-APAC) was endorsed at the 47th DGCA conference as a focal point to ensure harmonisation and coordination of efforts aimed at reducing aviation safety risks for the Asia Pacific region.

RASG-APAC supports implementation of the ICAO Global Aviation Safety Plan (GASP) and the Global Aviation Safety Roadmap (GASR).

RASG-APAC membership includes representatives from the 41 States/Administrations associated with the ICAO Asia Pacific Regional Office.

RASG-APAC has established the Asia Pacific Regional Aviation Safety Team (APRAST) to implement its work programme. The objectives of APRAST include recommending safety enhancement initiatives to the RASG-APAC which will reduce aviation risks. To do so, APRAST will:

- review, for application within the Asia Pacific region, existing safety enhancement initiatives (SEIs) which have already been developed through the efforts of well-established, multinational safety initiatives.
- review, for application within the Asia Pacific region, the best practices and metrics defined in the GASP/GASR.
- review regional accidents, significant incident trends and other areas of local concern to determine unique issues that may warrant locally developed SEIs. The focus and priority for APRAST will be to introduce, support, and develop actions that have the potential to effectively and economically reduce regional aviation risks.

Supporting the work of the APRAST, are three Working Groups:

- a. Safety Enhancement Initiative Working Group (SEI WG)
- b. Safety Reporting Programme Working Group (SRP WG); and
- c. Asia-Pacific Regional Aviation Safety Plan (RASP) Standing Working Group

SEI WG

The role of the SEI WG is to assist APRAST in the development, implementation and review of SEIs to reduce aviation risks. These SEIs could be established based on the analysis of regional data, based on ICAO initiatives or the initiatives of other relevant organisations or regions or based on the risks and issues identified through the USOAP CMA process. The identified SEIs should be prioritised to ensure that those that have the greatest potential for reducing safety risk are examined first.

To accomplish the objectives, the SEI WG will:

- i. Assist APRAST in the identification and development of SEIs, for application within the Asia and Pacific regions, which are aligned with the regional priorities and targets. The focus of these SEIs is to effectively and economically mitigate regional safety risks identified by the SRP-WG
- ii. Assist APRAST in the provision of generic implementation guidance related to the SEIs to guide members through the SEI implementation process.
- iii. Assist APRAST in the identification of assistance programmes such as, but not limited to, workshops and seminars to improve the level of implementation of developed SEIs, with the support of the Secretariat.
- iv. Develop and conduct a process to review existing SEIs and provide recommendations to improve the effectiveness and level of implementation.

SRP WG

The SRP WG's role is to gather safety information from various sources to determine the main aviation safety risks in the Asia Pacific region. To be included in the Annual Safety Report are:

- i. Reactive information
- ii. Proactive information

The Information Analysis Team (IAT) formed within the SRP WG will analyse the available safety information to identify risk areas. Recommendations for safety enhancement initiatives will be made by the SRP WG to the RASG-APAC, through APRAST, based on the identified risk areas.

AP-RASP Working Group

The role of the AP-RASP Standing Working Group (AP-RASP WG) is to:

- i. Review and update the AP-RASP every three years in line with the corresponding updates of the GASP and based on the outcomes of the relevant high-level/regional safety meetings and commitments/declarations.
- ii. In coordination with all subgroups and other relevant ICAO regional bodies, monitor, support and report the progress of AP-RASP implementation and achievement of Targets.
- iii. Present the updated AP-RASP to APRAST/RASG-APAC for endorsement.

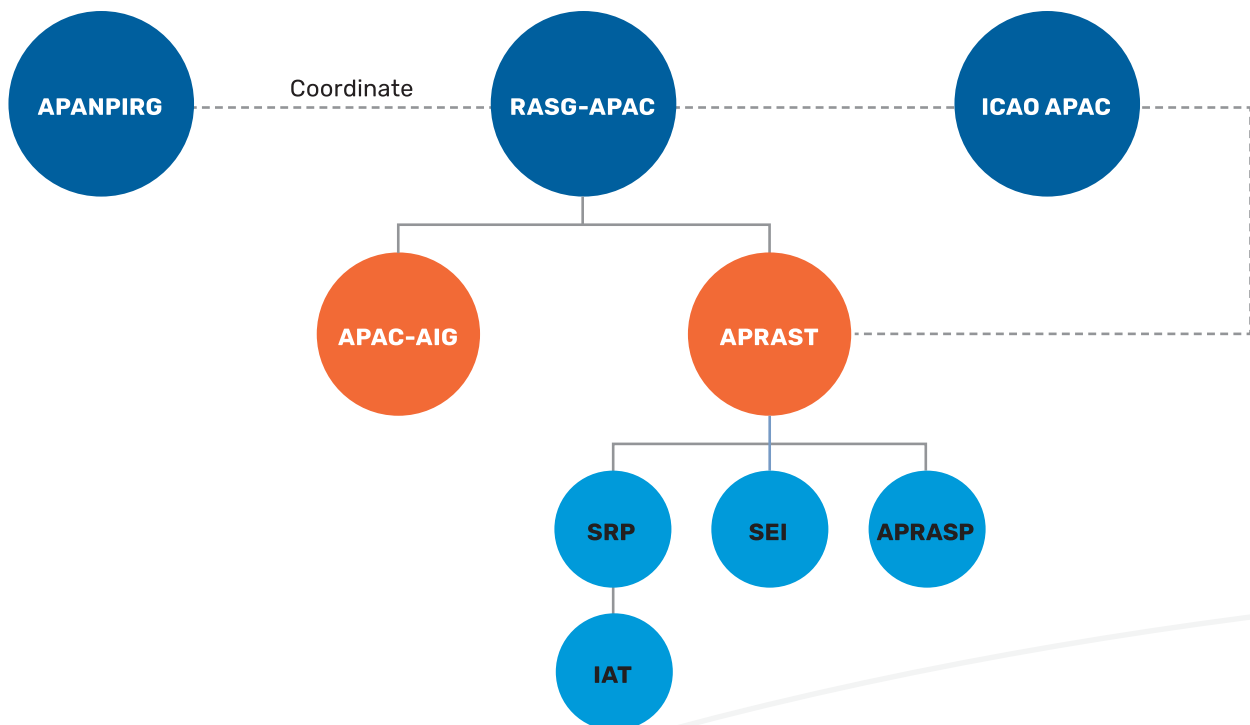
The organisational structure of the RASG-APAC and its subsidiary bodies is shown in Figure 1.1. The International Civil Aviation Organization (ICAO) Asia Pacific regional office in Bangkok provides the secretariat support necessary for the RASG-APAC to function.

The 2024 Annual Safety Report, developed by the SRP WG and published by RASG-APAC, is the 11th edition of exclusive safety report for the Asia Pacific region based on data provided by ICAO, the US Commercial Aviation Safety Team (CAST) and the International Air Transport Association (IATA). Analysis of this aviation safety data was completed with the in-kind contributions of aviation safety personnel from RASG-APAC member States/Administrations and industry partners. This report is envisioned to be an annual publication providing appropriately updated aviation safety information.

Copies of this report can be downloaded from:
<https://www.icao.int/APAC/RASG/Pages/APAC-Safety-Report.aspx>.

For clarification or additional information please email:
apac@icao.int.

Figure 1.1 RASG-APAC Organisation



02 Introduction

The objectives of this RASG-APAC Annual Safety Report are to gather safety information from various stakeholders, analyse the main aviation safety risks in the Asia Pacific region and identify possible actions for enhancing aviation safety in a coordinated manner.

The safety information presented in this report is based on the compilation and analysis of data provided by ICAO, IATA, CAST and data from the Official Aviation Guide, checked and verified by ICAO.

Accident and fatal accident occurrence data was sourced from ICAO iSTARS for the reference period 2010–2016, with data for 2017–2019 being sourced from ICAO's Safety Indicator Study Group (SISG). In subsequent APAC Annual

Safety Reports, SISG data will replace all iSTARS data beyond 2017 when SISG data was made available.

This 11th edition of the RASG-APAC Annual Safety Report focuses on reactive information relating to hull loss and fatal accidents (both on the ground and in flight) involving commercial aeroplanes operated by (or registered with) the member States/Administrations of the RASG-APAC i.e. States/Administrations associated with the ICAO Asia Pacific Regional Office. It will also include proactive information for the Asia Pacific region based on USOAP Continuous Monitoring Approach (CMA).

In this report, the most frequent accident categories, in accordance with the CAST/ICAO Common Taxonomy Team which is also used by IATA, relating to fatality risk, as well as other significant emerging risk categories in the Asia Pacific region, are identified.

Figure 2.1 Asia Pacific region – countries associated with the ICAO Asia Pacific Regional Office

