ICAO

SAFETY

Safety Report

2015 Edition

A Coordinated, Risk-based Approach to Improving Global Aviation Safety

The air transport industry plays a major role in world economic activity. One of the key elements to maintaining the vitality of civil aviation is to ensure safe, secure, efficient and environmentally sustainable operations at the global, regional and national levels.

A specialized agency of the United Nations, the International Civil Aviation Organization (ICAO) was created in 1944 to promote the safe and orderly development of international civil aviation throughout the world.

ICAO sets the Standards and Recommended Practices (SARPs) necessary for aviation safety, security, efficiency and environmental protection on a global basis. ICAO serves as the primary forum for co-operation in all fields of civil aviation among its 191 Member States.

Improving the safety of the global air transport system is ICAO's guiding and most fundamental Strategic Objective. The Organization works constantly to address and enhance global aviation safety through the following coordinated activities:

- **Policy and Standardization** initiatives.
- **Monitoring** of key safety trends and indicators.
- Safety **Analysis**.
- Implementing programmes to address safety issues.

In every case, these activities are augmented by ICAO's detailed appraisal of global and regional aviation safety metrics on the basis of established risk management principles — a core component of contemporary State Safety Programmes (SSP) and Safety Management Systems (SMS). Applying these principles in the field of aviation safety requires ICAO to pursue a strategy comprised of proactive and reactive safety analysis and risk management processes.

"In all of its coordinated safety activities, ICAO strives to achieve a balance between assessed risk and the requirements of practical, achievable and effective risk mitigation strategies."

This report provides updates on safety indicators including accidents occurring in 2014 and related risk factors, taking as a benchmark the analysis in previous reports.

Note:

The United Nations' definitions of regions are used in the report and are listed in Appendix 2. This document focuses primarily on scheduled commercial flights. The scheduled commercial flights data was based on the Official Airline Guide (OAG) combined with internal ICAO preliminary estimates.

Contents

Executive Summary

Scheduled commercial international and domestic operations accounted for approximately 3.2 billion passengers in 2014, up approximately 5% from 2013. Total scheduled passenger traffic included approximately 33 million sectors flown.

The year-over-year accident statistics indicate an increase in the overall number of accidents as well as the accident rate. Compared to 2013, the number of accidents (as defined in ICAO Annex 13 involving aircraft with a maximum certificated take-off weight of over 5 700 kg and reviewed by the ICAO Safety Indicators Study Group) increased by 9% in 2014 to 98. In addition, the global accident rate involving scheduled commercial operations increased by 7%, from 2.8 accidents per million departures in 2013 to 3.0 accidents per million departures in 2014.
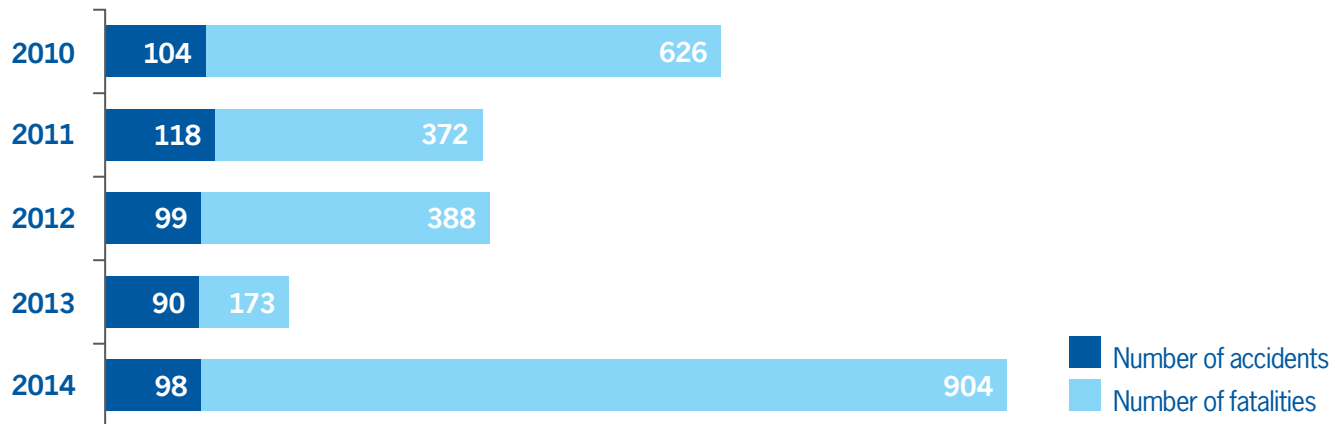
The 904 fatalities in 2014 represent the highest number of fatalities in commercial scheduled air transport in the last five years. This is due in large part to the tragic accidents involving Malaysia Airlines Flight MH 370 and Malaysia Airlines Flight MH 17. However, the number of fatal accidents decreased in 2014 to just 7, the lowest in recent history.

The aviation community remains focused on achieving the highest level of cooperation among the various stakeholders. To keep pace with expansion and progress sector-wide, ICAO continues to promote the implementation and development of new safety initiatives. The second High-level Safety Conference held in February 2015 was also instrumental in discussing and setting the agenda for safety matters in the upcoming years in many areas such as aircraft tracking, conflict zones and safety information sharing.

ICAO is committed to improving aviation safety and enabling seamless co-operation and communication between stakeholders. ICAO continues to collaborate with established regional organizations, such as Regional Aviation Safety Groups (RASGs) and Regional Safety Oversight Organizations (RSOOs), and to promote the training and support necessary to address emerging safety issues.

Accident Records: 2010–2014 Scheduled Commercial Flights

Year	Number of accidents	Number of fatalities
2010	104	626
2011	118	372
2012	99	388
2013	90	173
2014	98	904

The Bottom Line

The small growth in traffic experienced in 2014, when combined with the increase in the number of accidents resulted in an accident rate of 3.0 accidents per million departures — a 7% increase compared to the previous year, which is still one of the lowest rates on record. The RASG-PA region did not have any fatal accidents in 2014 and the RASG-AFI and RASG-EUR regions each experienced a single fatal accident in 2014.

ICAO is working in partnership with the international aviation community to achieve future safety improvements, with an emphasis to improve safety performance in those regions experiencing significantly higher accident rates or having specific safety challenges. This report provides a summary of key indicators with reference to the 2010–2014 benchmark period.

Safety Oversight

USOAP Status

Each ICAO Member State should establish and implement an effective safety oversight system that reflects the shared responsibility of States and the broader aviation community, to address all areas of aviation activities. The Universal Safety Oversight Audit Programme (USOAP) measures the effective implementation of protocols that cover the entire spectrum of a State's civil aviation oversight activities.

To standardize the conduct of audits conducted under USOAP, ICAO has established protocol questions that are based on the Chicago Convention, SARPs established in the safety-related Annexes to the Convention, as well as

associated ICAO guidance material including, but not limited to, the ICAO Safety Oversight Manual (Doc 9734 — *The Establishment and Management of a State's Safety Oversight System)* and the *Safety Management Manual* (Doc 9859 Safety Management Manual, 3rd ed).

Each audit protocol is a comprehensive checklist covering all areas of a State's safety oversight system subject to the USOAP audit process. Using the audit protocol as a guideline, ICAO is then able to determine a State's capability for safety oversight.

Global Audit Results

Average Effective Implementation in % of Safety Oversight Systems by Area

Area	%
Aerodromes	58
Air Navigation Services	57
Accident Investigation	55
Airworthiness	74
Operations	67
Licensing	72
Organization	65
Legislation	67

USOAP State Performance

States, listed in alphabetical order, having Effective Implementation **above** the global average of 62%.

■ States having Effective Implementation **above** the global average

|					
Argentina	**Costa Rica**	**Greece**	**Republic**	**Peru**	**Switzerland**
Armenia	**Croatia**	**Guatemala**	**Latvia**	**Poland**	**Thailand**
Australia	**Cuba**	**Honduras**	**Lithuania**	**Portugal**	**Togo**
Austria	**Cyprus**	**Hungary**	**Luxembourg**	**Qatar**	**Trinidad and Tobago**
Bahrain	**Czech Republic**	**Iceland**	**Malaysia**	**Republic of Korea**	**Tunisia**
Belgium	**Democratic People's Republic of Korea**	**India**	**Malta**	**Republic of Moldova**	**Turkey**
Belize		**Iran (Islamic Republic of)**	**Mauritania**	**Romania**	**Turkmenistan**
Bolivia (Plurinational State of)	**Denmark**	**Ireland**	**Mexico**	**Russian Federation**	**Ukraine**
Bosnia and Herzegovina	**Dominican Republic**	**Israel**	**Mongolia**	**Saudi Arabia**	**United Arab Emirates**
Brazil	**Ecuador**	**Italy**	**Montenegro**	**Serbia**	**United Kingdom of Great Britain and Northern Ireland**
Brunei Darussalam	**Egypt**	**Jamaica**	**Morocco**	**Singapore**	
Bulgaria	**El Salvador**	**Japan**	**Netherlands**	**Slovakia**	**United States of America**
Canada	**Estonia**	**Kazakhstan**	**New Zealand**	**Slovenia**	
Cape Verde	**Ethiopia**	**Kenya**	**Nicaragua**	**South Africa**	**Uzbekistan**
Chile	**Finland**	**Kuwait**	**Nigeria**	**Spain**	**Venezuela (Bolivarian Republic of)**
China	**France**	**Kyrgyzstan**	**Norway**	**Sri Lanka**	
Colombia	**Gambia**	**Lao People's Democratic**	**Oman**	**Sudan**	
	Germany		**Pakistan**	**Sweden**	
	Ghana		**Panama**		

Accident Statistics

ICAO's primary indicator of safety in the global air transport sector is the accident rate based on scheduled commercial operations involving aircraft having a maximum take-off weight (MTOW) above 5 700 kg. Aircraft accidents are reviewed by the ICAO Safety Indicators Study Group and categorized using the definition provided in Annex 13 to the Chicago Convention — Aircraft Accident and Incident Investigation.

Exposure data is comprised of scheduled commercial operations that involve the transportation of passengers, cargo and mail for remuneration or hire, and is a preliminary estimate solely for the calculation of the accident rates. Figures by ICAO statistical region of airline registration are published in the ICAO Annual Report of the Council.

The chart below shows the accident rate trend (per million departures) over the previous five years, with 2014 having an accident rate of 3.0 accidents per million departures, the second-lowest recorded since ICAO began tracking the global accident rate.

