ICAO

Safety

RASG-AFI

Annual Safety Report 2019

Sixth Edition

Issued in July 2020

Table of Contents

List of Figures:

List of Tables:

List of Appendices:

Foreword

The Regional Aviation Safety Group for Africa-Indian Ocean (RASG-AFI) constituted the Annual Safety Report Team (ASRT) tasked with the production of an annual report on aviation safety in the RASG-AFI Region. The report provides safety information from different available sources to determine the main safety risks in the Region as well as recommendations to the RASG-AFI, States and stakeholders for safety enhancement initiatives. Stakeholders are therefore encouraged to collaborate and cooperate with the RASG-AFI in sharing and exchanging safety information to improve the aviation safety within the AFI region.

The progress and effectiveness of States in achieving the objectives and priorities of the Abuja Safety Targets as revised in 2017 are measured on an on-going basis. Monitoring and reporting progress enables States and the ICAO regional offices to adjust activities and to address emerging safety issues. To support States in this endeavour, the RASG-AFI Annual Safety Report (ASR) provides an indication of the progress being made.

The ASR is released and distributed during the AFI Aviation Week, which is an annual event organized by ICAO and generally hosted by an AFI Member State. It is organized in Section headings. A Table of Contents is provided which serves as a subject index. Comments and contributions from the general readership geared towards improving the quality of the report are highly welcome.

Conclusions and recommendations made in the Report are for the attention and appropriate action by relevant parties for implementation. Subsequent editions of the Report will provide information on the status of implementation of such recommendations; and any alternative course of actions to be undertaken in addressing the outstanding issues.

An electronic copy of the RASG-AFI Annual Safety Report is available in PDF format, on the ICAO Western and Central African Regional Office website (http://www.icao.int/wacaf/Pages/default.aspx) and the ICAO Eastern and Southern African Regional Office website (http://www.icao.int/esaf/Pages/default.aspx).

Captain Gilbert Kibe

Chairperson, RASG-AFI

Director General, Kenya CAA

Background

This Sixth Edition of the RASG-AFI Annual Safety Report provides safety information related to accidents and other safety occurrences in the RASG-AFI region. It also provides background on the establishment of the Regional Aviation Safety Group for Africa - Indian Ocean (RASG-AFI). This edition of the Report was posted onto relevant ICAO Websites in July 2020, deviating from the customary release of the report during the annual AFI Aviation Week; this was due to the Corona Virus Disease (COVID-19) Pandemic which resulted in lockdown of global activities, including aviation, thereby making face-to-face activities practically impossible thus, resorting to innovative means such as virtual meetings.

RASG-AFI is the main driver behind the planning and implementation of Safety Enhancement Initiatives (SEIs) at the regional level. It is composed of States, regional entities and industry, among others. RASG-AFI builds on work already done by States, existing regional organizations such as the COSCAPs and RSOOs/RAIOs. It serves as regional cooperative forum integrating global, regional, national and industry efforts in continuing to enhance aviation safety within the RASG-AFI Region and worldwide. It endeavours to eliminate duplication of efforts through the establishment of cooperative regional safety programmes. This coordinated approach significantly reduces both financial and human resource burdens on States while delivering measurable safety improvements. The role of RASG-AFI is to monitor the implementation of the Abuja Safety targets (which are aligned to the Global Aviation Safety Plan (GASP)), in collaboration with AFCAC, which presents the strategy to support the prioritization and continuous improvement of aviation safety, including,

a) supporting and monitoring progress towards the achievement of the GASP goals at the regional level;

b) developing and implementing a regional aviation safety plan consistent with the GASP, and coordinating its implementation at the regional level;

c) structuring its work in line with the GASP to address organizational challenges, operational safety risks, emerging safety issues, and safety performance management;

d) identifying safety risks and issues of priority, and encouraging States to initiate action using the roadmap;

e) coordinating and tracking regional Safety Enhancement Initiatives (SEIs) and GASP indicators;

f) coordinate with APIRG on safety issues and provide feedback to ICAO to continually improve and ensure an up-to-date global safety framework;

g) monitoring safety performance indicators (SPIs) from States and identifying where action is needed;

h) providing technical assistance to States, for example by identifying subject matter experts, and conducting workshops and facilitating training; and

i) serving as the focal point to coordinate regional efforts and programmes related to the GASP aimed at mitigating operational safety risks;

j) facilitate the development and implementation of safety risk mitigation action plans by States, taking into consideration States' level of effective implementation of the critical elements of safety oversight systems and progress being made to improve the level;

k) facilitate the development and implementation of a regional aviation safety plan (RASP) and national aviation safety plans (NASPs) by States.