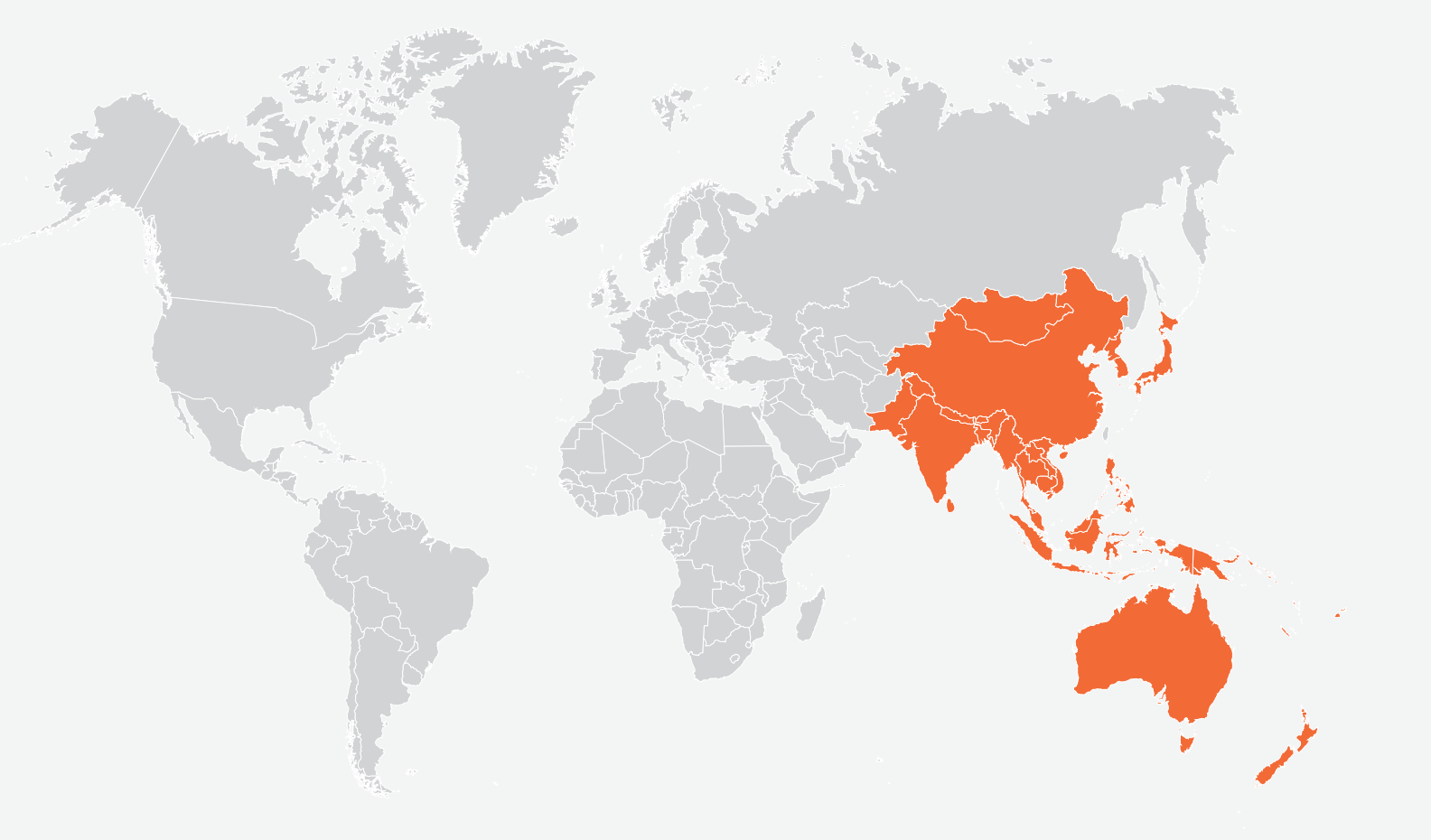


Table 2.1 Member States/Administration accredited with the ICAO Asia Pacific Office

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)	

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03 Executive summary

This edition of the RASG-APAC Annual Safety Report collates and presents the results of analysis carried out by members of the IAT on aviation accidents in the APAC region. The safety information was collected from ICAO, IATA and CAST.

Reactive information Analysis*

The Global accident rate showed a downtrend from 2022 to 2023. In 2023, the accident rate decreased from 2.05 accidents per million departures in 2022 to 1.87 per million departures in 2023. Similarly, RASG-APAC accident rate also decreased from 1.38 per million departures to 0.78 per million departures over the same period. The RASG-APAC's accident rate has remained lower than the global accident rate over the past decade. Overall, the five-year moving average accident rate, globally and for RASG-APAC, has shown a consistent downward trend.

The number of accidents attributable to States/Administrations in the RASG-APAC region in 2023 dropped from 13 in 2022 to 9 in 2023. In terms of fatalities, there was 1 fatal accident in 2023, down from 2 in 2022. The fatal accident that occurred in APAC was attributed to loss of control in-flight. In 2023, turbulence and system component failure non-powerplant each accounted for 2 accidents, followed by one accident each for ground collision, LOC-I and Abnormal Runway Contact. From 2019 to 2023, the three most common accident categories over the past five years were:

- i. Turbulence
- ii. Abnormal Runway Contact (ARC) and
- iii. Runway Excursion.

Proactive information analysis

The RASG-APAC region had an overall USOAP Effective Implementation (EI) score of 61.77 per cent in 2024, slightly lower than its performance of 63.62 per cent in 2023. This result remains lower than the global level of 68.10 per cent.

In terms of Critical Elements (CE), the APAC region had lower EI scores for all categories as compared with the global average. By CE, CE-4 on *Technical personnel qualifications and training* and CE-8 on *Resolution of safety concerns* had the lowest EI scores within RASG-APAC, at 51.3 and 50.5 per cent respectively. By area, Accident and Incident Investigation (AIG) and Aerodrome and Ground Aids (AGA) had the lowest EI scores of 49.42 per cent and 59.13 per cent respectively.



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04 Safety information

Safety information is an important input for any safety management process. With adequate and accurate safety information, hazards can be identified through robust processing and critical analysis. Identified hazards and their associated risk can then be prioritised and appropriate mitigation actions taken.

RASG-APAC can be viewed as a regional safety management process or a regional safety program (RSP) in the same way that a State Safety Program (SSP) is a national safety management process and a Safety Management System is a service provider's safety management program. Using safety information provided by ICAO, IATA and CAST helps the region to identify the areas of greater safety concerns and therefore be able to collectively focus on addressing these areas.

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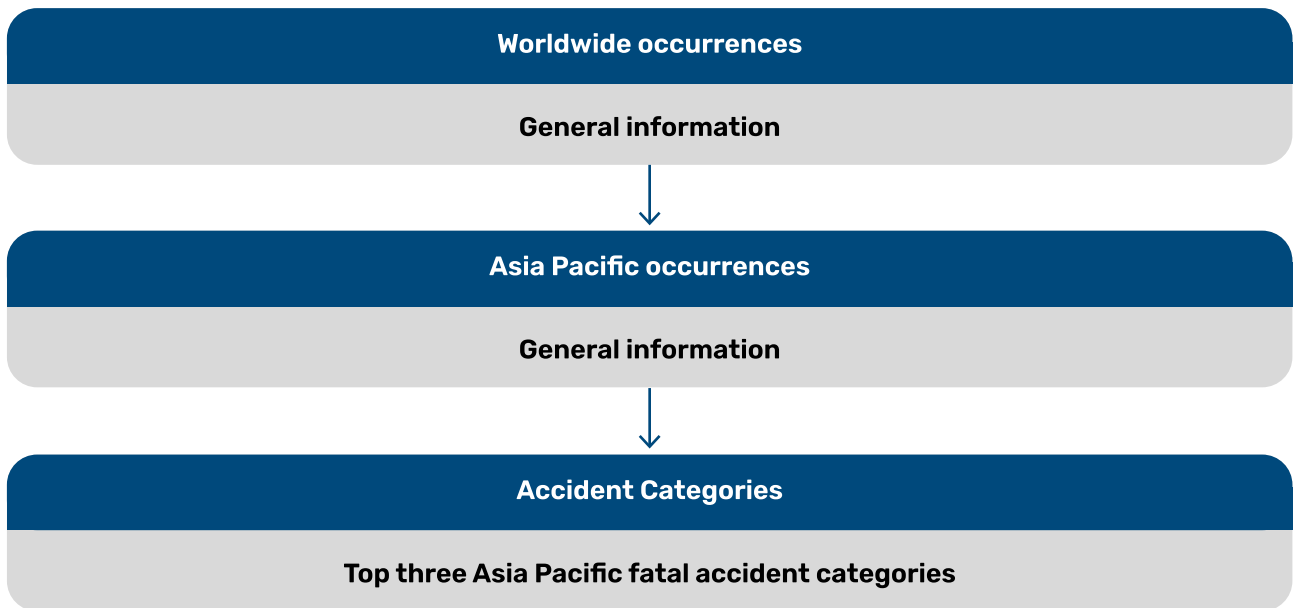
05 Approach for Analysis

Our approach for the analysis is to process the accident information, provided by ICAO, IATA and CAST, involving commercial aircraft of MTOW greater than 5700kg operated by (or registered with) the members States/Administrations of RASG-APAC.

All reported information is for aircraft involved in scheduled commercial activities which are either validated or under validation. The analysis initially focuses on accident rates, numbers and categories from a global versus APAC perspective, then on the sub-regions of North Asia, South Asia, South East Asia and the Pacific. The process is illustrated in Figure 5.1.

The grouping of States/Administrations into the four APAC sub-regions will firstly be 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 sub-regional body, or geographical association. The results of the analysis for each of the sub-regions can therefore be used by the various COSCAP or sub-regional groupings to identify work programmes. Moreover, each of the COSCAPs will be able to provide assistance in implementation and training in areas that are more relevant to their sub-regions.

Figure 5.1 Approach for analysis



The grouping of the States/Administrations in the four RASG-APAC sub-regions is as follows:

North Asia (NA) region

States/Administrations that are members of COSCAP-NA:

- China (including Chinese Taipei)
- Hong Kong, China
- Macao, China
- Democratic People's Republic of Korea
- Japan
- Mongolia
- Republic of Korea

South East Asia (SEA) region

States/Administrations that are members of COSCAP-SEA:

- Brunei Darussalam
- Cambodia
- Indonesia
- Lao People's Democratic Republic
- Malaysia
- Myanmar
- Philippines
- Singapore
- Thailand
- Timor Leste
- Vietnam

South Asia (SA) region

States/Administrations that are members of COSCAP-SA:

- Afghanistan
- Bangladesh
- Bhutan
- India
- Maldives
- Nepal
- Pakistan
- Sri Lanka

Pacific region

States/Administrations that are members of the Pacific Aviation Safety Office (PASO):

- Australia (Including Norfolk Island and Christmas Island)
- Cook Islands
- Fiji
- Kiribati
- Marshall Islands
- Micronesia (Federated States of)
- Nauru
- New Zealand
- Palau
- Papua New Guinea
- Samoa
- Solomon Islands
- Tonga
- Tuvalu
- Vanuatu

06 Reactive Safety Information

Background

As defined in the fourth edition (2.5.2) of the ICAO Document 9859, a reactive analysis method responds to events (such as incidents and accidents) that have already happened and about which information has been collected. In the context of this report, all the reactive safety information analysed relates to accidents involving aircraft operated by (or registered with) the member States/Administration within the RASG-APAC region.

Data Sources

The reactive safety information analysed in this report has been obtained from ICAO, IATA and CAST, and the organisation of this information will take these sources into account. It is important to note that the definition of an accident differs between ICAO and IATA and this should be considered when comparing trends from these data providers.

Please note:

1. ICAO's reactive safety information is derived from ADREP reports, validated by the Safety Indicator Study Group (SISG). The SISG reviews and validates aviation safety occurrence information supplied by member States' investigative bodies. The definition of 'accident' is based on ICAO Annex 13.
 2. IATA's reactive safety information relates to accidents that result in hull loss, fatalities and substantial damage to aircraft. It contains statistics on accidents classified by the Accident Classification Technical Group and uses the same definitions for the IATA Annual Safety Report. All Regional Rates are based on the operator's State of registry and rates are always based on per million sectors (flights).
- > 'All Accident Rate' contains all accidents (hull loss and substantial damage) for the type of analysis being performed. For example, 'all accident rate' in the general context means all accidents, of all aircraft types that meet the ACTG criteria (commercial operation, jet or turboprop and MTOW > 5,700Kg) and of all accident categories; 'all accident rate' in the context of jet/Hard Landing means all jet accidents (hull loss and substantial damage) that had a hard landing.
 - > Only accidents of the following categories are part of the database:
 - Controlled Flight-Into-Terrain (CFIT)
 - Loss of Control In-flight
 - Runway Collision
 - Mid-air Collision
 - Runway/Taxiway Excursion
 - In-flight Damage
 - Ground Damage
 - Undershoot
 - Hard Landing
 - Gear-up Landing/Gear Collapse
 - Tailstrike
 - Off Airport Landing/Ditching
 - Other End State
 - > IATA defines 'sector' as the operation of an aircraft between take-off at one location and landing at another location (other than a diversion)
 - > IATA's North Asia (NASIA) and Asia Pacific (ASPAC) regions are equivalent to ICAO's APAC region.