Global Accident Rate (accidents per million departures)

Year	Rate
2010	4.2
2011	4.2
2012	3.2
2013	2.8
2014	3.0
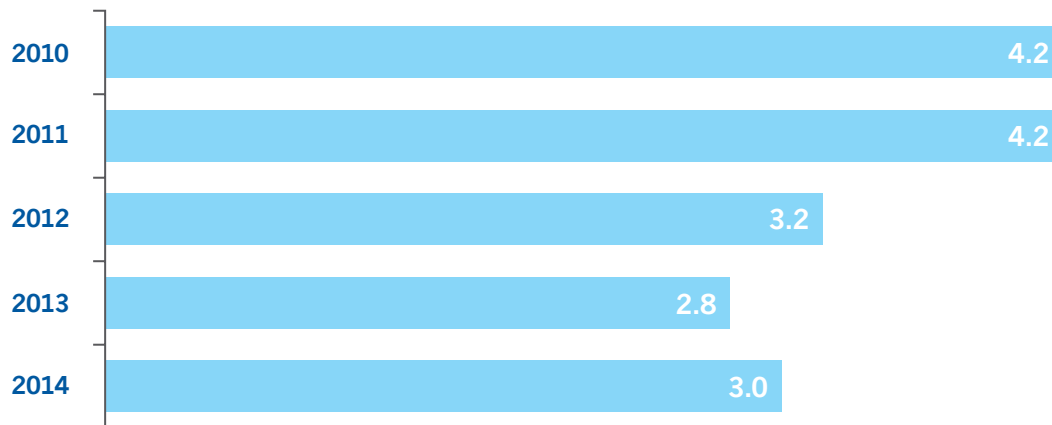
Regional Accident Statistics

To further analyze the state of aviation safety, the accident data for scheduled commercial air transport is categorized according to Regional Aviation Safety Group regions. The table below provides insight into the state of aviation safety in different RASGs in the context of global outcomes.

Please note that the RASG regions used in this report are indicated in Appendix 2.

RASG	Estimated Departures (in millions)	Number of accidents	Accident rate (per million departures)	Fatal accidents	Fatalities
AFI	0.7	6	8.6	1	118
APAC	10.2	18	1.8	3	449
EUR	8.9	26	2.9	1	298
MID	3.0	7	2.3	2	39
PA	9.9	41	4.1	0	0
WORLD	**33**	**98**	**3.0**	**7**	**904**

RASG	Share of Traffic	Share of Accidents
AFI	2%	6%
APAC	31%	18%
EUR	27%	27%
MID	9%	7%
PA	30%	42%

ICAO is also committed to working with its partners through the Global Safety Information Exchange (GSIE) to publish a harmonized accident analysis, based on common criteria. Details on the GSIE harmonized accident rate can be found later in this report. This rate is calculated using harmonized exposure data and accident criteria, and will therefore vary from the traditional ICAO accident rate.

GSIE Harmonized Accident Rate

In the spirit of promoting aviation safety, the Department of Transportation of the United States, the Commission of the European Union, the International Air Transport Association (IATA) and ICAO signed a Memorandum of Understanding (MoU) on a Global Safety Information Exchange (GSIE) on 28 September 2010 during the 37th Session of the ICAO Assembly. The objective of the GSIE is to identify information that can be exchanged between the parties to enhance risk reduction activities in the area of aviation safety.
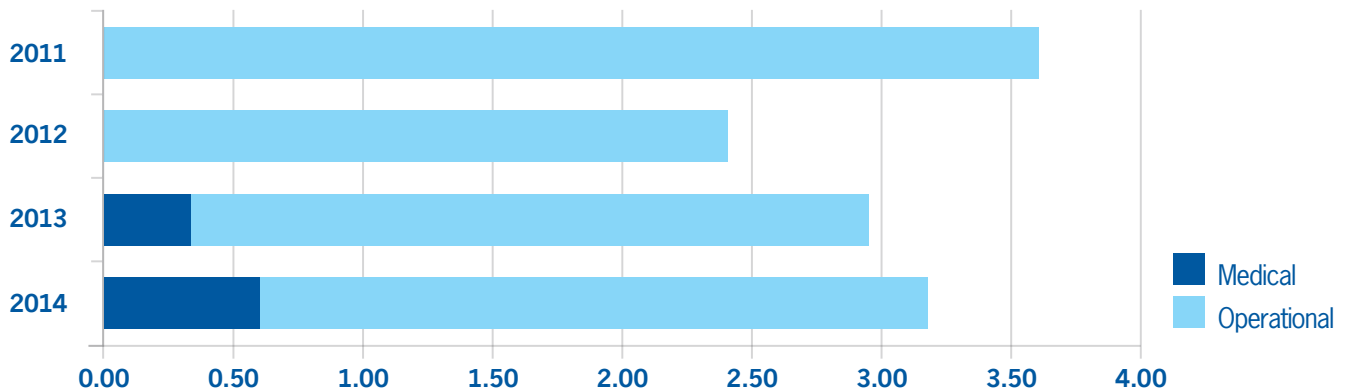
The GSIE developed a harmonized accident rate beginning in 2011. This was accomplished through close co-operation between ICAO and IATA to align accident definitions, criteria and analysis methods used to calculate the harmonized rate, which is considered a key safety indicator for commercial aviation operations worldwide. The joint analysis includes accidents meeting the ICAO Annex 13 criteria for all typical commercial airline operations for scheduled and non-scheduled flights.

Starting in 2013, ICAO and IATA have increasingly harmonized the accident analysis process and have developed a common list of accident categories to facilitate the sharing and integration of safety data between the two organizations.

Analysis of Harmonized Accidents

A total of 122 accidents were considered as part of the harmonized accident criteria. These include scheduled and non-scheduled commercial operations, including ferry flights, for aircraft with a maximum certificated take-off weight above 5 700 kg. The GSIE harmonized accident rate for the period from 2011 (the first year the rate was calculated) to 2014 is shown below. Also presented, as of 2013, is a breakdown of the rate in terms of the operational safety component, covering accidents involving damage to aircraft and the medical/injury component pertaining to accidents with serious or fatal injuries to persons but little or no damage to the aircraft itself.

GSIE Harmonized Accident Rate

Definitions and Methods

In order to build upon the harmonized accident rate presented in the last two safety reports, ICAO and IATA worked closely to develop a common taxonomy that would allow for a seamless integration of accident data between the two organizations. A detailed explanation of the harmonized accident categories and how they relate to the Commercial Aviation Safety Team/ICAO Common Taxonomy Team (CICTT) occurrence categories can be found in Appendix 3.

A common list was developed by ICAO and IATA using the CICTT Phases of Flight.

Harmonized Accident Categories

The fundamental differences in the approaches of the ICAO (CICTT Occurrence Categories) and IATA (Flight-crew centric Threat and Error Management Model) classification systems required the harmonization of accident criteria being used. The breakdown of accidents by harmonized category can be seen in the figure below.

Accidents by Category
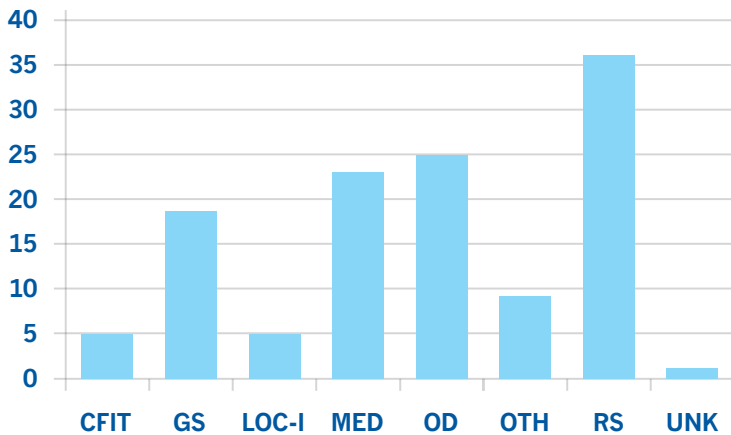
Accident Categories

Controlled Flight into Terrain (CFIT)
Ground Safety (GS)
Loss of Control in-Flight (LOC-I)
Injuries to and/or Incapacitation of Persons (MED)
Operational Damage (OD)
Other (OTH)
Runway Safety (RS)
Unknown (UNK)
Full details of categories can be found in Appendix 3

Accidents by Region of Occurrence

A harmonized regional analysis is provided using the ICAO Regional Aviation Safety Group regions. The number of accidents and harmonized accident rate by region are shown in the figure below:

Number of Accidents
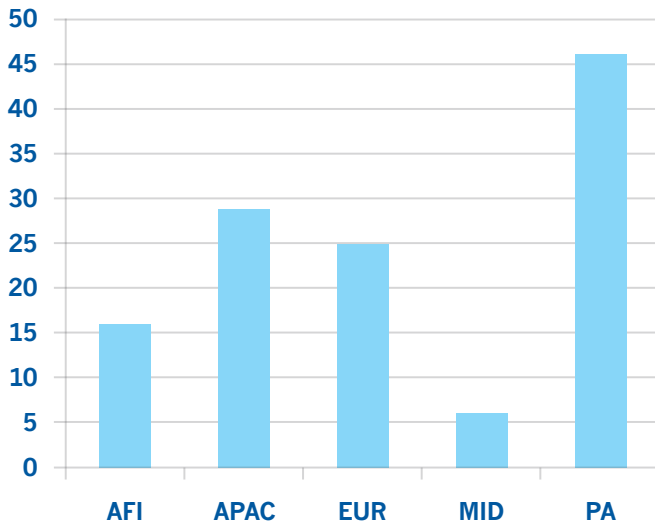
Accident Rate
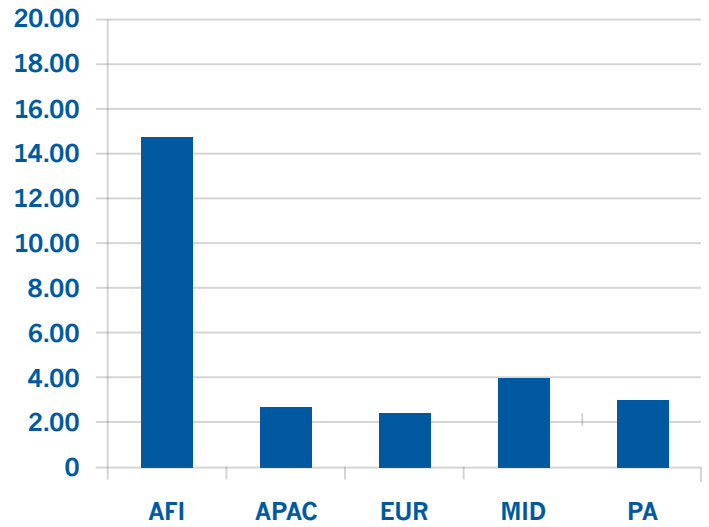
Future Development

Both ICAO and IATA continue to work closely together and, through their respective expert groups, provide greater alignment in their analysis methods and metrics for the future. This ongoing work will be shared with GSIE participants, States, international organizations and safety stakeholders in the interest of promoting common, harmonized safety reporting at the global level.