The RASG-AFI structure consists of a Chairperson, two (2) Vice-Chairpersons from States and one (1) Vice-Chairperson from the Aviation Industry, Steering Committee, Secretariat and four (4) Safety Support Teams.

Contracting States entitled to participate as members in the RASG-AFI meetings are:
- those whose territories or dependencies are located partially or wholly within the AFI Region (ESAF and WACAF accredited States; see **Appendix 1** for the list of Members of RASG-AFI); and
- those located outside the area which have notified ICAO that aircraft on their registry or aircraft operated by an operator whose principal place of business or permanent residence is located in such States, operate or expect to operate into the area; or which provide facilities and services affecting the area.

Contracting States not meeting the above criteria and non-Contracting States are entitled to participate in RASG-AFI meetings as observers. The aircraft operators, international organizations, maintenance and repair organizations, regional and sub-regional organizations, training organizations, aircraft original equipment manufacturers, airport and air navigation service providers and any other allied organizations/representatives will be invited to attend the RASG-AFI meetings in the capacity of Partners (see **Appendix 2** for Permanent Partners).

State CAAs, supported by service providers as necessary, should participate in the work of the RASG-AFI and its contributory bodies to:

- ensure the continuous and coherent development and implementation of regional safety plans and report back on the key performance indicators (KPIs);
- support the regional work programme with participation from the decision-making authority with the technical expertise necessary for the planning and implementation mechanism, thus supporting policy decisions at the State level;
- support the implementation of effective safety management and collaborative decision-making processes to mitigate aviation safety risks, thus supporting policy decisions at the State level;
- contribute information on safety risk, including State safety programme (SSP) safety performance indicators (SPIs), in accordance with the GASP as part of their safety risk management activities;
- ensure coordination, at the national level, between the CAA, service providers and all other concerned stakeholders, and harmonization of the national plans with the regional and global plans;
- facilitate the development and establishment of Letters of Agreement and bilateral or multilateral agreements;
- ensure the implementation of the GASP goals and targets; and

- embrace a performance-based approach for implementation as highlighted in the Global Plans.

A RASG-AFI-Steering Committee (RASC) composed of representatives from States and international/regional organizations and industry is established to guide the work of the Group. It acts as an advisory body to the RASG-AFI membership and undertakes any actions required to ensure that the RASG-AFI achieves its objective to reduce aviation risks in the AFI Region. It is headed by three co- chairpersons (two from States and one from Industry). Its membership has been expanded to include the AFI Plan Steering Committee Chairperson, the Coordinator for the AFI Group at ICAO Council, and the various Safety Support Teams (SSTs) Champions. These SSTs which are headed by Champions who are members of the RASC, were established for the following priority areas namely: Significant Safety Concerns (SSCs), Fundamentals of Safety Oversight (FSO), Aircraft Accident Investigation (AIG) and Emerging Safety Issues (ESI). The term for the Chairperson, Vice-Chairpersons and Champions is two (2) years.

The following Safety Champions have been designated: SSC – Ghana, South Africa and AFCAC; FSO - Senegal and Uganda; AIG –Ethiopia, Cape Verde and IFALPA; and ESI – Kenya, ASECNA, and ACI.

The two ICAO Regional Directors for Eastern and Southern Africa (ESAF) and Western and Central Africa (WACAF) will alternate in serving as Secretary to the RASG-AFI and APIRG to balance the Secretariat responsibilities between these two regional Groups.

At its Fifth Meeting held in Accra, Ghana, in July, 2019, RASG-AFI elected the following officials to the Bureau, who are entrusted with steering the affairs of the Group for the next two years ending at RASG-AFI/6 Meeting in 2021:
Chairperson – Kenya; 1st Vice-Chairperson – Togo; 2nd Vice-Chairperson – Sierra Leone; 3rd Vice-Chairperson – IATA. The RASG-AFI Steering Committee is co-chaired by the 1st Vice-Chairperson and the 2nd Vice-Chairperson of the RASG-AFI and Boeing representing the Industry (see **Figure 1**).