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Global and Asia Pacific Safety Trends

6.1 Global and APAC Accident Rates

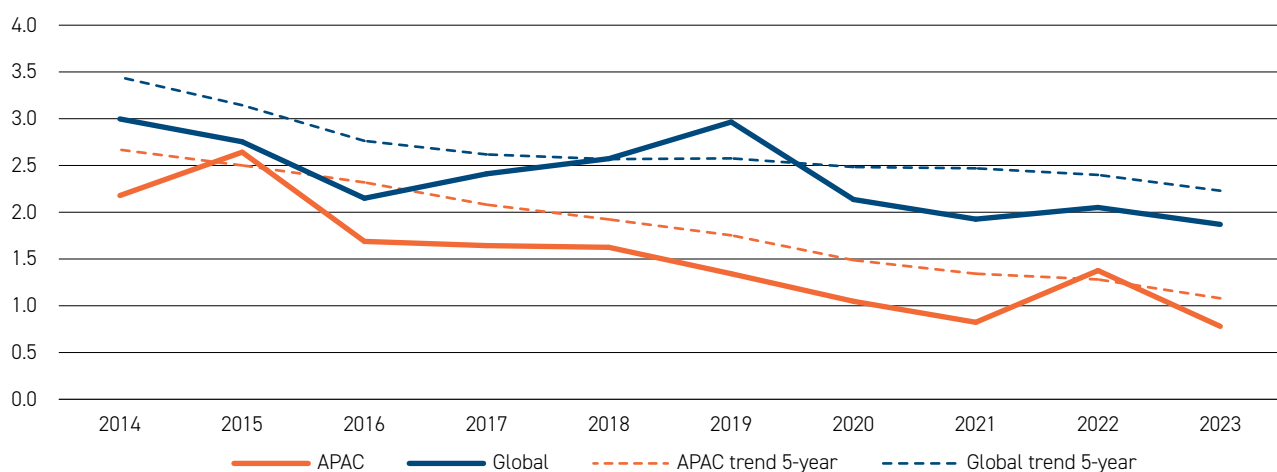
Global accident rates, APAC accident rates and the accident rates for the four RASG-APAC sub-regions were compiled, based on information provided by ICAO, including accident data from the SISG and departures data from the Official Aviation Guide (OAG). All information presented is dependent on accurate information being supplied by member States.

In 2023, the APAC region recorded an accident rate of **0.78 per million departures, down from 1.38 per million departures in 2022**. As compared to the global accident rate of 1.87 per million departures, the APAC region's accident rate is significantly lower in 2023. The decrease

in the accident rate within APAC can be attributed to the lower number of accidents in 2023 (9) as compared to 2022 (13) and increase in air traffic to 11.6m departures in 2023 from 9.4 million departures in 2022. Globally, there were 66 accidents in 2023, up from 64 in 2022.

The accident rate in the APAC region has also declined significantly over the last decade from 2.18 (2014) to 0.78 (2023) per million departures. This compares favourably with the global accident rates where the rate of decline has been less over the same period, from 3.00 (2014) to 1.87 (2023) accidents per million departures.

Chart 6.1.1 Global vs RASG-APAC accident rate (2014–2023)



The region's 5-year moving average also shows a positive downward trend with a reduction from 2.67 per million departures in 2014 to 1.08 per million departures in 2023.

According to IATA, the accident rates in 2023 are **0.37 and 0.80 accidents per million departures for APAC and the World respectively**. Both the APAC and global accident rates decreased in 2023 as compared to 2022. On a long-term basis, it can be observed that there is a decreasing trend in APAC's accident rates since 2014.

Although there is a degree of consistency between ICAO and IATA data, there are some variations in the trends exhibited. This may in part be due to the different accident definition used i.e. hull loss, fatalities and substantial

damage, relative to the definition used by ICAO iSTARS which extends to accidents involving serious injuries and accidents where aircraft damage may not have resulted in hull loss.

Figure 6.1.3 shows the fatal accident rate from 2014 to 2023 in both the APAC region and the world. In 2023, the fatal accident rate in the APAC region was **0.09 per million departures, down from 0.21 per million departures**. The APAC region's fatal accident rate was higher than the global average of 0.03 per million departures. On a long-term basis, both the fatal accident rate for APAC region and the world are trending downwards since 2014. The 5-year trend for the fatal accident rate in the APAC region remains stable and is below the global 5-year trend.

Chart 6.1.2 IATA: APAC region's accident rate (2014-2023)

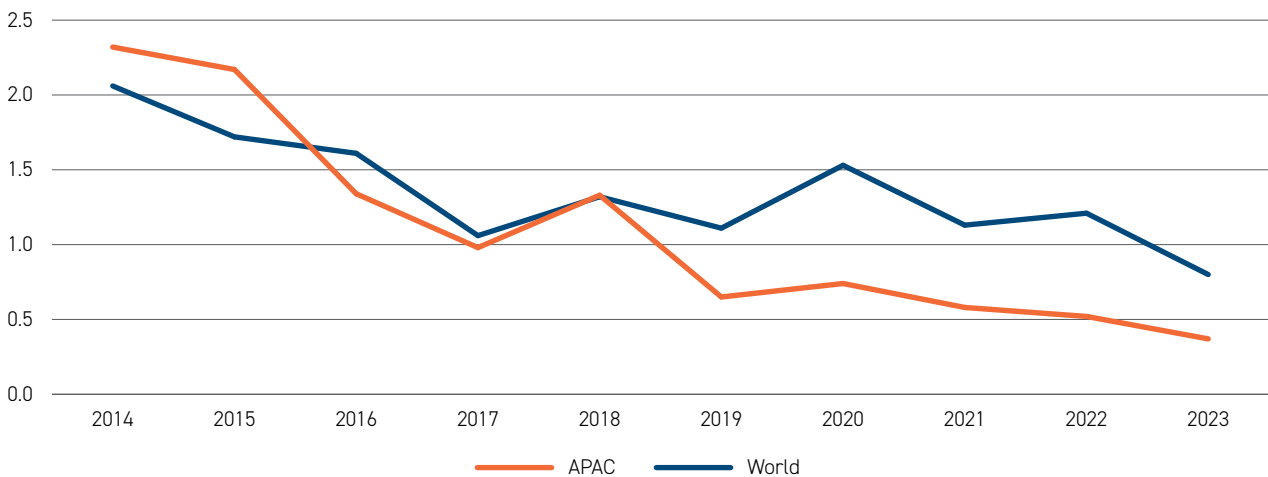
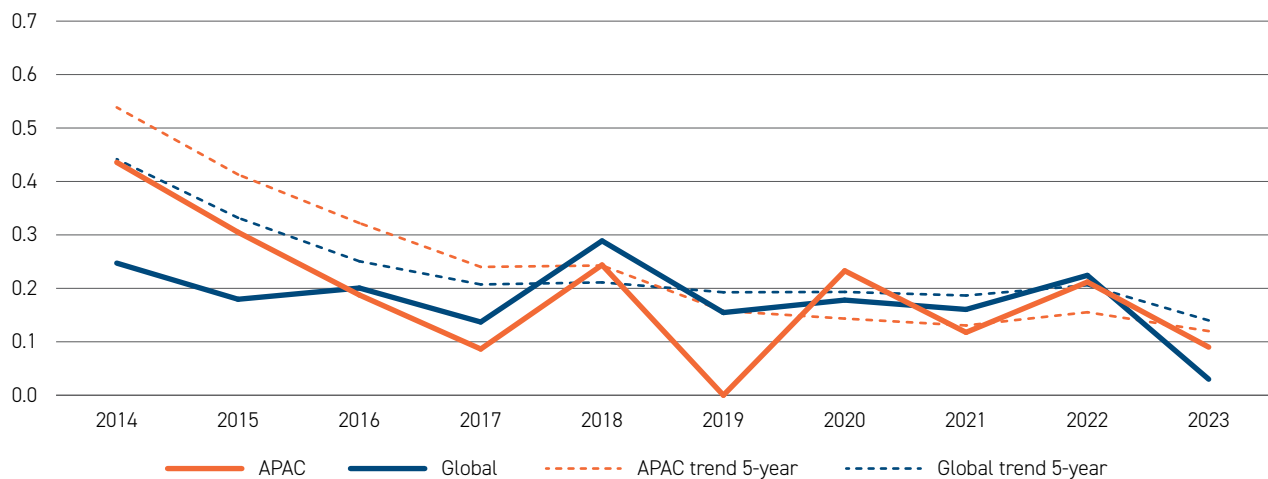


Chart 6.1.3 Global vs RASG-APAC fatal accident rate (2014-2023)



6.2 Global and APAC Accident Numbers

In 2023, the APAC region recorded a total of 10 accidents, 1 of which was fatal. This represented a decrease of 13 accidents and two fatal accidents in 2022 respectively. A summary of the accident numbers over the past 10 years is shown in Chart 6.2.1.

Comparing the long term-trend in accident numbers, a general downward trend can be observed for the APAC region over the years. Prior to 2023, the average number of accidents and fatal accidents in the previous five years was 12 and 2 respectively.

Chart 6.2.2 provides an IATA breakdown of accident counts of APAC operators by Region of Occurrence (Worldwide and in APAC region), and a breakdown by Region of Operator in the APAC region (APAC and non-APAC operator). Not surprisingly, most APAC

operator accidents occur within the APAC region, while non-APAC operator accidents are very seldom in the APAC region. The number of accidents attributable to APAC operators remained the same from 2022 to 2023. The number of accidents in APAC region dipped slightly from 6 in 2022 to 5 in 2023.

Chart 6.2.3 shows the fatality risk for both APAC and the world from 2014-2023. In 2023, the fatality risk in the APAC region decreased from 0.10 per million sectors in 2022 to 0.07 per million sectors in 2023. This was due mainly to the decrease in the number of fatal accidents from 2 in 2022 to 1 in 2023. APAC region's fatality risk of 0.07 per million sectors was higher than the global rate of 0.03 per million sectors. Overall, the fatality risk in the APAC region has decreased from 0.3 per million sectors in 2014 to 0.07 per million sectors in 2023.