Success Stories

Assistance Success Stories

ICAO is committed to render assistance and advice to ICAO Member States in carrying out their safety oversight responsibilities. The Organization plays a pivotal role in coordinating and building agreements with aviation safety partners that support ICAO's Member States to build their capacity in regulating and overseeing civil aviation activities.

RASG-APAC

Following the lead of an ICAO initiative, the Regional Aviation Safety Group Asia and Pacific Regions (RASG-APAC) was established in November 2011. 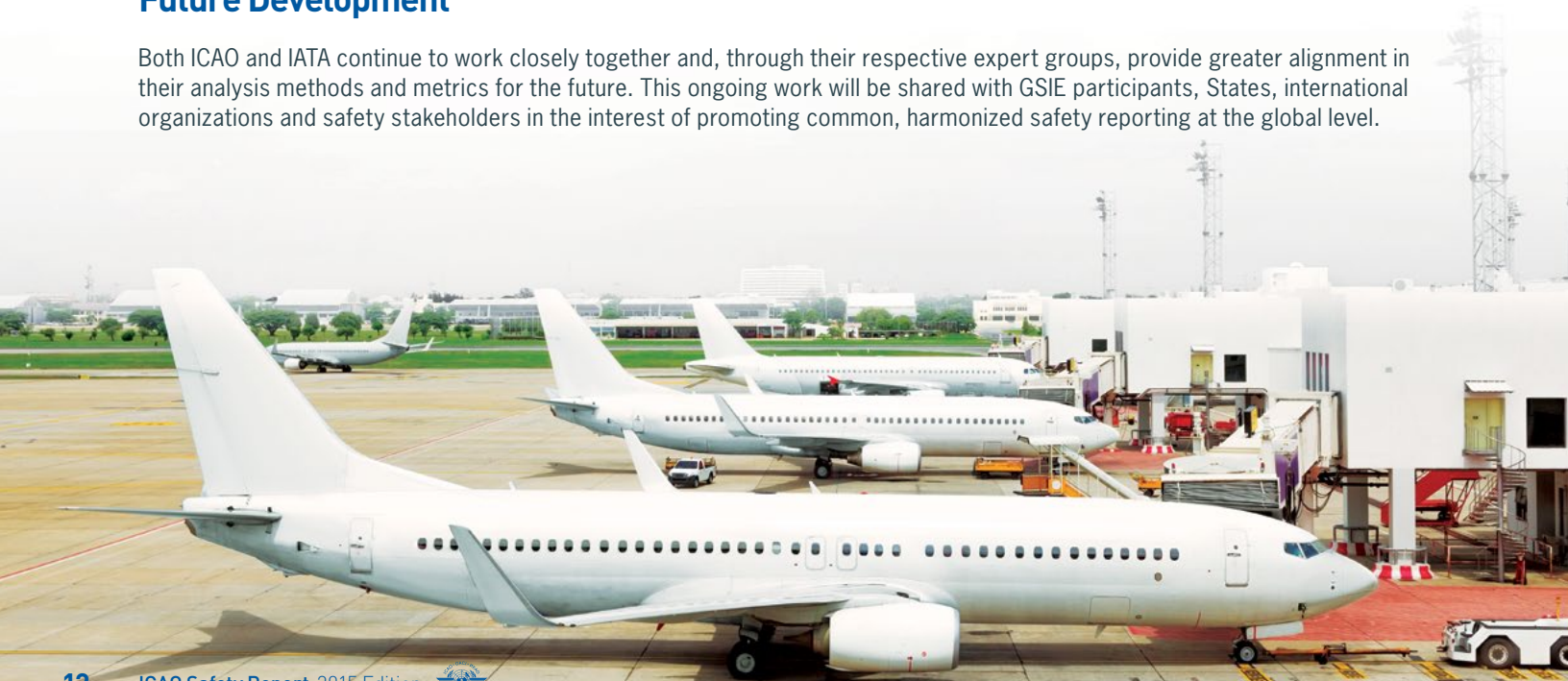This group, comprising industry and States, works together in a collaborative manner with the primary objective of improving aviation safety in the Asia/Pacific Region. RASG-APAC adopts a data-driven approach in developing its annual and standing work programmes which enables the RASG-APAC to utilize its limited resources for critical areas. By engaging this data-driven approach, the RASG-APAC has identified three primary areas: runway excursions, controlled flight into terrain (CFIT) and loss of control in-flight as the primary factors that contribute to fatal accidents in the region. RASG-APAC, through its subsidiary body, the Asia Pacific Regional Aviation Safety Team (APRAST), a working arm of RASG-APAC, has developed and circulated many safety enhancement initiatives to reduce these primary factors contributing to fatal accidents in the region. In addition to these initiatives, RASG-APAC, through its subsidiary body, the Asia Pacific Safety Reporting Programme Group (AP SRP) has published the Asia Pacific Region's first and second Aviation Safety Reports for 2012 and 2013, respectively. These reports have contributed immensely to identifying areas requiring attention in order to reduce accidents and incidents in the APAC Region. Furthermore, after analysing ICAO's "Universal Safety Oversight Audit Programme" data for the APAC Region, RASG-APAC concluded that most States in the APAC Region were lagging behind in the effective implementation of ICAO Annex 13 — *Aircraft Accident and Incident Investigation* requirements and established the APRAST Accident Investigation Group (APRAST-AIG), a group tasked to determine unique issues that may warrant locally developed policies and procedures to effectively capture information for study and the development of recommendations. The focus and priority for the APRAST-AIG will be to introduce, support and develop actions that have the potential to effectively and economically reduce the regional aviation accident risk. In addition to these tasks, the APRAST-AIG has been instrumental in developing many other initiatives aimed at enhancing APAC States' level of implementation in Annex 13 requirements.

State-to-State Assistance

The cooperative spirit of ICAO's Member States has been consistently demonstrated through financial and technical assistance projects that have succeeded in raising the level of aviation safety. The following represent a cross-section of some of the State-to-State assistance success stories that have resulted in positive aviation safety outcomes.

Canada

Canada believes that supporting regional initiatives is an ideal method of building capacity and extending the outreach of its assistance resources. Through the ICAO Technical Cooperation Bureau, Canada participates in the ICAO Co-operative Development of Operation Safety and Continuing Airworthiness Programmes (COSCAP) as a financial and in-kind contributor, with its latest efforts focused on North Asia (NA). Since 2005, Transport Canada Civil Aviation (TCCA) has contributed more than 1 million USD to this programme. As an in-kind contributor, TCCA employees have been working in cooperation with the COSCAPs, including Chief Technical Advisors collaborating with COSCAP-NA and the COSCAP in South East Asia (SEA). Canada has also provided training in different regions, including regular training by a dangerous goods specialist. Canada subject matter experts are assigned to various locations as opportunities arise. The Dangerous Goods Specialist delivered initial/recurrent inspector training in the areas of dangerous goods safety oversight, transport of radioactive materials, and transport of infectious substances in Bangkok, Thailand and Beijing, China. Foreign civil aviation authorities also meet with TCCA to share information on a variety of aviation safety topics.

United States

During 2014, the U.S. Trade and Development Agency (USTDA) supported a range of activities through its bilateral agreements with China, India and Brazil to promote technical cooperation with the United States in the aviation sector.

These activities advanced airport expansion, airspace management and aviation safety throughout all three markets. For example, USTDA launched the tenth phase of the U.S.-China Aviation Cooperation Program (ACP), which continues to support modern aviation systems and improved safety throughout the country. The ACP has been credited with supporting the growth of China's aviation infrastructure and improved safety and security measures. Additionally, USTDA assisted India's Directorate General of Civil Aviation in addressing critical aviation safety regulatory framework and oversight requirements by funding technical assistance activities. The Agency also hosted four U.S.-Brazil Aviation Partnership workshops throughout 2014 focused on airport security and air traffic flow management, among other topics.

Beyond these bilateral agreements, USTDA advanced the goals of its U.S.-South Africa Aviation Training Programme. The Agency hosted three activities designed to support the growth of safe and reliable aviation services in South Africa. Finally, previous technical assistance provided by USTDA assisted Azerbaijan in obtaining a Category 1 aviation safety rating from the Federal Aviation Administration in 2014.

European Commission

The European Union (EU) conducts an active policy in the area of technical assistance in the area of aviation safety in support of non-EU countries and funds a number of aviation safety projects in addition to those funded individually by the EU Member States. These projects aim at improving the level of safety worldwide through partner States and regional safety oversight organizations (RSOOs). The European Commission has decided to implement safety technical assistance through the European Aviation Safety Agency (EASA) given the privileged position of the Agency in terms of expertise and coordination with international partners and organizations.

The Instrument for Pre-accession Assistance (IPA-III) project in South Eastern Europe supports the development of a framework for aviation safety in the region in line with the EU civil aviation system.

The Transport Corridor Europe-Caucasus-Asia (TRACECA-III) project focuses on capacity-building of civil aviation authorities both in line with ICAO and EU standards.

Twinning projects between EU and partner states are also implemented in Albania and Georgia.

The Euromed Aviation Safety Project promotes the harmonization of safety standards, rules and procedures between the EU and Mediterranean partner States. EASA implements specifically the MASC (Mediterranean Aviation Safety Cell) project with a number of Mediterranean partners to assist them in implementing the European standards faster.

Twinning projects between EU and partner States are also implemented in Algeria and Egypt.

The Improvement of Aviation Safety in Africa (SIASA) project supports sub-Saharan States in improving their implementation of ICAO safety standards through regulation development activities, training and workshop sessions. The programme also supports RSOOs in Africa.

The Improvement of Air Transport in Central Africa (ATA-AC) project supports Central African countries in the setup of a regional safety oversight organization, including the training of inspectors and an aerodrome rehabilitation study.