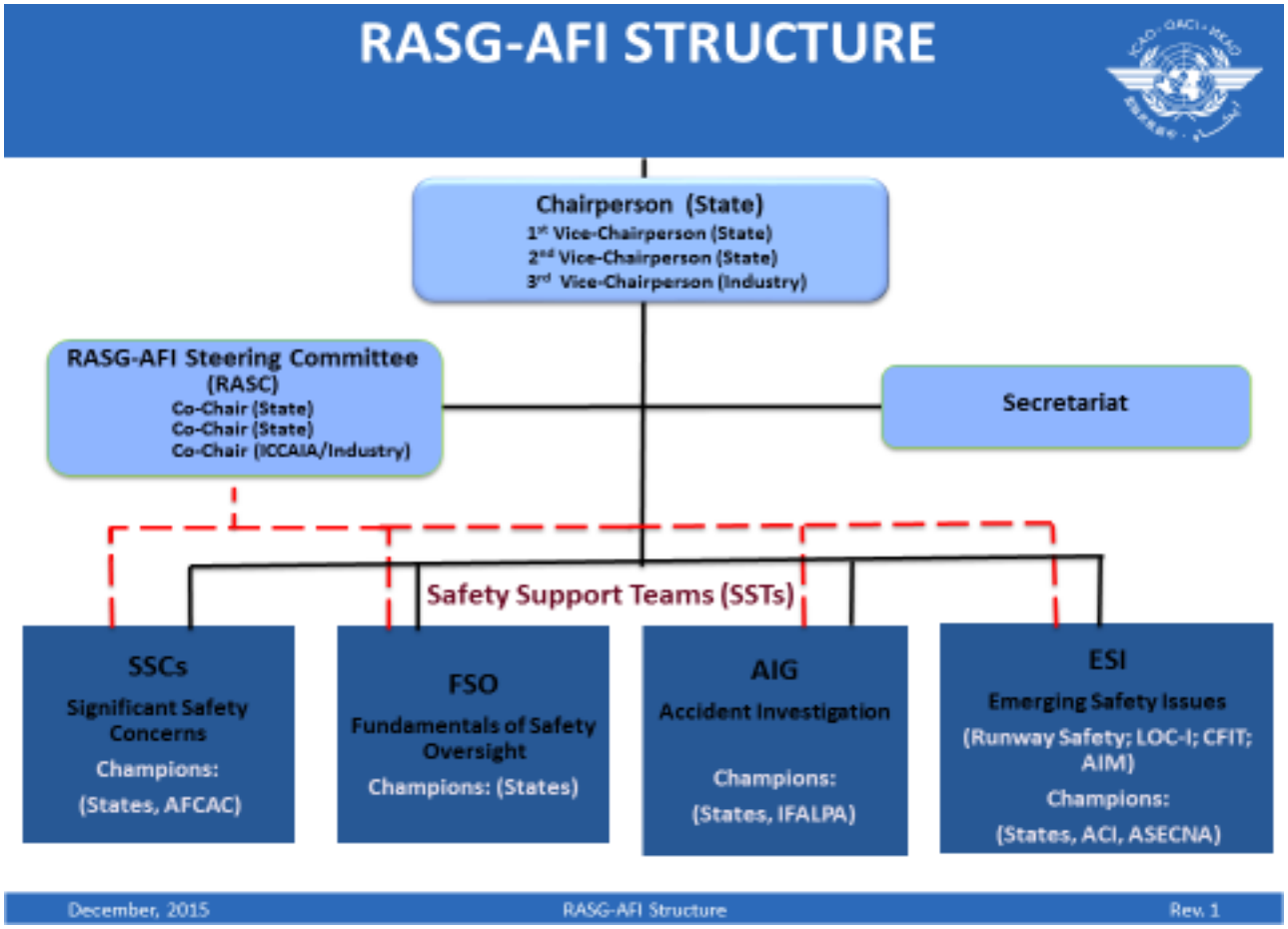
A Joint APIRG-RASG/AFI Coordination Task Force, which was established by the RASG-AFI/3 Meeting, is a subsidiary body to APIRG and RASG-AFI intended to strengthen existing arrangements and responsible for coordinating the activities of the two Groups.

Membership of the APIRG/RASG-AFI Joint Coordination Task Force comprises: two (2) Representatives from APIRG; two (2) Representatives from RASG-AFI (One from Secretariat, the First Vice-Chairperson of RASG-AFI and the State Champions of the SSTs); one (1) Representative from AFCAC; and Airbus representing the Industry (Other representatives from the industry may elect to attend in their own capacities).