Chart 6.2.1 ICAO iSTARS and OVSG: Number of accidents – RASG-APAC (2014–2023)

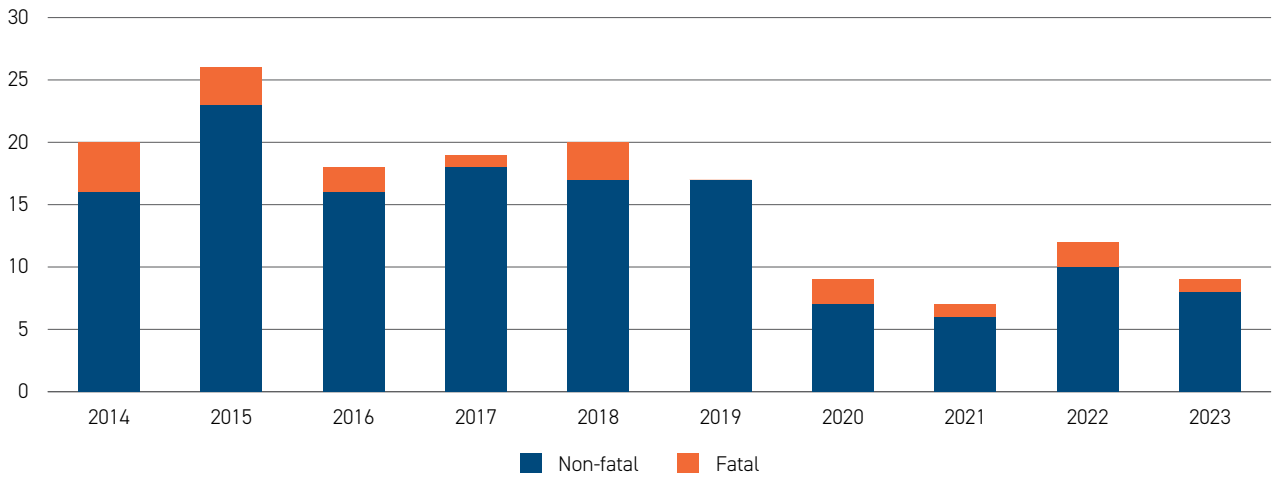


Chart 6.2.2 IATA: APAC operator accidents

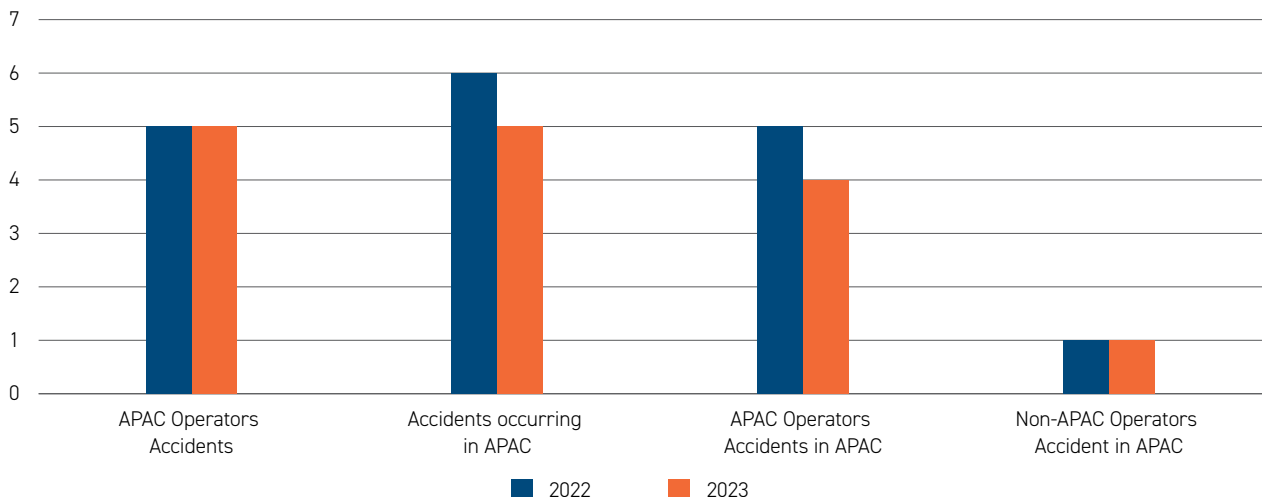
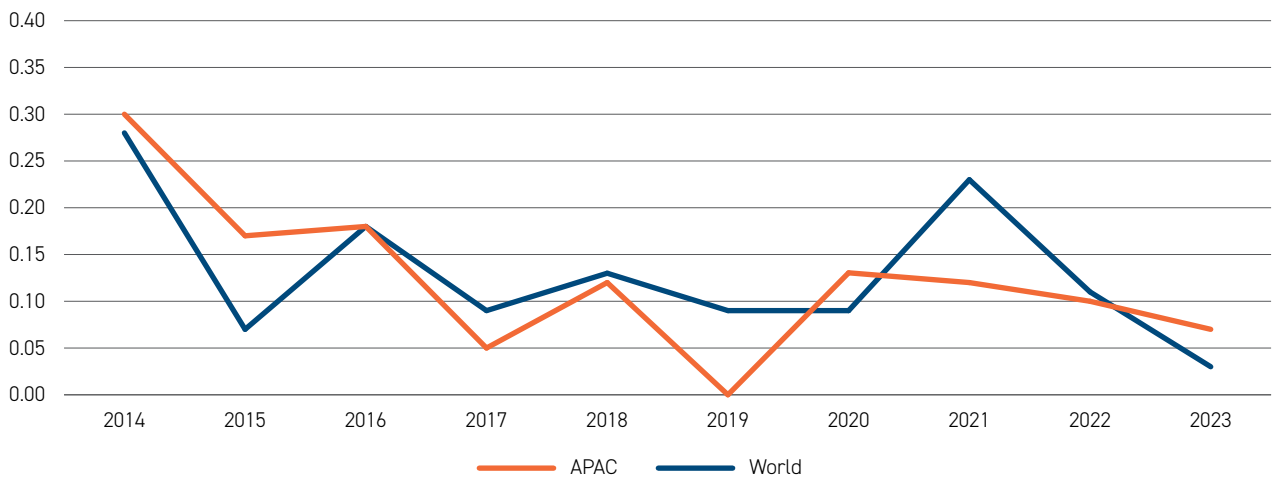


Chart 6.2.3 IATA: Fatality risk (2014–2023)



6.3 Global and APAC Accident Categories

In the Asia Pacific Regional Aviation Safety Plan AP-RASP 2023 to 2025 (AP-RASP 2023-2025), CFIT, LOC-I, Runway Safety (which include Runway Excursion, Runway Incursion and Abnormal Runway Contact) were identified as the regional high-risk accident categories (HRCs).

Table 6.3.1 shows the breakdown of fatal accident categories in the APAC region from 2019 to 2023. Over the past decade, fatal accidents in APAC were most likely attributed to:

- i. Loss of Control in Flight (LOC-I) or
- ii. Runway Safety.

In 2023, the single fatal accident that occurred in APAC was attributed to LOC-I. No fatal accidents were attributable to CFIT or Runway Safety in 2023.

Table 6.3.2 shows the breakdown of accident categories in the APAC region from 2019 to 2023. The three most common accident categories over the past five years were:

- i. Turbulence
- ii. Abnormal Runway Contact (ARC) and
- iii. Runway Excursion.

In 2023, there were two accidents attributed to turbulence and one accident attributed to ARC.

There were no runway excursion accidents.

There were also two accidents attributed to System Component Failure- Non Powerplant (SCF-NP) and one accident attributed to Ground Collision (GCOL).

Table 6.3.1 APAC fatal accident categories (2019–2023)

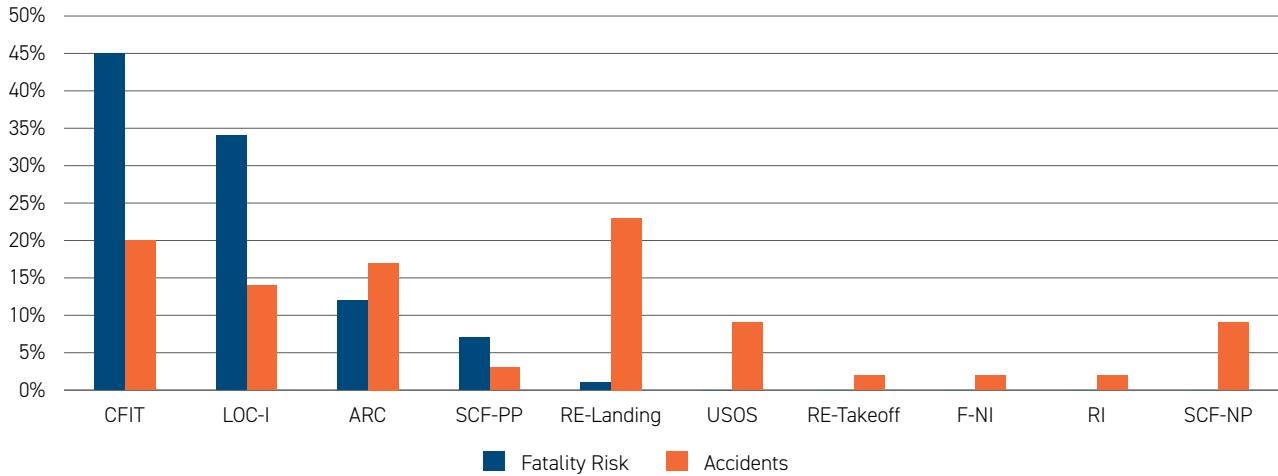
Year	TURB	UNK	LOC-I	CFIT	RE	ARC	Total
2019	0	0	0	0	0	0	0
2020	0	0	0	0	1	1	2
2021	0	0	1	0	0	0	1
2022	1	1	0	0	0	0	2
2023	0	0	1	0	0	0	1
Total	1	1	2	0	1	1	6

Table 6.3.2 APAC accident categories – fatal and non-fatal (2019–2023)

Year	TURB	F-NI	SCF-			RS	LOC-I	CFIT	ADRM	ARC	RAMP	GCOL	AMAN	Total
			RE	NP	OTH									
2019	6	1	3	0	0	0	0	0	0	4	1	1	1	17
2020	3	1	1	0	0	0	0	0	0	4	0	0	0	9
2021	2	0	0	0	0	0	1	0	0	3	0	0	1	7
2022	7	0	3	0	3	0	0	0	0	0	0	0	0	13
2023	2	0	0	2	2	0	1	0	0	1	0	1	0	9
Total	20	2	7	2	5	0	2	0	0	12	1	2	2	55

From a fatality risk perspective, data from CAST, as shown in Chart 6.3.1, identified (i) Controlled Flight into Terrain (CFIT) (ii) Loss of Control In-Flight (LOC-I) and (iii) Abnormal Runway Contact (ARC) as the accident categories with the highest fatality risk for APAC operator domicile countries over the past ten years.