A specific project in Zambia supports compliance with international standards in aviation safety and the Improvement of Aviation Safety Oversight in Malawi (IASOM) supports the Malawi authorities in the enhancement of their regulatory oversight.

The Association of Southeast Asian Nations (ASEAN) Air Transport Integration Project (AATIP) supports the achievement of a safe and sustainable ASEAN single aviation market.

The South Asian Regional Initiative (SARI) and South East Asia Regional Initiative Forum (SEARIF) supports regulatory harmonization and common working procedures between states in these respective regions.

Initiatives such as the EASA International Cooperation Forum (ICF), Safety Oversight Facilitated Integration Application (SOFIA) and Safety List project also provide specific training, tools and technical assistance for ICAO partner States worldwide.

Investment Institutions

Investment institutions play an important role in raising global aviation safety levels, as evidenced by the following successes achieved through their support.

European Investment Bank

As the financing arm of the European Union (EU), the European Investment Bank (EIB) supports long-term investment projects, both inside and outside Europe, including airport development projects, air traffic management programmes, aviation research and development, and, in special circumstances, the acquisition of aircraft. The objectives of these projects are to increase service levels, improve compliance with aviation safety standards, enhance environmental performance and promote economic growth and development. As of 2012, the EIB is acting as the lead financier for the extension of the European Geostationary Overlay Service (EGNOS) coverage to *l'Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar* (ASECNA) area in Central and West Africa. In conjunction with the Saudi Fund for Development (SFD) and the Arab Bank for Economic Development in Africa (BADEA), the Bank is financing the rehabilitation of the runway at Roberts International Airport in Monrovia, Liberia. The EIB has also agreed to finance the upgrade of critical safety and air navigation equipment at the two main airports in Lilongwe and Blantyre in Malawi and is assessing the possibility of assisting with the refurbishment of aircraft pavements at Moshoeshoe International Airport in Lesotho. At the end of 2014, the EIB funded study entitled "Opening up Aviation Services in Africa" was completed and will be available shortly through the Infrastructure Consortium (ICA) for Africa website.

World Bank Group

The World Bank Group is an important source of financial and technical assistance to developing countries through low interest loans, grants and credits. In fiscal year 2014, the World Bank's Air Transport portfolio was around USD 1.44 billion. This included around 30 projects or project components through the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA), as well as the International Finance Corporation (IFC)'s portfolio of lending and investment advisories in the aviation sector.

Highlights in 2014 include strengthening of investments in the Pacific Islands through the approval of the Samoa Aviation Investment Project, the Pacific Aviation Safety Office Reform Project and additional financing for ongoing projects in Tuvalu and Kiribati.

Other major ongoing projects include the Cairo Airport Development Project, which is being funded through a USD 280 million IRBD loan and the Shangrao Sanquingshan Airport, which is being funded through a USD 50 million IBRD loan. The World Bank also continues to be actively engaged in Africa with ongoing commitments in Burkina Faso, the Democratic Republic of Congo, Kenya and Tanzania, amongst others.

Other Organizations

Additional stakeholders play a key role in enhancing aviation safety. Together they support the improvement of the global and regional air transport system.

African Civil Aviation Commission (AFCAC)

AFCAC, with support from the International Civil Aviation Organization (ICAO), launched the Africa-Indian Ocean (AFI) Cooperative Inspectorate Scheme (AFI-CIS). This project played a considerable role in assisting States in resolving identified Significant Safety Concerns (SSCs).

African States established the Human Resource Development Fund (HRDF) through AFCAC and the Declaration of Ministers responsible for civil aviation at the Third Session of the Conference of African Ministers of Transport (CAMT), which was held in Malabo, Equatorial Guinea from 7 to 11 April 2014.

The HRDF will provide a mechanism that will allow for the use of voluntary contributions from States and other donors for capacity building in civil aviation in African States. This fund will assist African States to better meet the human resource needs required for operational efficiency and continuous implementation of ICAO's Standards and Recommended Practices (SARPs), and other activities.

Analysis of the Universal Security Audit Programme (USAP) results highlighted the low Effective Implementation of the eight critical elements of aviation security system in Africa with figures for Africa being worse than the global average. The establishment of the AFI Security and Facilitation Initiative (AFI SECFAL), a regional approach anchored by ICAO, will focus on enhancing aviation security and air transport facilitation in Africa. The ICAO Council initiated a process to ensure the effective development and implementation of this programme.

Civil Aviation Safety and Security Oversight Agency (CASSOA)

The East African Community-Civil Aviation Safety and Security Oversight Agency (EAC CASSOA) has continued to strengthen its functions in coordinating technical issues, including assistance, support and guidance to the East African States (Burundi, Kenya, Rwanda, Uganda and Tanzania) as an RSOO. Among other achievements so far, CASSOA has guided the EAC region to a regime of harmonized civil aviation regulations and guidance material in aspects of flight safety, aerodromes, air navigation services, aviation security and aircraft incident and accident investigation. The EAC region has also realized the roll-out of the EAC aviation examination system to which is anchored a common licensing system and the Regional Centre for Aviation Medicine. The Safety Oversight Facilitated Integration Application (SOFIA) system, a tool for data management, planning, monitoring and reporting for personal licensing, inspections and aircraft inspection, has been installed and updated in all EAC partner States in partnership with EASA. The technical personnel sharing scheme, whose purpose is the increase of the cost effective utilization of scarce resources, is maturing with tangible results. Increased training support of inspectors has been obtained from EASA, ICAO, FAA and other aviation partners such as AviAssist.

European Civil Aviation Conference (ECAC)

ECAC continued its role in bridging the 28 Member States for which the European Aviation Safety Agency (EASA) has primary responsibility on safety, with the 16 non-EU Member States. In particular, three projects have been put in place: a) the extension of the UE occurrence reporting system to non-EU Member States; b) the identification of safety needs of non-EU Member States; and c) the promotion of SAR cross-border cooperation via the preparation of a SAR MoU template and a data base of existing ECAC-wide SAR cooperation arrangements.

Additionally, ECAC continued to support the sharing of experience of accident investigation experts of ECAC Member States via the Expert Group on Accident and Incident Investigations (ACC), which is ACC Group open to many other ICAO Member States and to many international organizations. In 2014, the ACC group organized a workshop on "Investigations in extreme and challenging environments".

Pacific Aviation Safety and Security Office (PASO)

The Pacific Aviation Safety and Security Office (PASO), based in Port Vila, Vanuatu is the regional safety oversight organization (RSOO) providing a safety and security oversight forum and cooperative training center for thirteen (13) island nations in the South Pacific. These thirteen countries are banded together under a cooperative agreement called the Pacific Islands Civil Aviation Safety and Security Treaty (PICASST) which also establishes its governing Council and PASO's rules and procedures. The PASO Council is made up of representatives of all thirteen countries including the Cook Islands, Fiji, Kiribati, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. New Zealand and Australia are observer States on the Council. Also invited to participate in the biannual Council meetings are the Federal Aviation Administration (FAA), Association of South Pacific Airlines (ASPA), International Air Transport Association (IATA) and many other organizations. PASO has effectively steered the harmonization of all PASO member countries using the New Zealand Civil Aviation Regulations (NZ-CARs). It provides technical guidance on flight safety, airworthiness, aviation security, aerodromes and limited aircraft accident investigation services along with assistance on safety management systems. PASO's objective is to enhance aviation safety and security of regional air transport and aerodromes by establishing a regional core of highly motivated and qualified inspectors to be utilized by all PASO members. PASO seeks cost effective ways to meet international safety oversight obligations, providing on-site training of national inspectors, promoting harmonization of regulations and procedures, and coordinating technical assistance programmes among States. PASO, through its sharing of expertise among Pacific Island States, has improved economies of scale and has enabled aviation to thrive among Pacific Island States.

PASO, like other RSOOs, faces extreme financial challenges to sustain its operations. Despite this constraint, PASO has managed to strengthen its oversight ability by establishing agreements with several aviation safety partners such as the Memorandum of Cooperation between ICAO and PASO signed at the recent Asia-Pacific Director General's Conference in Hong Kong in November 2014. PASO also has signed several other agreements with the New Zealand Civil Aviation Authority (CAA), Civil Aviation Safety Authority (CASA) in Australia and it continues to pursue partnerships and synergies with many other organizations around the globe. With the collaboration of ICAO, IATA

and the New Zealand CAA, PASO has been able to resolve several potential Significant Safety Concerns (SSCs) and has helped Pacific Island States in resolving their safety oversight deficiencies while working with PI States to raise their Effective Implementation (EI) rates with ICAO. PASO is actively seeking to improve its safety and security profile in the region by including more ICAO Annexes in its oversight scope of work. The upcoming year will see a dramatic growth in PASO activities with expanded recruitment of experts, enhanced work plans for PI States and a concerted effort to build regional capacity through aviation training, On-the-Job Training (OJT) and enhancing closer collaboration among States and regional safety organizations in the future.

Technical Initiatives

Task Force on Resolution of Conflict Zones (TF RCZ)

In response to the downing of Malaysia Airlines Flight MH 17, ICAO formed a senior-level Task Force on Risks to Civil Aviation Arising from Conflict Zones (TF RCZ). The task force expeditiously developed a 12-item work programme, approved in principle by the ICAO Council, aimed at strengthening existing mechanisms to ensure the safety and security of aircraft operation near or over conflict zones. Three pilot projects were identified to address the most urgent elements of effectively disseminating information related to conflict zones and to support States and industry stakeholders in the conduct of their assessment of related risks.

The first pilot project was aimed at identifying how to most effectively use the existing Notice to Airmen (NOTAM) system to make available information related to civil aircraft operations over or near conflict zones. A second project collected and reviewed guidance on best practices for conducting risk assessments, and the third developed a proposal for regional and global information exchange mechanisms.

The TF-RCZ's final meeting in December 2014 concluded with a set of recommendations brought forward to the ICAO High-level Safety Conference in February 2015. The recommendations were based on the reports from the pilot projects and included the need to integrate the 12-item specialized work programme into the regular ICAO programme and to develop a centralized information sharing capability to disseminate available information to support comprehensive risk assessments for States and operators.

The High-level Safety Conference expressed overwhelming support for the development of a web-based information sharing platform and recommended that work start without delay. The web-based information sharing platform provides for a centralized and publicly available information repository of existing information published and directly provided to the system by the States through a secure interface. The type of information displayed on the website includes NOTAMs, Aeronautical Information Circulars (AIC); Aeronautical Information Publication Supplements (AIP) and operational briefing bulletins. This information exchange mechanism is scheduled to be operational in early 2015.