RASG-AFI has established an Annual Safety Report Team (ASRT) comprising RASG-AFI Partners, for the purpose of: gathering safety information from different available sources to determine the main safety risks in the AFI Region; generating an Annual Safety Report; making recommendations to the RASG- AFI for safety enhancement initiatives.

This Annual Safety Report has a consolidated vision of aviation safety using sources of information from regional stakeholders, and serves as a key component of RASG-AFI. To this end, RASG-AFI members are encouraged to share their safety data with the ASRT.

Figure 1: RASG-AFI Organisational Structure



1. Executive Summary

This Sixth Edition of the RASG-AFI Annual Safety Report presents safety information collected from ICAO, Boeing, ACI Africa, lATA, and other aviation partners, particularly information related to aviation occurrences in the RASG-AFI Region, generally within the period 2008 to 2019; and the analyses performed by the Annual Safety Report Team (ASRT). This edition of the ASR maintains some key elements from its previous edition, such as goals for States to improve their effective safety oversight capabilities and to progress in the implementation of State Safety Programmes (SSPs). The vision of the RASG-AFI is to achieve and maintain the aspirational safety goal of zero fatalities in commercial operations by 2030 and beyond, which is consistent with the United Nations' *2030 Agenda for Sustainable Development*.

The Annual Safety Report includes the following three main sections:

1. Reactive safety information
2. Proactive safety information
3. Predictive safety information

The reactive safety information section represents the largest portion of the report. It contains analysis of accident data provided from the different sources in order to draw conclusions on areas that require much attention and make recommendations for resolving the safety deficiencies by means of mitigating and corrective measures.

The proactive safety information is based on the results of the ICAO USOAP-CMA Activities, IOSA, ISAGO and AIAG reports as well as other occurrences (Incidents) reported by States or airlines in order to identify emerging risks in the Region. The results of the ICAO Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) Activities in 2019, showed that 28 States in the RASG-AFI Region had attained at least 60 per cent of Effective Implementation (EI) of the eight critical elements of a State's safety oversight system and the ICAO SARPs. At the end of 2019, at the global level, there were three (3) unresolved SSCs in Seven States: Bhutan; Eritrea; Organisation of Eastern Caribbean States (OECS: Antigua and Barbuda, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines). Out of these SSCs, one (1) was in the area of aircraft operations (OPS), one (1) in Air Navigation Services (ANS) and five (5) in the area of Personnel Licensing (PEL); out of these Seven States, one (1) State (Eritrea) is in the RASG-AFI region. The same results indicated that lack of adequate and effective technical staff qualification and training represented the most significantly affected USOAP Critical Element (CE-4) in the Region. Furthermore, the technical areas showing lowest levels of EI were Air Navigation Services (ANS), Aerodromes and Ground Aids (AGA), and Accident and Incident Investigation (AIG). Therefore, improvements in these areas continue to be amongst the priorities of the RASG-AFI Region.

The aim of the predictive safety information is to collect and analyse safety data to proactively identify safety concerns before accidents or incidents occur, to develop timely mitigation and prevention measures. This section provides analysis of the status of safety data management in the region, as well as the implementation status of State Safety Programme (SSP) and Safety Management System (SMS) in the RASG-AFI Region, by the States and industry respectively.

State Safety Programme (SSP) is a framework that allows the State safety oversight authority and aviation related service providers to interact more effectively in the resolution of safety concerns. The Abuja Safety Targets require States with 60 per cent EI and greater to implement SSP (i.e. 28 RASG-AFI States at the end of 2019). By end of 2019, considerable progress had been registered in the implementation of SSP within the RASG-AFI Region: twelve (12) States had attained Level 3 and at various stages of attaining Level 4; six (6) attained Level 2 and at various stages of attaining Level 3; and six (6) attained Level 1 and at various stages of attaining Level 2. No State had yet attained Level 4. (see **Figure 14** and **Table 6**).