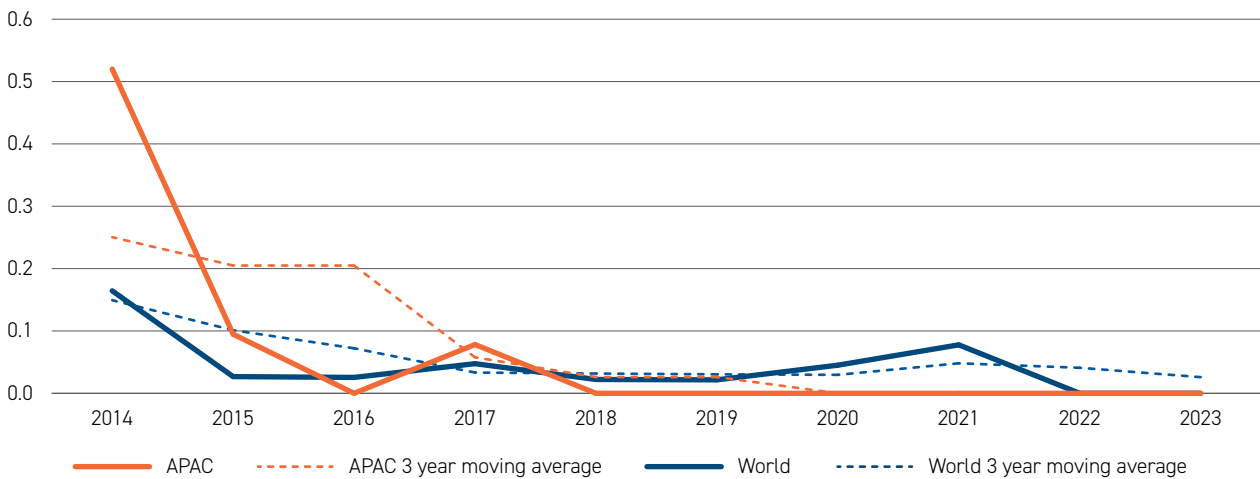
Chart 6.3.1 CAST: Fatality and accident risks for high-risk accident categories in APAC



CFIT

Chart 6.3.2 shows the CFIT accident rate for APAC region over the last ten years. There is no CFIT accidents in the APAC region since 2018.

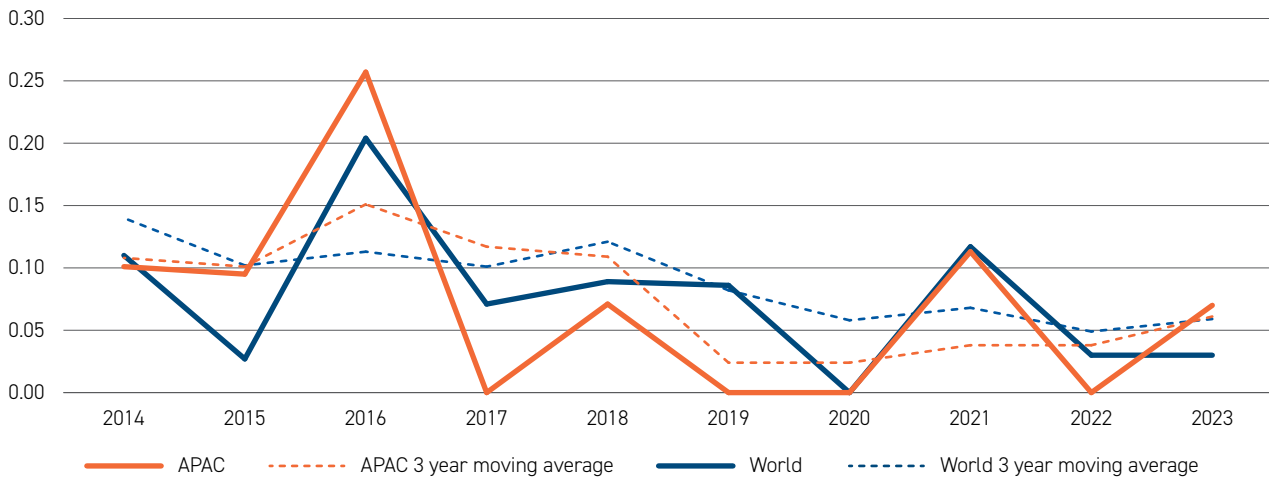
Chart 6.3.2 IATA: Annual Controlled Flight into Terrain (CFIT) accident rate (APAC vs. World)



LOC-I

Chart 6.3.3 shows the LOC-I accident rate for APAC region over the last ten years. In 2023, there was a fatal LOC-I accident in the APAC region that resulted in 72 fatalities on board. The region's LOC-I accident rate of 0.07 per million sectors is higher than the global average of 0.03 per million sectors.

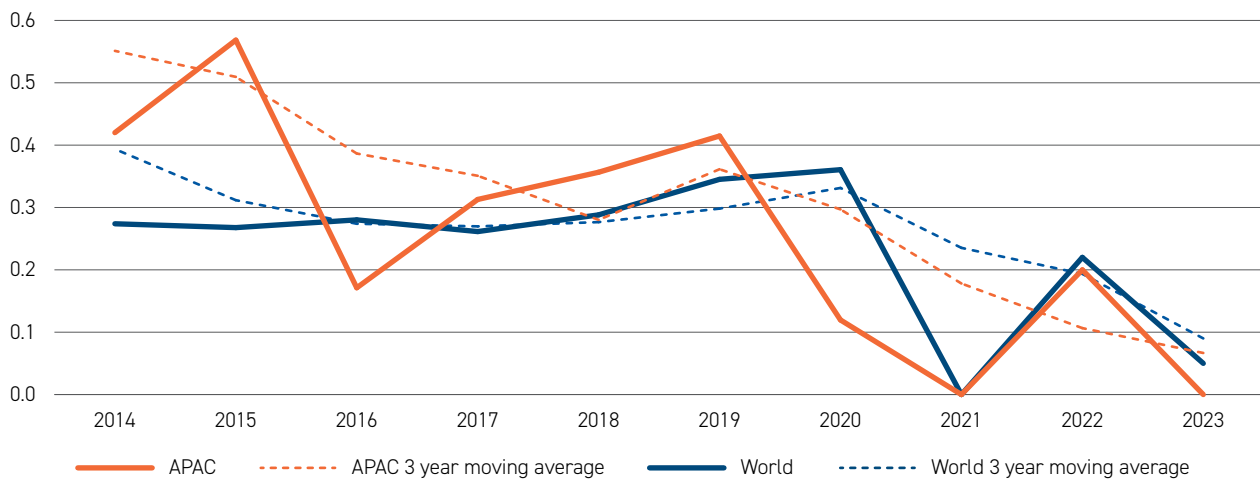
Chart 6.3.3 IATA: Annual loss of control in-flight accident rate (APAC vs. World)



Runway excursion

Chart 6.3.4 shows the runway excursion accident rate for the APAC region over the last ten years. In 2023, there were no runway excursion accidents in the APAC region. The region's runway excursion accident rate of 0 per million sectors in 2023 is lower than the global average of 0.05 per million sectors.

Chart 6.3.4 IATA: Annual runway/taxiway excursion accident rate (APAC vs. World)



Asia Pacific Sub-Regional Safety Trends

6.4 Sub-regional Accident Rates, Numbers and Categories

Chart 6.4.1 provides an illustration of the accident rates within APAC by sub-region. In 2023, South Asia and North Asia's accident rates decreased year-on-year from 0.69 to 0.60 per million departures and 2.05 to 0.7 per million departures respectively. Southeast Asia's accident rates have increased from 0.52 per million departures in 2022 to 0.9 per million departures in 2023, whereas the accident rate in the Pacific region increased from 0 per million departures to 0.99 per million departures. All sub-regions' accident rates were below the global average rate of 1.9 for 2023.

The five-year moving average for accident rates in APAC is presented in Chart 6.4.2. The data shows a reduction in the accident rate trend since 2018 for all sub-regions, except for the North Asia region. North Asia maintains one of the lowest 5-year average accident rate despite an increase in accident rate in 2023. The five-year moving average accident rates for South Asia at 2.2 is on par with global average, whereas the other regions are below the global average.

Chart 6.4.1 ICAO iSTARS, SISG and OAG: APAC sub-regional accident rate (2014–2023)

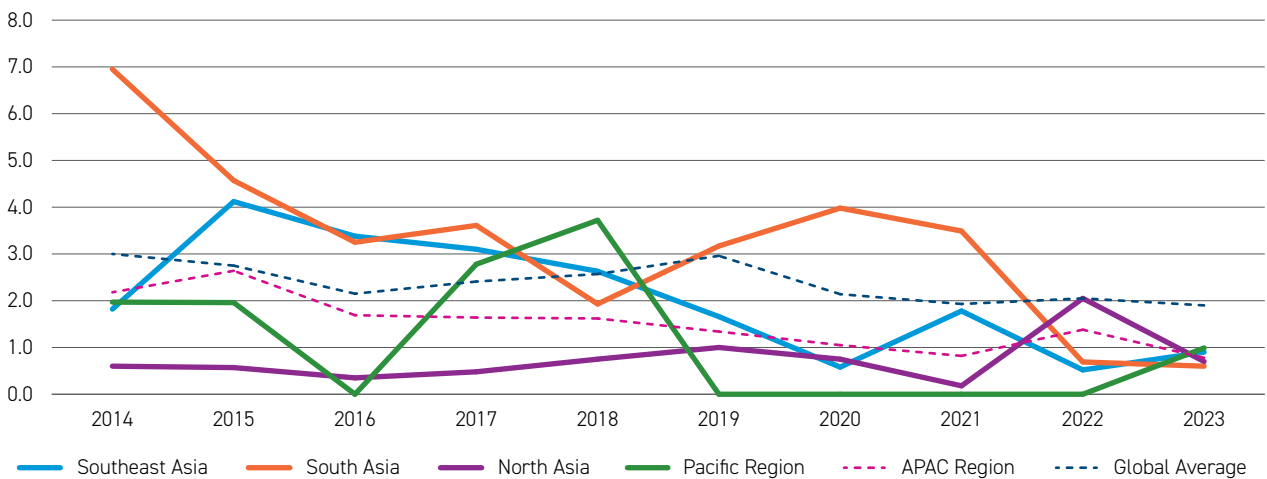


Chart 6.4.2 ICAO iSTARS, SISG and OAG: APAC sub-regional accident rate 5 Year moving average (2019–2023)