The Conference further discussed and recommended the review and update of existing information on best guidance for the development of risk assessment processes related to conflict zones.

Balancing the Use and Protection of Certain Accident and Incident Records

To safeguard accident investigation authorities' continued access to essential information during the course of accident and incident investigations, the international aviation community has raised the need to enhance the protection of records obtained during investigations. ICAO, supported by groups of experts, developed proposals aimed at enhancing this protective framework, which take into account the necessary interactions between aviation and judicial authorities. Proposed provisions are expected to come into force in 2016.

The second High-level Safety Conference held in February 2015 reaffirmed the need for meaningful and expeditious progress in ICAO's work to enhance the protection of accident and incident records. It called on States to undertake the necessary steps to efficiently implement the new and enhanced provisions, once adopted by the Council, for the enhancement of safety in aviation.

Flight Tracking

Following the disappearance of the Malaysia Airlines Flight MH 370, a special Multidisciplinary Meeting on Global Flight Tracking (MMGFT) was held at ICAO Headquarters from 12 to 13 May 2014 to make recommendations and propose

future actions by ICAO. The MMGTF concluded that global tracking of airline flights should be pursued as a matter of priority to provide early notice of, and response to, abnormal flight behaviour.

As a result of that meeting the Global Aeronautical Distress and Safety System (GADSS) concept of operations was developed. The GADSS presents a high-level system with a description of users and usages of flight tracking information during all phases of flight, both normal and abnormal flight conditions including timely and accurate positioning of an aircraft in distress. The document includes all identified phases of such a sequence including the detection of an abnormal situation, alert phase, distress phase and search and rescue activities. It also considers the responsibilities of different actors and vulnerabilities to single-point failures. The GADSS does not prescribe specific technical solutions for flight tracking but provides scenarios that can be used to verify whether a specific solution complies with the concept.

The MMGTF also concluded that an industry-led initiative under the ICAO framework would be the most expeditious means to promote flight tracking implementation in the short term. In this regard, the Aircraft Tracking Task Force (ATTF), led by the International Air Transport Association (IATA), was established to identify potential solutions for normal flight tracking using existing technologies. The ATTF report describes the characteristics of a routine flight tracking process taking into consideration existing aircraft capabilities. It describes aircraft tracking in terms of existing coverage, practices and technologies. The report also outlines useful performance criteria based on a review of existing technologies and best practices.

An international Standard for normal tracking based on the GADSS and ATTF report was circulated to States in February 2015 for formal comment and is anticipated to be adopted in the fall of 2015. Concurrently, an implementation initiative with industry stakeholders was conducted to expedite integration of best practices in use today, including but not limited to operator flight monitoring, air traffic service, search and rescue and civil/military cooperation.

Distress Tracking and Automatic Deployable Recorders

The Global Aeronautical Distress and Safety System (GADSS) concept of operations was developed to provide a clear definition of the objectives of flight tracking, ensuring that information is provided in a timely fashion to the right people to support search and rescue, recovery of flight data and accident investigation activities.

During discussions to locate an aeroplane in distress, the Flight Recorder Panel (FLIRECP), taking into account the GADSS, recommended provisions for locating aeroplanes in distress within a 6 NM radius. This will help locate an aeroplane quickly after an accident, expediting search and rescue activities and the accident investigation process.

A further consideration in the GADSS is to have flight data available soon after an accident for accident investigation purposes. Automatic deployable flight recorders (ADFR), or other systems for flight data transmission, were proposed for this purpose.

Having these systems in place will ensure that an aeroplane in distress or that has been involved in an accident, either over land or into water, can be located quickly and the accident investigation instituted promptly.

Extended Duration of Cockpit Voice Recorders

The value of cockpit voice recorders (CVR) for investigation of accidents and incidents regarding the analysis of human factors and different sounds in the cockpit cannot be emphasized enough. Today, CVR recordings are for two hours, but the technology exists for longer-duration recordings. If an incident occurs during take-off of a flight lasting more than two hours, the CVR recordings would not cover the take-off phase, which would be important for the investigation. The FLIRECP developed provisions for extending CVR recordings to twenty-five hours which is a robust solution to include recordings of a long-haul flight, including its pre-flight and post-flight crew activities. These recordings will greatly improve the thoroughness and efficiency of accident and incident investigations.

Fatigue Management for Air Traffic Controllers

Like pilots, air traffic controllers (ATCs) have to perform safety-critical duties when they may be vulnerable to fatigue-related performance effects. However, unlike pilots, no Standards currently exist in relation to the management of ATC fatigue. In 2014, a set of fatigue management Standards which aim to enhance the management of ATC fatigue-related

risks, underwent preliminary review by the Air Navigation Commission and were circulated to Member States and international organizations for comment.

The proposed Standards would establish prescriptive duty limitation regulations for air traffic controllers (ATCs) as well as optional FRMS regulations. This approach aims to ensure that all States, regardless of context and availability of resources, have regulations that support minimum requirements for ATC fatigue management while offering the potential safety and efficiency enhancements of FRMS.

Comprehensive guidance material is currently under development by ICAO's FRMS Task Force, which benefits from the inputs of regulators, air traffic service providers, operational personnel and scientists from all ICAO regions who have particular expertise in ATC fatigue management. Early availability of this guidance is planned to support States in implementing these Standards should they be adopted.

The Collaborative Loss of Control In-flight (LOC-I) Programme

On average over the last 10 years, loss of control in-flight accidents have accounted for about a quarter of all fatalities in scheduled commercial air transport. Following on from ICAO's Loss of Control In-flight (LOC-I) Symposium held in Montreal in May 2014, wide industry support for a global and coordinated approach to addressing this top aviation safety priority has resulted in the establishment of a collaborative LOC-I programme. International associations and organizations (including Airbus, Boeing, Bombardier, CAE, EASA, Embraer, FAA, IATA and IFALPA) are working with ICAO to develop content and support the delivery of regional LOC-I workshops, develop tools to support the prevention of LOC-I events and provide easy access to these tools on a collaborative website. Beginning in 2015, a series of regional LOC-I workshops will assist regulators, operators, pilot training organizations and pilots to identify and adopt effective LOC-I prevention strategies and to enhance the implementation of new upset prevention and recovery training provisions.

Upset Prevention and Recovery Training – Mitigation of Loss of Control In-flight

As a recent study of LOC-I occurrences revealed that overarching training deficiencies failed to adequately prepare the affected flight crews to recognize, avoid and, in the worst instances, recover from an upset condition, ICAO established

the Loss of Control Avoidance and Recovery Training (LOCART) group to assist in the development of provisions to address these training concerns. In 2014, and based on the work of this group, ICAO established new Standards and Recommended Practices in Annex 1 — *Personnel Licensing* and Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes* requiring upset prevention and recovery training (UPRT) for the Multi-crew Pilot License, the type rating, the airline training programme and recommending UPRT for the commercial pilot licence. To support these new provisions, new UPRT procedures were introduced in the *Procedures for Air Navigation Services — Training* (PANS-TRG, Doc 9868) and guidance for implementation was published in a new manual, the *Manual on Aeroplane Upset Prevention and Recovery Training* (Doc 10011) and in the fourth edition of the *Manual of Criteria for the Qualification of Flight Simulation Training Devices — Aeroplanes*, Volume I, (Doc 9625), with new qualification criteria for UPRT.

ICAO is currently working with aircraft manufacturers to update the Airplane Upset Recovery Training Aid (AURTA). This will be published as an ICAO document and made freely available in 2015.

Cabin Safety – Cabin Crew Training

Cabin crew members have essential roles in managing safety onboard aircraft. ICAO has taken a lead role in focusing greater attention on cabin safety initiatives by publishing the first edition of the *Cabin Crew Safety Training Manual* (Doc 10002) in 2014. The manual provides guidance on the content of approved cabin crew training programmes, as required by Standards and Recommended Practices (SARPs) found in Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*. It presents cabin crew training from a competency-based approach and outlines an international baseline of all the competencies that are necessary for cabin crew members to perform their duties and responsibilities in normal, abnormal and emergency situations. The new document replaces the *Cabin Attendants' Safety Training Manual* (Doc 7192 Part E-1), which dates to 1996.

Cabin Safety – Expanded Use of Portable Electronic Devices

In response to queries from States and industry, ICAO developed *Guidelines for the Expanded Use of Portable Electronic Devices* (Cir 340) in 2014. This circular provides guidance for States who wish to allow operators to transition to an expanded use of portable electronic devices (PEDs) by passengers during critical phases of flight. The circular presents the series of considerations that the State should integrate into the approval process, including modifications to regulations and changes in policy and procedures, which should be required of any operator considering or planning to allow the expanded use of PEDs on its aircraft. Guidance is also provided to assist operators implement the expanded use of PEDs, including: the technical considerations associated with aircraft PED tolerability testing, as well as flight operations and cabin safety, crew training and passenger awareness aspects that should be considered as part of the State's approval process.

Cabin Safety – Lithium Battery Fires

ICAO completed a revision of the Cabin Crew Checklist for Dangerous Goods Incidents in the Passenger Cabin during Flight, included in the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481). The revised content, included in the 2015-2016 edition of the manual, provides expanded guidance for cabin crew when dealing with lithium battery/PED fires on board and address specific issues, such as handling of devices during and after an occurrence as well as guidance for specific issues, such as battery/PED fires in overhead bins.

Additional information on ICAO's Cabin Safety Programme can be found at: http://www.icao.int/cabinsafety.

Appendix 1

Analysis of Accidents — Scheduled Commercial Air Transport

This Appendix provides a detailed analysis of accidents that occurred in 2014 as well as a review of accident statistics from the previous four years.

The data used in this analysis are for operations involving aircraft providing scheduled commercial air transport having a maximum take-off weight exceeding 5700 kg.

High-Risk Accident Occurrence Categories

Based on an analysis of historic accident data, ICAO identified three high-risk accident occurrence categories:

- runway safety related events
- loss of control in-flight (LOC-I)
- controlled flight into terrain (CFIT)

ICAO uses these high-risk accident categories as a baseline in its safety analysis.

As the first chart below indicates, these three categories represented 58% of the total number of accidents, 57% of fatal accidents and 36% of all fatalities in 2014.