Analyses of available safety information on the RASG-AFI Region showed that the top high risk category of occurrence (HRC) to focus safety enhancements is related to Runway Safety (RS) – Runway Excursion (RE) and Runway Incursion (RI). Out of the ten (10) accidents recorded in the RASG-AFI Region in 2019 for scheduled commercial operations involving aircraft with maximum take- off mass above 5700kg, seven (7) were Runway safety related, one (1) related to LOC-I, one (1) to Windshear, and one (1) to system component failure – non-powerplant. There was zero (0) accident related to Controlled Flight Into Terrain (CFIT). Although no accidents related to CFIT was recorded from 2017 to 2019, there is still a need for concerted efforts by all aviation stakeholders to maintain this trend; and address runway safety related accidents, thereby drastically reducing the RASG-AFI accident rate to world average of 2.76 per million departues. The selection of types of occurrences which are deemed the regional high risk categories of occurrences, previously referred to as "regional safety priorities" is based on actual fatalities from past accidents, high fatality risk per accident or the number of accidents and serious incidents. The following HRCs, in no particular order, have been identified in this 6th Edition of the ASR:

- Runway Excursion (RE);
- Runway Incursion (RI);
- Loss of Control In-flight (LOC-I);
- Controlled Flight into Terrain (CFIT);
- Mid-Air Collision (MAC)/ Aircraft Proximity (AIRPROX) Occurrences.

Aircraft accidents are categorized using the definition provided in Annex 13 to the Chicago Convention—Aircraft Accident and Incident Investigation.

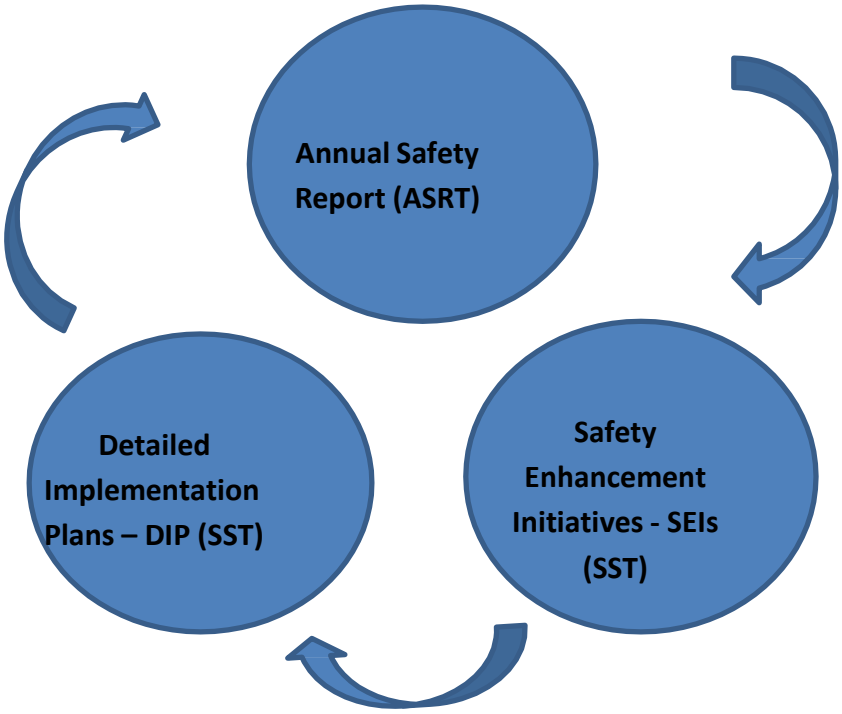
RASG-AFI is committed to improving aviation safety and fostering cooperation and communication - sharing of safety critical information among the principal aviation safety stakeholders.

PLEASE NOTE:

- All accidents statistics sourced from ICAO (ICAO iSTARS) are based on the Country /State of occurrence in RASG-AFI.
- All accidents statistics sourced from IATA (IATA GADM) are based on the operator's Country/State of Registry in RASG-AFI ;

The diagram below illustrates the framework to be used by RASG-AFI to identify and address safety risks in the Region.

Figure 2: Framework for Identifying and Addressing Safety Risks



2. Safety Information and Analysis

The following sections show the results of safety information analysis in terms of reactive, proactive and predictive safety information.