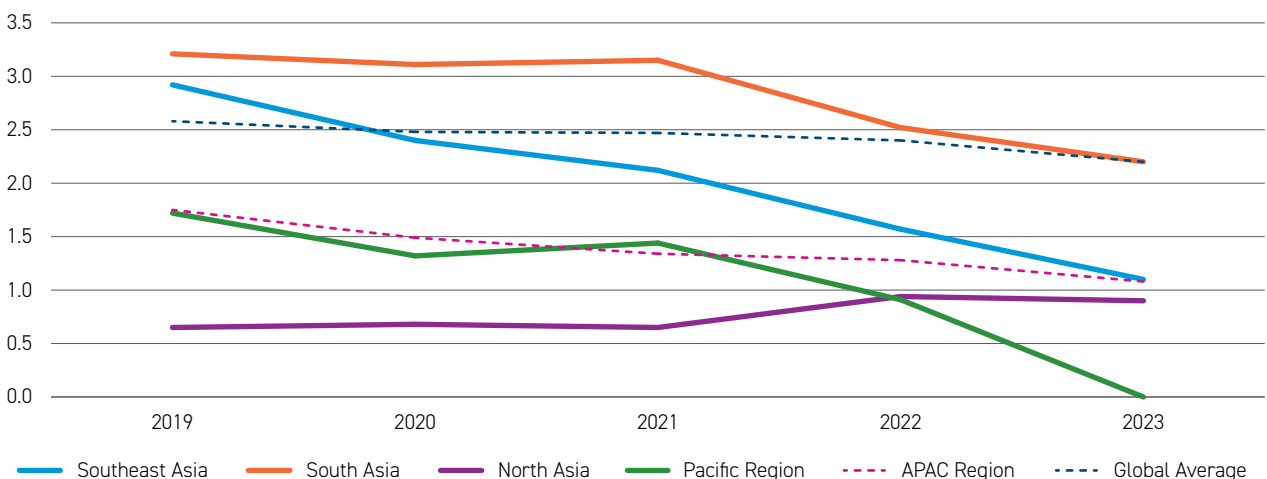


Chart 6.4.3 provides an illustration of the fatal accident rates within APAC by sub-region. In 2023, the sub-regional fatal accident rate for South Asia and North Asia decreased year-on-year from 0.69 to 0.63 per million departures and from 0.69 and 0.19 to 0 per million departures respectively, whereas Southeast Asia and the Pacific was at 0. South Asia's fatal accident rate was significantly higher than both the regional and global fatal accident rates.

As fatal accident rates can vary significantly from year to year, a longer-term trend may present a better understanding of the data. Chart 6.4.4 illustrates the five-year moving average of fatal accident rates by sub-region in APAC. The five-year trend for fatal accident rates remained stable in all sub-regions in 2023. South Asia region's five-year trend at 0.59 per million departures remained higher than global average at 0.14 per million departures.

Chart 6.4.3 ICAO iSTARS, SISG and OAG: APAC sub-regional fatal accident rate (2014–2023)

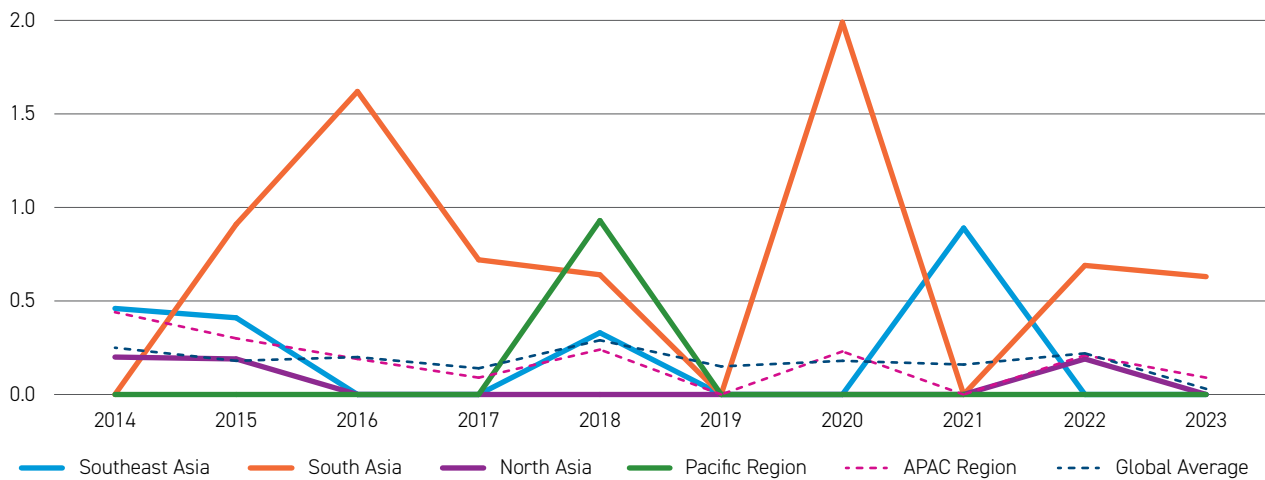


Chart 6.4.4 ICAO iSTARS, SISG and OAG: APAC sub-regional fatal accident rate 5 year moving average (2019–2023)

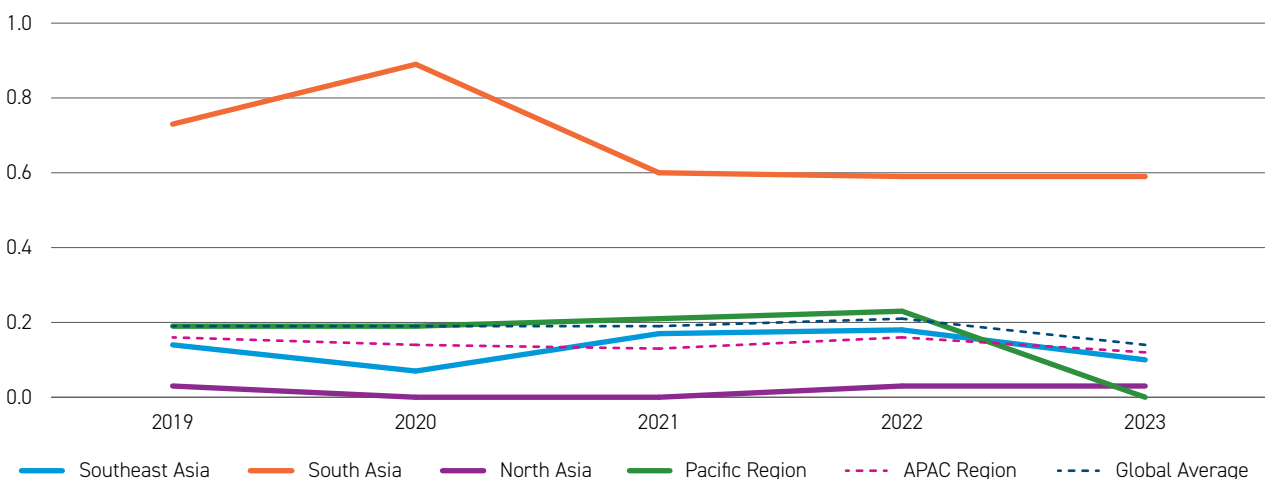


Chart 6.4.5 indicates the breakdown of the accident numbers by sub-regions. In 2023, the North Asia region recorded the highest number of accidents (5), followed by Southeast Asia region (2) and 1 accident each for the South Asia and Pacific regions. Over the ten-year period from 2014 to 2023, the Southeast Asia region had the highest number of accidents (48), followed by North Asia (42) and South Asia (34). The Pacific region has the lowest number of accidents at 11.

Chart 6.4.6 indicates the breakdown of the fatal accident numbers by sub-regions. In 2023, the South Asia region recorded 1 fatal accident. There were no fatal accidents in the other sub-regions. Over the ten-year period from 2014

to 2023, the South Asia region had the highest number of fatal accidents (9), followed by Southeast Asia (4) and North Asia (3). The Pacific region has the lowest number of accidents at 1.

Table 6.4.1 shows the breakdown of fatal accidents by high risk occurrence category by APAC sub-regions. Over the last five years, the South Asia region recorded the most Runway Safety fatal accidents (3). The Southeast Asia and South Asia region recorded one LOC-I fatal accident over the last five years. The Pacific region and North Asia region did not have any fatal accidents related to the high-risk occurrence categories over the last five years.

Chart 6.4.5 iSTARS, SISG and OAG: APAC sub-regions accident numbers (2014–2023)

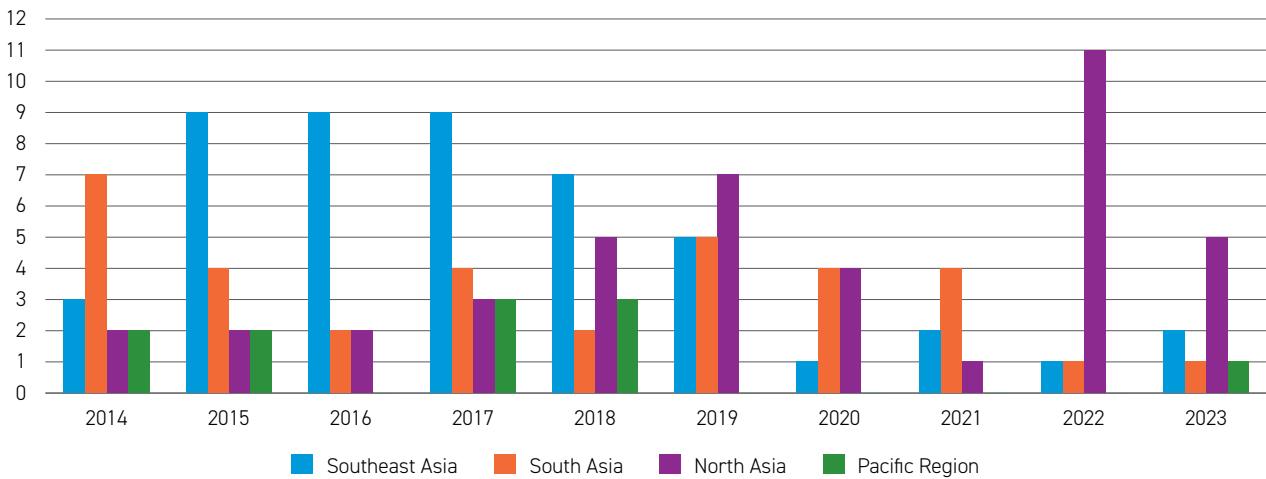


Chart 6.4.6 iSTARS, SISG and OAG: APAC sub-regions fatal accident numbers (2014–2023)