Fatalities	36%	64%
Fatal Accidents	57%	43%
Accidents	58%	42%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

■ High-risk categories
■ Others
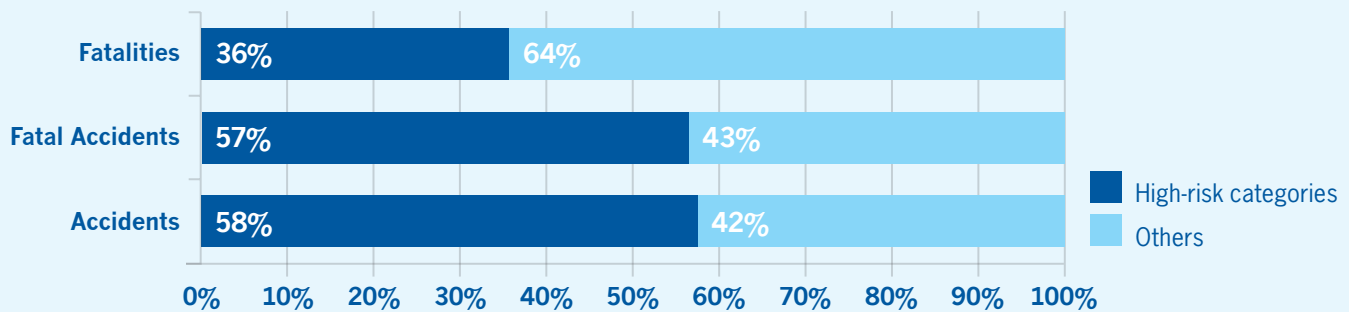
Runway safety-related events include the following ICAO accident occurrence categories: abnormal runway contact, bird strike, ground collision, ground handling, runway excursion, runway incursion, loss of control on ground, collision with obstacle(s), undershoot / overshoot, aerodrome.

The figure below provides a comparison of the distribution of accidents, fatal accidents and fatalities related to the three high-risk occurrence categories in 2014. Runway safety-related accidents accounted for the majority of all accidents during 2014 (54%), but only a single fatal accident with one fatality.

Notable observations and trends from 2014 accident data include:

- Runway safety-related accidents continue to result in relatively low numbers of fatalities, despite having the highest percentage of accidents.

- While the loss of control in-flight occurrence category represented only 2% of all 2014 accidents, this category is of significant concern as it accounts for 29% of all fatal accidents and 31% of all fatalities (the highest by proportion).

- CFIT accidents were responsible for 14% of fatal accidents analyzed in 2014.

Controlled flight into terrain
- 5%
- 14%
- 2%

Loss of control in-flight
- 31%
- 29%
- 2%

Runway Safety related
- 0%
- 14%
- 54%

Legend:
- Fatalities
- Fatal Accidents
- Accidents

X-axis: 0% 10% 20% 30% 40% 50% 60% 70%
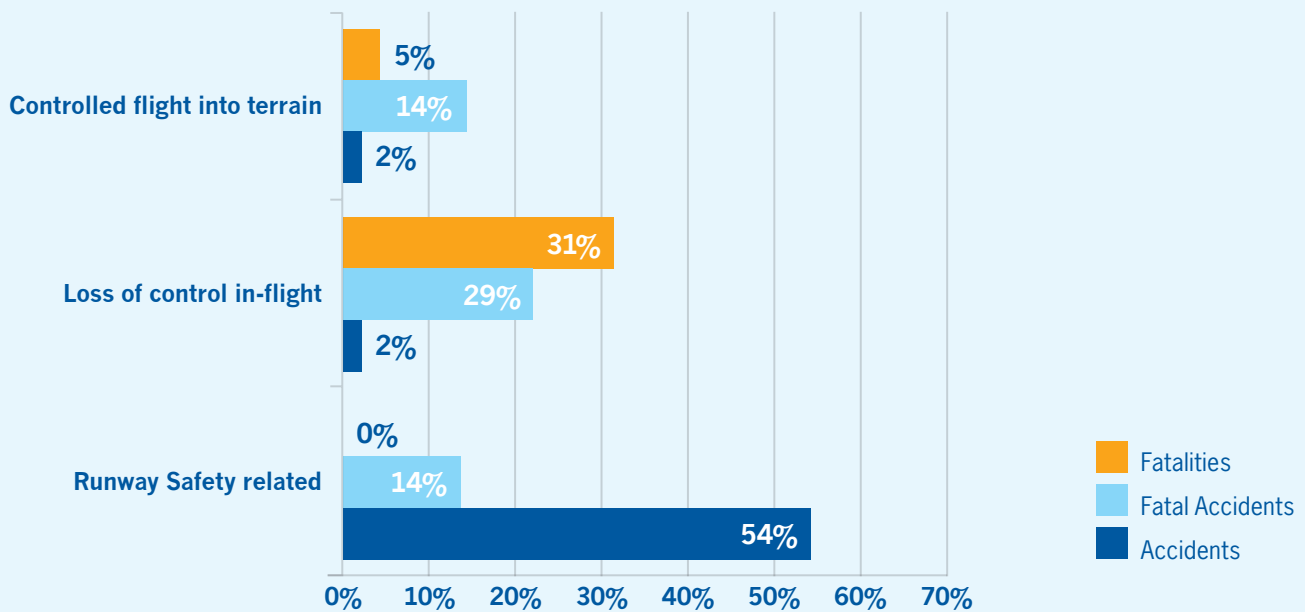
2014 Accidents by Region

The chart below indicates the percentage of accidents and related fatalities by RASG region.

The RASG-PA region is one of the largest regions geographically, and also represents the highest volume of air traffic flown globally. Therefore, the share of accidents is understandably higher than when compared to other regions. However, the RASG-PA experienced no fatal accidents in 2014. The high percentage of fatalities in the RASG-APAC region are primarily due to two accidents (Malaysia Airlines MH 370 and Air Asia 8501).

The composition of each RASG region can be found in Appendix 2.

Region	Fatalities	Fatal Accidents	Accidents
RASG-PA	0%	0%	42%
RASG-MID	4%	29%	7%
RASG-EUR	33%	14%	27%
RASG-APAC	50%	43%	18%
RASG-AFI	13%	14%	6%

Legend:
- Fatalities
- Fatal Accidents
- Accidents
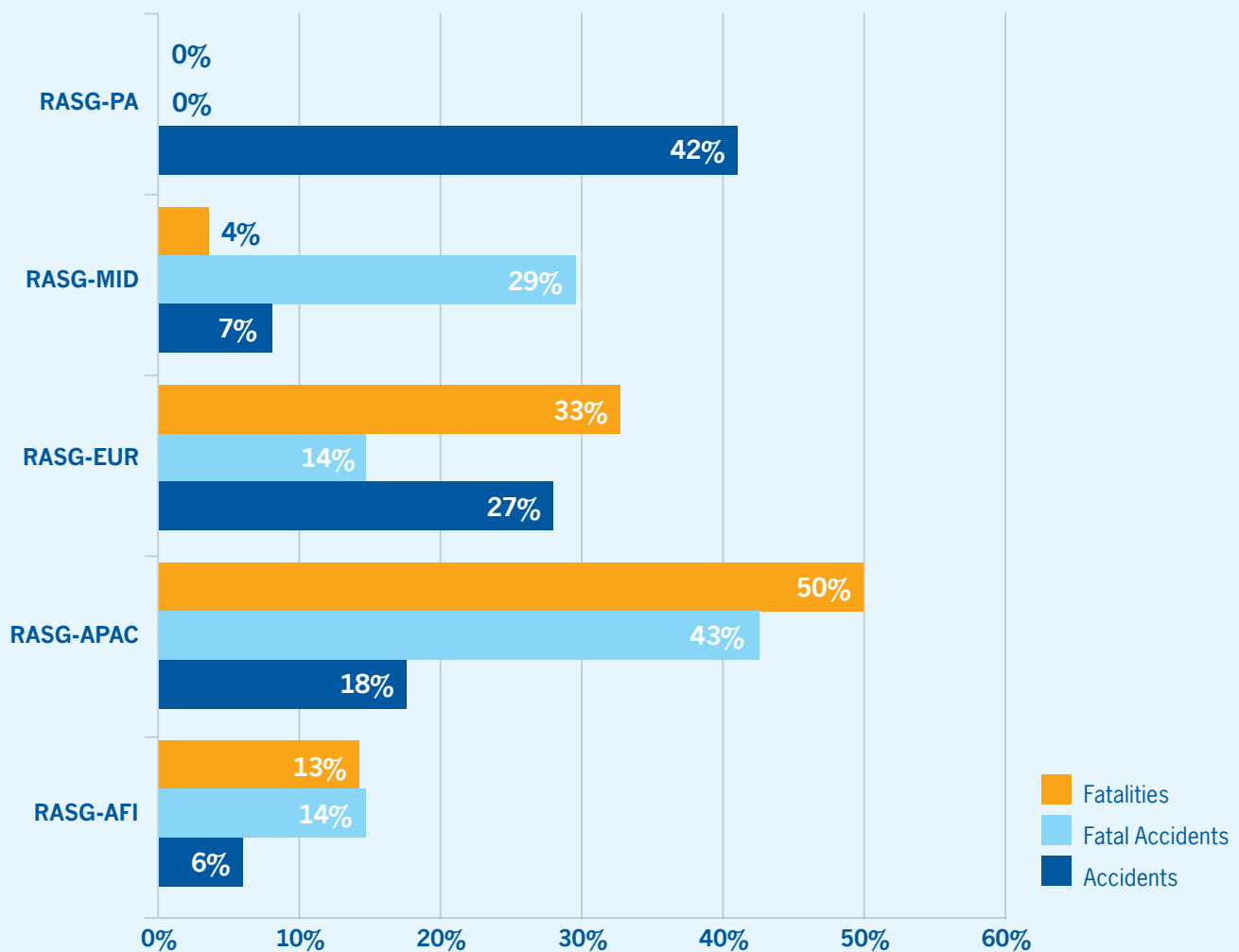
2010−2014 Accident Trends