2.1 Reactive Safety Information

As a benchmark, in accordance with the revised Abuja safety targets, the African accident rate should be progressively reduced from 8.6 to 2.5 per million departures by the end of 2022, with focus on:

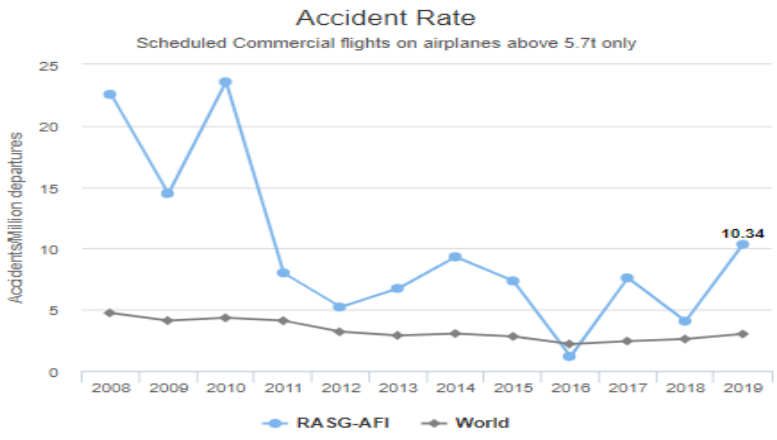
- accidents and serious incidents related to Runway Excursion (RE).
- accidents and serious incidents related to Runway Incursion (RI).
- controlled flight into terrain (CFIT) related accidents and serious incidents.
- Loss of Control In-flight (LOC-I) related accidents and serious incidents.
- Mid-Air Collision/Aircraft Proximity (AIRPROX) Occurrences

The accident rate at the end of 2019 was 10.34 per million departures compared to the world rate of 2.76; runway related accidents and serious incidents (Excursions and Incursions) had a rate of 5.0 accidents per million sectors in 2017 and 1.7 by end of 2019 (i.e. 66 per cent reduction, Source: IATA); CFIT related Accidents and serious Incidents remain at a rate of 0 accident per million sectors from 2015 to 2019; and LOC-I related accidents and serious incidents had a rate of 0.80 per million sectors in 2017 and went up to 1.50 by end of 2019 (i.e. over 100 per cent increase, Source: IATA). To be in line with the global accident rate and taking into account the traffic volume of RASG-AFI, the yearly accident rate for RASG-AFI should be between 0.42 and 5.14 if the ultimate target is to be met.

The Annual Safety Report Team (ASRT) retrieves safety data mainly from ICAO, AFCAC, BOEING, AIRBUS, ACI Africa, CANSO and IATA in order to analyze the available reactive safety information.

Figure 3: RASG-AFI Accident Rate

At the end of December 2019, the RASG-AFI Accident rate was 10.34 per million departures, as compared to the world rate of 2.98. This showed an upward trend for both RASG-AFI and the world (i.e. from 5.16 and 1.76 respectively, in 2018).