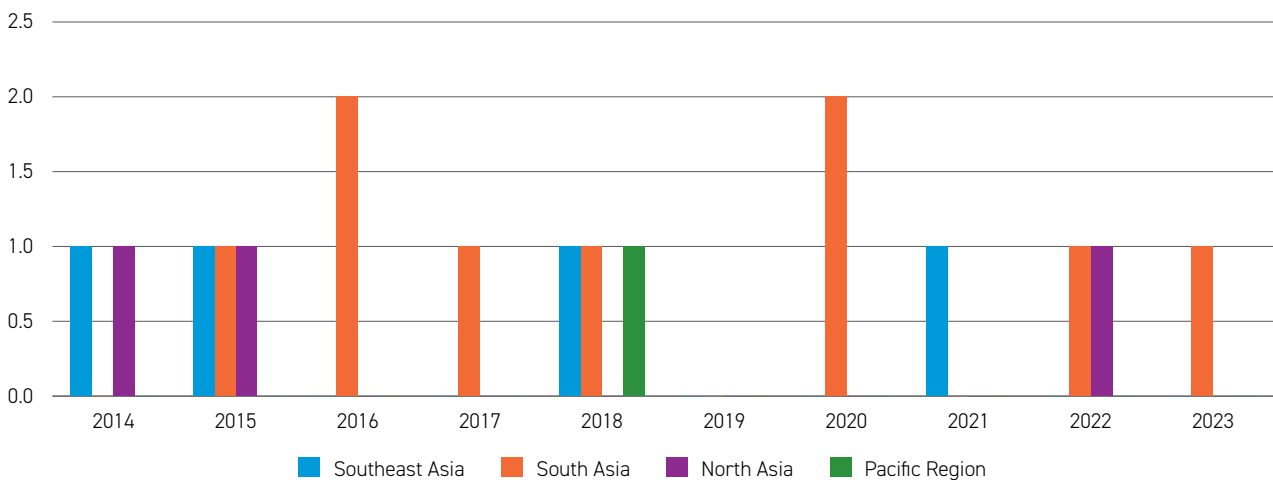


Table 6.4.1 iSTARS, SISG: APAC sub-regions top three fatal accident categories (2019–2023)

Year	SEA Region				SA Region				NA Region				Pacific Region			
	RS	LOC-I	CFIT	Total	RS	LOC-I	CFIT	Total	RS	LOC-I	CFIT	Total	RS	LOC-I	CFIT	Total
2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0
2021	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Total	0	1	0	1	3	1	0	4	0	0	0	0	0	0	0	0

Table 6.4.2 shows the breakdown of the top three accident categories by APAC sub-regions over the last five years.

For the SEA sub-region, the top accident category was Abnormal Runway Contact (ARC). The other accident categories (RE, LOC-I, SCF-NP, NAC and RAMP) each recorded one accident

For the SA sub-region, the top three accident categories were (i) ARC (ii) TURB and (iii) RE respectively.

For the NA sub-region, the top three accident categories were (i) TURB (ii) RE and (iii) CABIN and F-NI respectively

The Pacific region recorded a GCOL accident over the last five years.

Table 6.4.2 iSTARS, SISG: APAC sub-regions top three accident categories (2019–2023)

	SEA	SA	NA	PA
TURB	1	4	15	0
F-NI	0	0	2	0
RE	1	3	3	0
WSTR	0	0	0	0
OTH	0	0	3	0
USOS	0	0	0	0
LOC-I	1	1	0	0
CFIT	0	0	0	0
ADRM	0	0	0	0
ARC	5	5	1	0
RAMP	1	0	0	0
NAV	1	0	0	0
CTOL	0	0	0	0
GCOL	0	0	1	1
AMAN	0	1	1	0
CABIN	0	0	2	0
SCF-NP	1	0	0	1

07 Proactive Safety Information

Proactive safety information is gathered through analysis of existing or real-time situations, a primary function of the safety assurance team with its audits, evaluations, employee reporting, and associated analysis and assessment processes. These involve actively seeking hazards in the existing processes (ICAO Doc 9859).

This information can be obtained from a number of sources, but this report focuses on the ICAO universal safety oversight audit programme continuous monitoring approach (USOAP CMA).

7.1 ICAO Universal Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA)

USOAP audits focus on a State's capability to provide safety oversight by assessing whether it has effectively and consistently implemented the critical elements (CE) of a safety oversight system. It also determines the State's level of implementation of ICAO's safety-related standards and recommended practices (SARPs), associated

procedures and guidance material. Eight critical elements are evaluated:

1. Primary aviation legislation
2. Specific operating regulations
3. State civil aviation system and safety oversight functions
4. Technical personnel qualifications and training
5. Technical guidance, tools and the provision of safety-critical information
6. Licensing, certification, authorisation and approval obligations
7. Surveillance obligations
8. Resolution of safety concerns
9. The USOAP CMA programme was launched in January 2013. Comprehensive information relating to USOAP CMA is available on the USOAP CMA online framework at www.icao.int/usoap

The overall effective implementation (EI) for the RASG-APAC region in 2024 decreased to 61.77 per cent (as shown in Chart 7.1.1). The EI score has been relatively stable for the past few years and reasonably below the global level which was 68.1 per cent in 2024.

Chart 7.1.1 Overall effective implementation – RASG APAC compared with ICAO Member States (World)

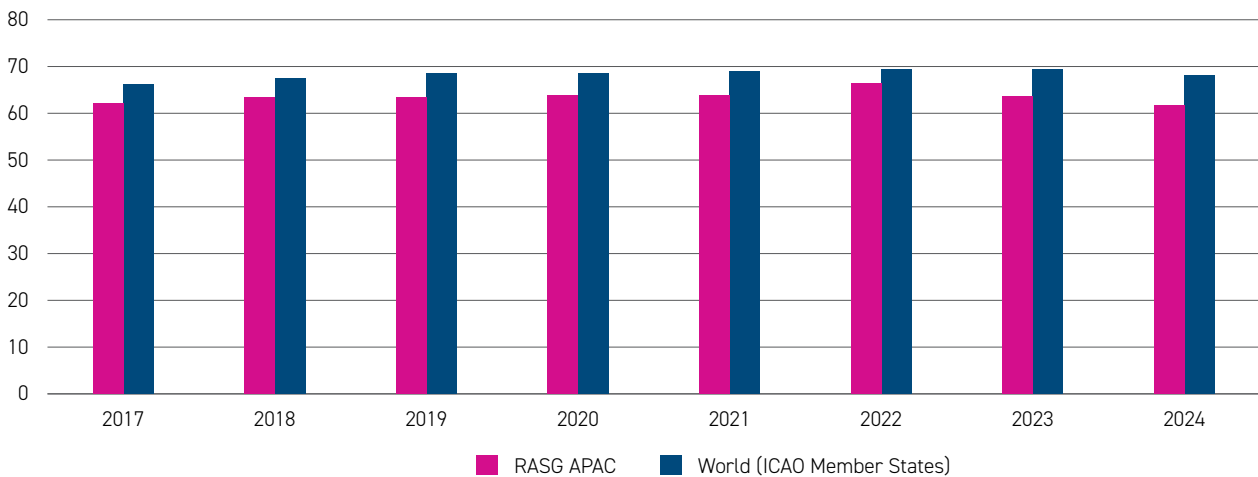
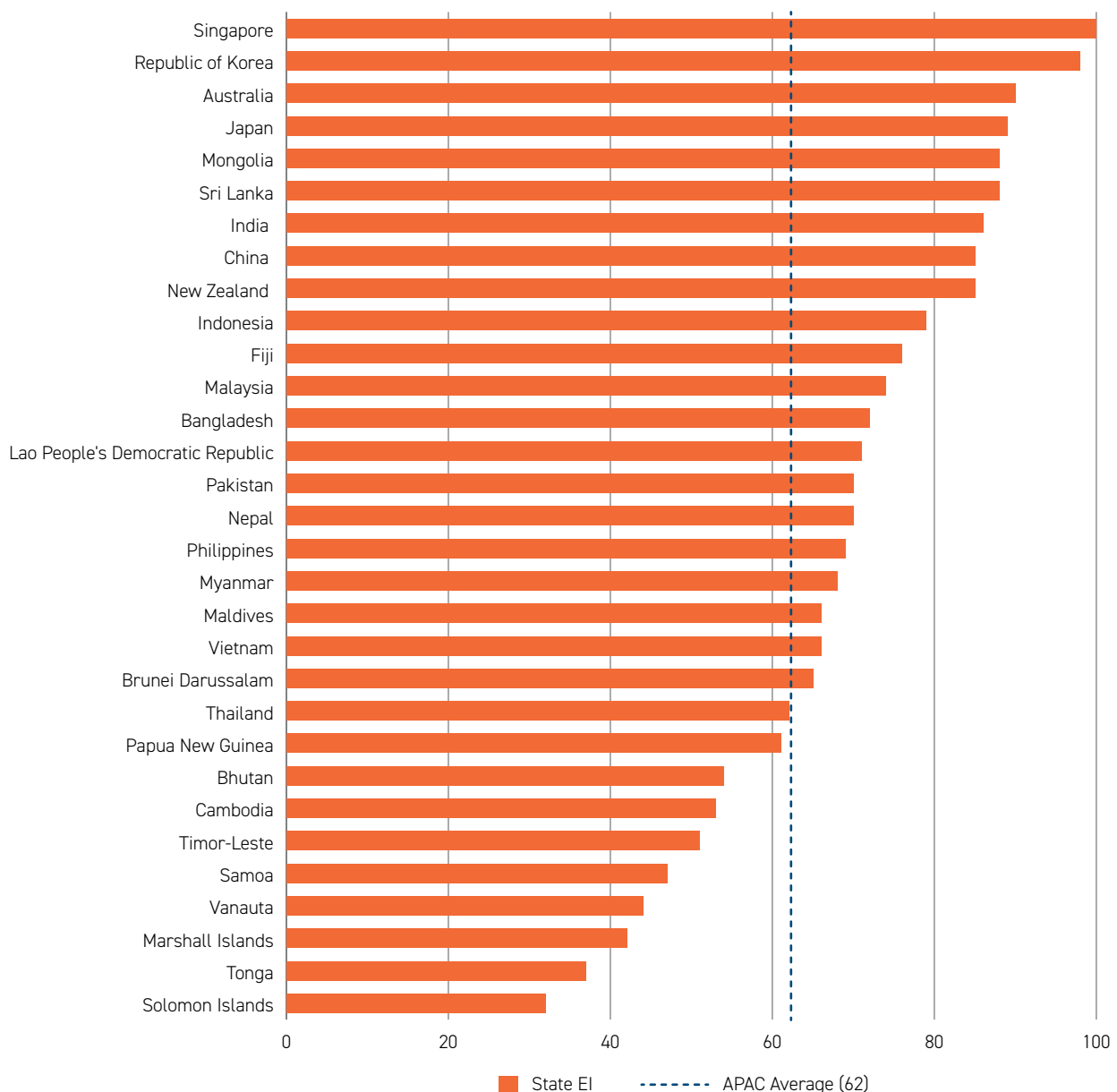


Chart 7.1.2 illustrates the overall EI by State. It should be noted that any changes or improvements to a States EI can only be reflected after one of the following is conducted:

- the EI score Comprehensive systems approach (CSA) audit
- ICAO coordinated validated mission
- Integrated validated mission
- Off-site monitoring activity
- Off-site Safety System Concern (SSC) protocol questions management activity

Chart 7.1.2 RASG APAC overall effective implementation for RASG APAC States*



* Note – Data was extracted from the iSTARS database on the 8th of August 2024.