The chart below shows the number of total and fatal accidents on commercial scheduled flights during the 2010−2014 period.
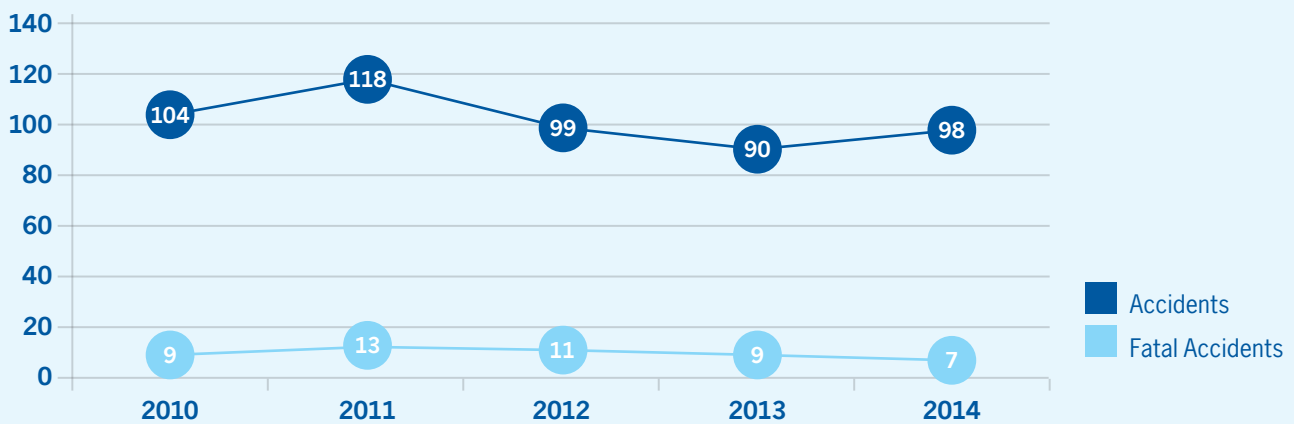
The number of accidents experienced annually has been generally stable between 2010 and 2014, varying between 104 and 98 per year. There was a decrease in the number of accidents in 2013 with an accompanying reduction in the accident rate to 2.8 accidents per million departures; however, the accident count and rate have increased in 2014. Historically, the number of accidents has been as high as 126 per year, so this stability is seen as an improvement

2014 experienced a 9% year-over-year increase in the total number of accidents in scheduled commercial air transport when compared to 2013. Meanwhile, traffic growth was up very marginally at 3%. As a result, the 2014 accident rate rose to 3.0 accidents per million departures, a 7% increase.

The chart below shows the number of fatalities associated with the above-mentioned fatal accidents.
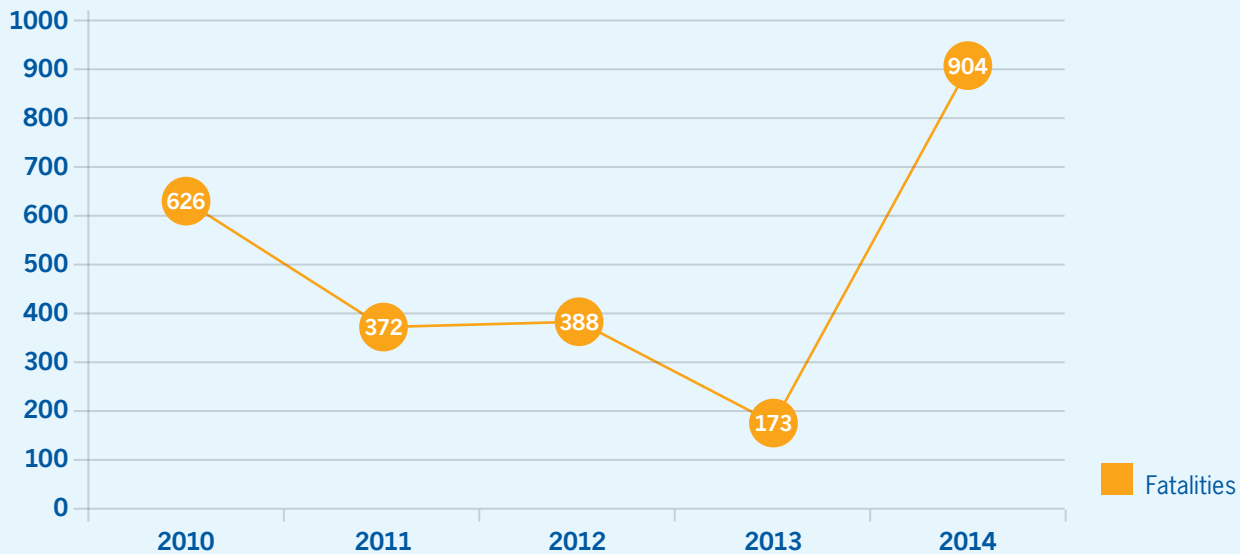
Appendix 2

Regional Aviation Safety Group Regions

The assignment of countries or areas to specific groupings is for statistical convenience and does not imply any assumption regarding political or other affiliation of countries or territories by ICAO.

RASG-PA
RASG-EUR
RASG-MID
RASG-AFI
RASD-APAC

RASG-AFI

Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Comoros

Congo
Côte d'Ívoire
Democratic Republic of the Congo
Djibouti
Equatorial Guinea
Eritrea
Ethiopia
Gabon
Gambia
Ghana

Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Madagascar
Malawi
Mali
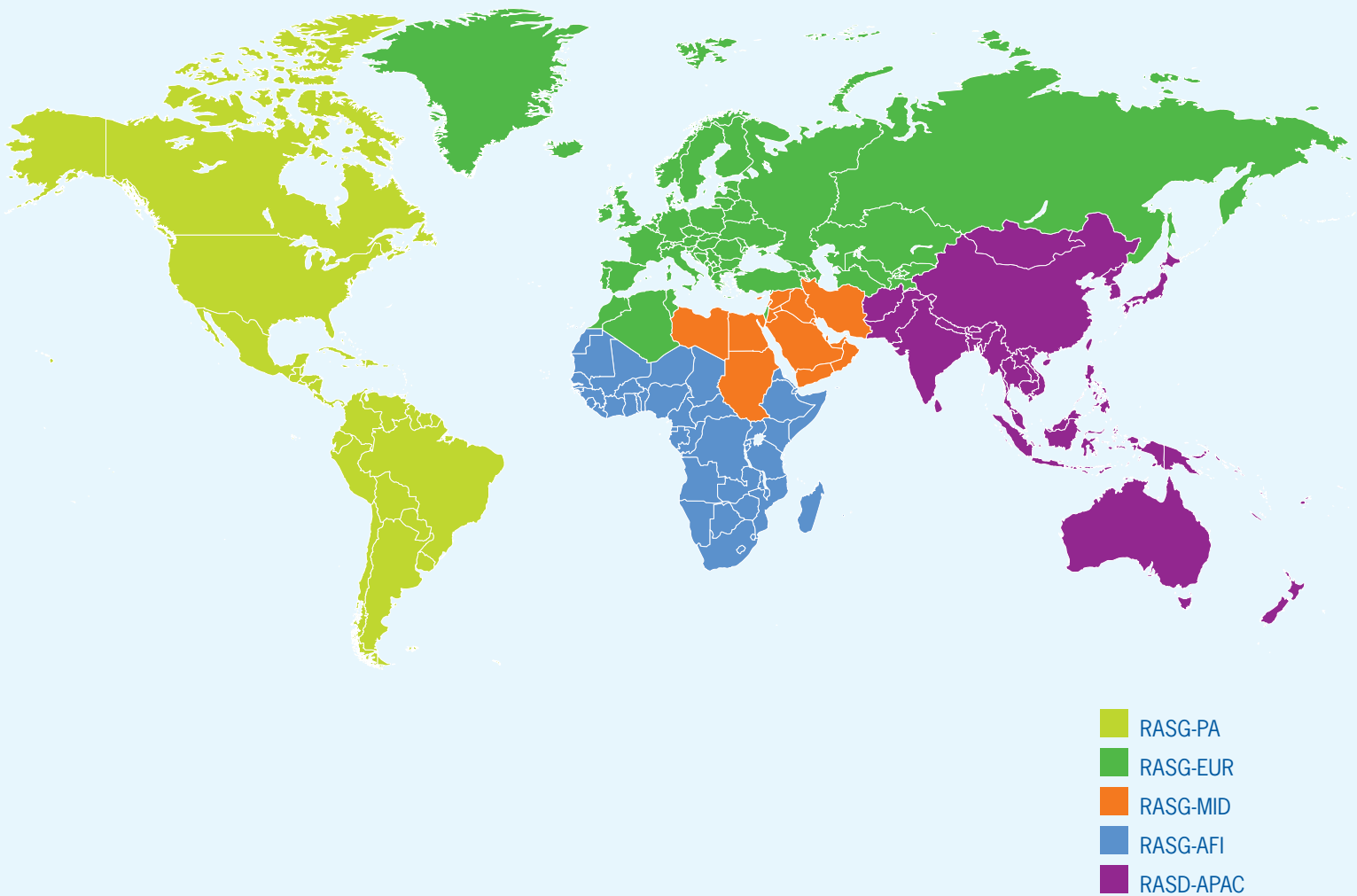Mauritania
Mauritius

Mozambique
Namibia
Niger
Nigeria
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia

South Africa
South Sudan
Swaziland
Togo
Uganda
United Republic of Tanzania
Zambia
Zimbabwe

RASG-APAC

Afghanistan
Australia
Bangladesh
Bhutan
Brunei Darussalam
Cambodia
China
Cook Islands
Democratic People's Republic of Korea

Federated States of Micronesia
Fiji
India
Indonesia
Japan
Kiribati
Lao People's Democratic Republic
Malaysia

Maldives
Marshall Islands
Mongolia
Myanmar
Nauru
Nepal
New Zealand
Pakistan
Palau

Papua New Guinea
Philippines
Republic of Korea
Samoa
Singapore
Solomon Islands
Sri Lanka
Thailand
Timor-Leste

Tonga
Tuvalu
Vanuatu
Viet Nam

RASG-EUR

Albania
Algeria
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus

Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel

Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Morocco
Netherlands
Norway

Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland

Tajikistan
The former Yugoslav Republic of Macedonia
Tunisia
Turkey
Turkmenistan
Ukraine
United Kingdom of Great Britain and Northern Ireland
Uzbekistan

RASG-MID

Bahrain	Jordan	Oman	Syrian Arab Republic
Egypt	Kuwait	Qatar	United Arab Emirates
Iraq	Lebanon	Saudi Arabia	Yemen
Islamic Republic of Iran	Libyan Arab Jamahiriya	Sudan	

RASG-Pan America

Antigua and Barbuda	Chile	Grenada	Panama	Trinidad and Tobago
Argentina	Colombia	Guatemala	Paraguay	United States
Bahamas	Costa Rica	Guyana	Peru	Uruguay
Barbados	Cuba	Haiti	Saint Kitts and Nevis	Venezuela
Belize	Dominica	Honduras	Saint Lucia	
Bolivia	Dominican Republic	Jamaica	Saint Vincent and the Grenadines	
Brazil	Ecuador	Mexico	Suriname	
Canada	El Salvador	Nicaragua		

Appendix 3

GSIE Harmonized Accident Categories

Category	Description
Controlled Flight into Terrain (CFIT)	Includes all instances where the aircraft was flown into terrain in a controlled manner, regardless of the crew's situational awareness. Does not include undershoots, overshoots or collisions with obstacles on take-off and landing which are included in Runway Safety.
Loss of Control in-Flight (LOC-I)	Loss of control in-flight that is not recoverable.
Runway Safety (RS)	Includes runway excursions and incursions, undershoot/overshoot, tailstrike and hard landing events.
Ground Safety (GS)	Includes ramp safety, ground collisions, all ground servicing, pre-flight, engine start/departure and arrival events. Taxi and towing events are also included.
Operational Damage (OD)	Damage sustained by the aircraft while operating under its own power. This includes in-flight damage, foreign object debris (FOD) and all system or component failures including gear-up landing and gear collapse.
Injuries to and/or Incapacitation of Persons (MED)	All injuries or incapacitations sustained by anyone in direct contact with the aircraft. Includes turbulence-related injuries, injuries to ground staff coming into contact with the aircraft and on-board incapacitations and fatalities not related to unlawful external interference.
Other (OTH)	Any event that does not fit into the categories listed above.
Unknown (UNK)	Any event whereby the exact cause cannot be reasonably determined through information or inference, or when there are insufficient facts to make a conclusive decision regarding classification.

Category	CICTT Occurrence Catogies	IATA Classification End States
Controlled Flight into Terrain (CFIT)	CFIT, CTOL	CFIT
Loss of Control in-Flight (LOC-I)	LOC-I	Loss of Control In-flight
Runway Safety (RS)	RE, RI, ARC, USOS	Runway Excursion, Runway Collision, Tailstrike, Hard Landing, Undershoot
Ground Safety (GS)	G-COL, RAMP, LOC-G	Ground Damage
Operational Damage (OD)	SCF-NP, SCF-PP	In-flight Damage
Injuries to and/or Incapacitation of Persons (MED)	CABIN, MED, TURB	None (excluded in IATA Safety Report)
Other (OTH)	All other CICTT Occurrence Categories	All other IATA end-states
Unknown (UNK)	UNK	Insufficient Information

Appendix 4

Table of Scheduled Commercial Accidents for 2014

Date	Aircraft Type	State of Occurrence	RASG Region	Fatalities	Accident Category
01/03/2014	Boeing 737	United States	RASG-PA		RS
01/05/2014	Airbus A320	India	RASG-APAC		RS
01/05/2014	Boeing 767	Saudi Arabia	RASG-MID		RS
01/07/2014	Fokker 50	Sudan	RASG-MID		RS
01/08/2014	Saab 340	Canada	RASG-PA		RS
01/09/2014	Boeing 737	United States	RASG-PA		OTH
01/10/2014	Swearingen Metro	Canada	RASG-PA		RS
01/10/2014	Boeing 757	United States	RASG-PA		TURB
01/24/2014	Let 410	United Republic of Tanzania	RASG-AFI		RS
01/26/2014	Boeing 737	Solomon Islands	RASG-APAC		SCF
01/28/2014	Saab 2000	France	RASG-EUR		RS
01/29/2014	Bombardier Dash 8	Denmark	RASG-EUR		RS
01/31/2014	McDonnell Douglas MD-88	United States	RASG-PA		RS
02/01/2014	Boeing 737	Indonesia	RASG-APAC		RS
02/02/2014	Airbus A320	Tajikistan	RASG-EUR		RS
02/05/2014	Embraer ERJ-145	United States	RASG-PA		RS
02/07/2014	Bombardier Dash 8	United Kingdom	RASG-EUR		TURB
02/16/2014	Douglas DC-9	United States	RASG-PA		RS
02/17/2014	Boeing 737	Spain	RASG-EUR		RS
02/17/2014	Hawker Sideley HS.745	Sudan	RASG-MID	1	RS
02/17/2014	Airbus A321	United Arab Emirates	RASG-MID		RS
02/17/2014	Boeing 737	United States	RASG-PA		TURB
02/20/2014	ATR 72	Australia	RASG-APAC		UNK
02/22/2014	Boeing 737	Portugal	RASG-EUR		RS
02/26/2014	Embraer 195	Italy	RASG-EUR		RS
03/04/2014	Boeing 737	United States	RASG-PA		OTH
03/05/2014	Airbus A320	Argentina	RASG-PA		RS
03/08/2014	Boeing 777	Overflying RASG-APAC	RASG-APAC	239	UNK
03/09/2014	ATR 42	Canada	RASG-PA		SCF
03/09/2014	Boeing 737	Overflying RASG-EUR	RASG-EUR		TURB
03/09/2014	Airbus A321	Switzerland	RASG-EUR		RS

Date	Aircraft Type	State of Occurrence	RASG Region	Fatalities	Accident Category
03/13/2014	Airbus A320	United States	RASG-PA		RS
03/28/2014	Fokker 100	Brazil	RASG-PA		SCF
03/31/2014	Embraer 190	Jamaica	RASG-PA		F-NI
04/11/2014	Embraer 190	United Republic of Tanzania	RASG-AFI		RS
04/19/2014	Embraer 190	France	RASG-EUR		RS
04/29/2014	Boeing 737	United Kingdom	RASG-EUR		SCF
05/04/2014	Boeing 737	United States	RASG-PA		RS
05/08/2014	Boeing 737	Afghanistan	RASG-APAC		RS
05/09/2014	Boeing 737	Panama	RASG-PA		SCF
05/10/2014	FOKKER	Iran (Islamic Republic of)	RASG-MID		RS
05/24/2014	Airbus A321	Austria	RASG-EUR		TURB
05/28/2014	Embraer ERJ-140	United States	RASG-PA		RS
05/30/2014	Hawker Sideley HS.745	Canada	RASG-PA		SCF
06/17/2014	Boeing 767	Brazil	RASG-PA		OTH
06/23/2014	Boeing 737	Spain	RASG-EUR		TURB
06/26/2014	Airbus A330	Thailand	RASG-APAC		TURB
06/28/2014	Boeing 737	United Kingdom	RASG-EUR		RS
07/04/2014	Airbus A320	Germany	RASG-EUR		RS
07/10/2014	ATR 72	United Republic of Tanzania	RASG-AFI		RS
07/17/2014	Boeing 777	Ukraine	RASG-EUR	298	OTH
07/20/2014	ATR 72	Bangladesh	RASG-APAC		SCF
07/23/2014	ATR 72	China	RASG-APAC	48	CFIT
07/24/2014	McDonnell Douglas MD-83	Mali	RASG-AFI	118	LOC-I
07/26/2014	Embraer 110	Bahamas	RASG-PA		SCF
07/29/2014	Boeing 737	United Kingdom	RASG-EUR		RS
07/30/2014	Boeing 757	United States	RASG-PA		RS
08/09/2014	Bombardier CRJ-900	United States	RASG-PA		RS
08/10/2014	Antonov 140	Iran (Islamic Republic of)	RASG-MID	38	SCF
08/10/2014	Bombardier Dash 8	United States	RASG-PA		RS
08/13/2014	ATR 72	Sweden	RASG-EUR		TURB
08/14/2014	Boeing 737	United States	RASG-PA		RS
08/15/2014	BAe Jetstream	United Kingdom	RASG-EUR		SCF
08/18/2014	Boeing 767	United States	RASG-PA		TURB
08/22/2014	Embraer 170	United States	RASG-PA		OTH
08/27/2014	Embraer 170	United States	RASG-PA		OTH
09/09/2014	Embraer 145	United States	RASG-PA		RS
09/12/2014	Boeing 767	Republic of Korea	RASG-APAC		TURB
09/20/2014	Embraer 195	China	RASG-APAC		RS
09/21/2014	Bombardier Dash 8	Maldives	RASG-APAC		RS

Date	Aircraft Type	State of Occurrence	RASG Region	Fatalities	Accident Category
09/21/2014	Airbus A319	Spain	RASG-EUR		TURB
10/03/2014	Boeing 777	Argentina	RASG-PA		TURB
10/05/2014	Airbus A330	Thailand	RASG-APAC		TURB
10/05/2014	Embraer ERJ-145	United States	RASG-PA		RS
10/07/2014	Boeing 737	Ireland	RASG-EUR		RS
10/12/2014	BAe Jetstream	Dominican Republic	RASG-PA		RS
10/18/2014	Airbus A380	India	RASG-APAC		TURB
10/21/2014	Bombardier CRJ-700	Germany	RASG-EUR		RS
10/22/2014	Embraer 175	United States	RASG-PA		RS
10/23/2014	Airbus A330	United Arab Emirates	RASG-MID		OTH
10/29/2014	Bombardier Shorts 360	Netherlands	RASG-EUR		UNK
11/03/2014	Swearingen Metro	Bolivia (Plurinational State of)	RASG-PA		RS
11/06/2014	Bombardier Dash 8	Canada	RASG-PA		RS
11/06/2014	Boeing 737	India	RASG-APAC		RS
11/07/2014	Boeing 737	Afghanistan	RASG-APAC		SCF
11/20/2014	Boeing 737	United States	RASG-PA		RS
11/24/2014	Boeing 747	Gabon	RASG-AFI		RS
11/24/2014	Boeing 737	United States	RASG-PA		TURB
12/04/2014	ATR 72	Switzerland	RASG-EUR		SCF
12/11/2014	Boeing 737	United States	RASG-PA		TURB
12/12/2014	Boeing 737	United States	RASG-PA		RS
12/14/2014	BAe Jetstream	Colombia	RASG-PA		RS
12/16/2014	Boeing 777	Japan	RASG-APAC		TURB
12/19/2014	Bombardier Dash 8	Bahamas	RASG-PA		SCF
12/23/2014	Boeing 737	United Kingdom	RASG-EUR		RS
12/28/2014	Antonov 26	Democratic Republic of the Congo	RASG-AFI		CFIT
12/28/2014	Airbus A320	Indonesia	RASG-APAC	162	LOC-I
12/30/2014	Boeing 737	Pakistan	RASG-APAC		RS

Accident Categories

Code	Description
CFIT	Controlled flight into/towards terrain
RS	Runway safety related
LOC-I	Loss of control in-flight
F-NI	Fire – non-impact

Code	Description
TURB	Turbulence encounter
OTH	Other
UNK	Unknown
SCF	System component failure

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