The EI by critical elements (CE) in Chart 7.1.3, revealed that resolution of safety concerns (CE 8) had the lowest implementation score of 50.49 per cent for the RASG-APAC, followed by CE 4 (51.34 per cent) and CE 7 (55.41 per cent) respectively. In comparison to all ICAO member States, RASG-APAC had lower average scores for all CEs with Certification and Approval Obligations (CE6) being the closest in comparison.

The overall EI by area RASG-APAC States compared with all ICAO member States, indicates that RASG-APAC had a lower score for all areas compared with the world averages.



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Chart 7.1.3 Overall EI by critical element for RASG-APAC States

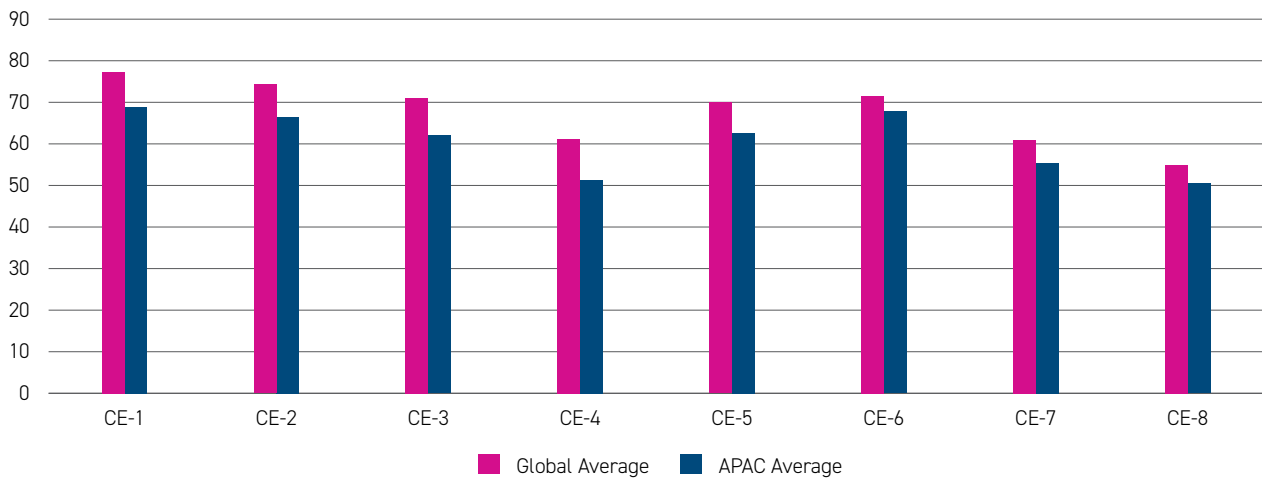
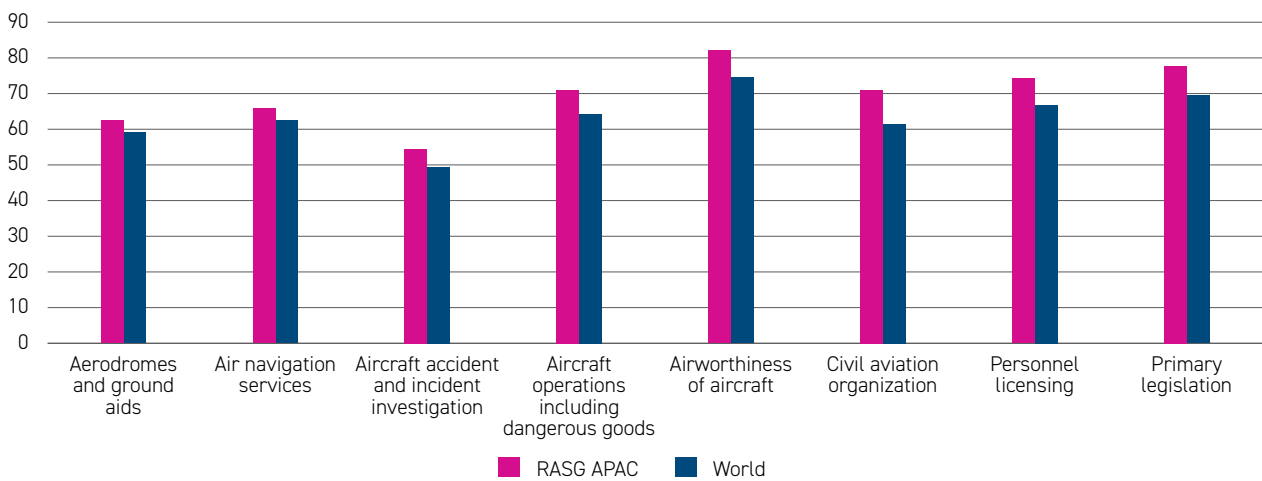


Chart 7.1.4 Overall EI by critical element RASG-APAC States compared to all ICAO member States



08 Conclusion

Reactive safety information

RASG-APAC accident rate has recorded a downtrend in 2023 in line with global trends. The RASG-APAC's accident rate has remained lower than the global accident rate over the past decade. Overall, the five-year moving average accident rate, globally and for RASG-APAC, has shown a consistent downward trend

The number of accidents attributable to States/ Administrations in the RASG-APAC region in 2023 dropped from 13 in 2022 to 9 in 2023. In terms of fatalities, there were 1 fatal accident in 2023, down from 2 in 2022. The fatal accident that occurred in APAC was attributed to loss of control in-flight. In 2023, turbulence and System Component Failure Non-Powerplant each accounted for 2 accidents, followed by one accident each for ground collision, LOC-I and Abnormal Runway Contact with one accident each. From 2019 to 2023, the three most common accident categories over the past five years were: (i) Turbulence (ii) Abnormal Runway Contact (ARC) and (iii) Runway Excursion. The region needs to focus to address loss of control in-flight given its fatality risk as well as to look into reducing accidents relating to the top common accident categories.

Proactive safety information

The effective implementation (EI) score for the RASG-APAC region decreased in 2023 (61.77%) as compared to 2022 (63.62%). The EI for the RASG-APAC region was lower than the global average by Critical Element (CE). Of these, *technical personnel qualifications and training (CE4)* and *Resolution of safety concerns (CE-8)* were lowest at 51.34 and 50.49 per cent respectively. Both of these critical elements also contain scores among the lowest across the global averages, suggesting that there appears to be a consistent issue across the world.



09

List of acronyms

ACAS	Airborne collision avoidance systems	EDTO	Extended Diversion Time Operations (replaces ETOPS)
ADRM	Aerodrome	EUR	Europe (ICAO and IATA Region)
AFI	Africa (IATA Region)	EVAC	Evacuation
AIS	Aeronautical information service	FDA	Flight data analysis
AMAN	Abrupt manoeuvre	FLP	Flight planning (IATA)
ANSP	Air navigation service provider	F-NI	Fire/smoke (none- impact)
AOC	Air operator certificate	FMS	Flight management system
APAC	Asia Pacific	FOQA	Flight operations quality assurance
APR	Approach	F-POST	Fire/smoke (post-impact)
ARC	Abnormal runway contact	FUEL	Fuel related
ASIA PAC	Asia/Pacific (ICAO Region)	GASP	ICAO global aviation safety plan
ASPAC	Asia/Pacific (IATA Region)	GCOL	Ground collision
ATC	Air traffic control	GNSS	Global navigation satellite system
ATM	Air traffic management	GOA	Go-around
BIRD	Birdstrike	GPWS	Ground proximity warning system
CABIN	Cabin safety events	GSI	Global safety initiative
CAST	Commercial aviation safety team	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	LALT	Low altitude operations
DGCA	Directors General of Civil Aviation Conference	LATAM	Latin America and the Caribbean (IATA Region)
DH	Decision height	LEI	Lack of effective implementation
E-GPWS	Enhanced ground proximity warning system	LND	Landing
ETOPS	Extended range operations by turbine-engine aeroplanes	LOC-G	Loss of control-ground

LOC-I	Loss of control-inflight	SAM	South America (ICAO Region)
LOSA	Line operations safety audit	SARPS	Standards and recommended practices (ICAO)
MAC	AIRPROX/TCAS alert/loss of separation/ near miss collisions/mid-air collisions	SCF-NP	System/component failure or malfunction – Non-powerplant
MDA	Minimum descent altitude	SCF-PP	System/component failure or malfunction – Powerplant
MED	Medical	SD	Substantial damage
MEL	Minimum equipment list	SEC	Security-related
MENA	Middle East and North Africa (IATA REGION)	SISG	Safety Indicator Study Group (ICAO)
NAM	North America (ICAO and IATA Region)	SMS	Safety management system
NASIA	North Asia (IATA Region)	SOP	Standard operating procedure
NAVAIDS	Navigational aids	SRVSOP	Regional safety oversight system
NOTAM	Notice to airman	SSP	State safety programme
OAG	Official Aviation Guide	TAWS	Terrain awareness warning system
OTH	Other	TCAS	Traffic collision and avoidance system
RA	Resolution advisory	TCAS RA	Traffic collision and avoidance system – Resolution advisory
RAMP	Ground handling operations	TEM	Threat and error management
RE	Runway excursion (departure or landing)	TOF	Take-off
RE-Landing	Runway excursion – Landing	TURB	Turbulence encounter
Re-Take-off	Runway excursion – Take-off	TXI	Taxi
RI	Runway incursion	UAS	Undesirable aircraft state
RI-A	Runway incursion – animal	UNK	Unknown or undetermined
RI-VAP	Runway incursion – vehicle, aircraft or person	USOAP	Universal safety oversight audit programme
RS	Runway safety	USOS	Undershoot/overshoot
RTO	Rejected Take-off		