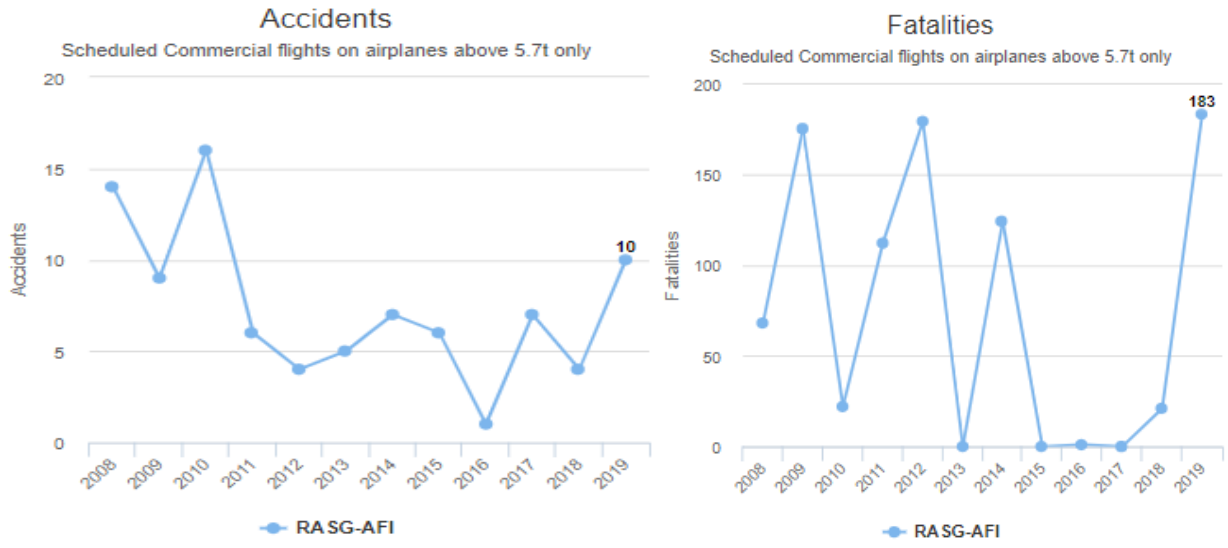


Source: ICAO iSTARS

2.1.1 RASG-AFI Fatal Accident Rate

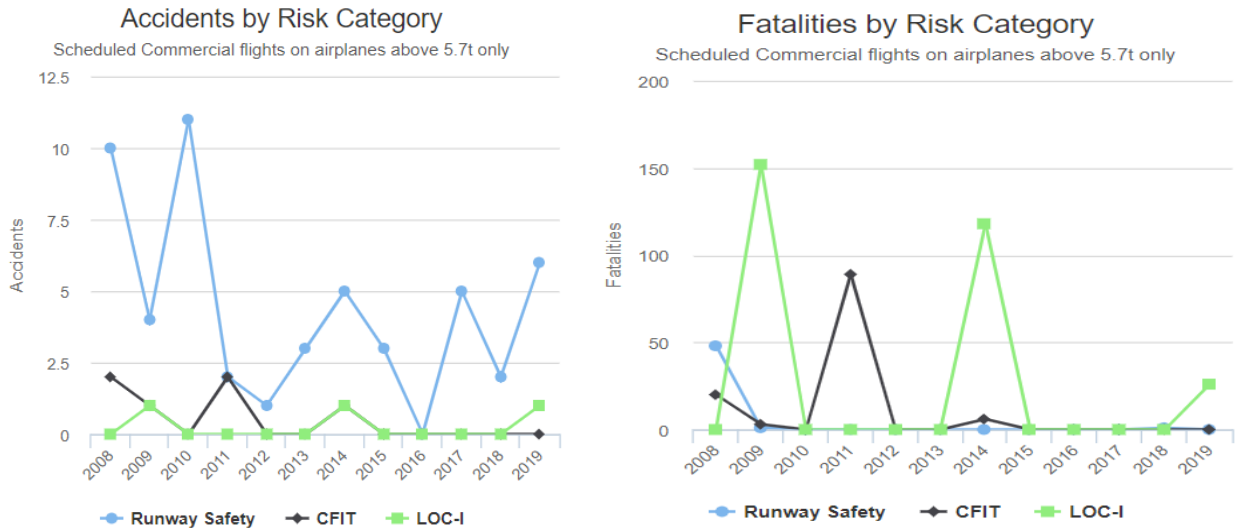
The revised Abuja Safety Targets include target on fatal accidents to reflect NCLB aspirational goal of zero fatal accidents in commercial scheduled flights by 2025. By end of 2019, records showed 183 fatalities in 10 accidents that occurred in the RASG-AFI region (see **Figure 4** below). Seven (7) of the ten accidents were runway safety-related (RS); one (1) was LOC-I related; one (1) due to System Component Failure – Non Powerplant (SCF-NP); and one due to windshear and thunderstorm (WSTRW).

Figure 4: Comparison of Number of Accidents and Fatalities in RASG-AFI for 2019



Source: ICAO iSTARS

Figure 5: Accidents and Fatalities by Risk Category



Source: ICAO iSTARS

2.1.2 Regional Traffic Volume

The air transport sector flown in RASG-AFI Region has shown gradual growth from 2015 to 2019 (for both Jet and Turboprop aircraft). **Table 1** below further breaks down the volume into IATA, Non – IATA, IOSA and Non-IOSA, registered airlines in line with graphs on accident analysis.

The total traffic volume in RASG-AFI is about two million (1.46M) movements a year, with 48 per cent jets and 52 per cent turboprop.

It is worth noting that while there is a growing trend in traffic volume, the RASG-AFI Region remains the lowest when compared with the other regions.

Table 1: Regional Traffic Growth – Jet and Turboprop Aircraft in Commercial Operations.

Sector Count (Millions)

	2015	2016	2017	2018	2019	*Total*
Jet	**0.56**	**0.56**	**0.58**	**0.68**	**0.70**	**3.07**
Jet (IATA)	0.39	0.39	0.44	0.50	0.52	**2.25**
Jet (IOSA)	0.41	0.42	0.44	0.51	0.53	**2.31**
Jet (Non-IATA)	0.17	0.17	0.14	0.17	0.18	**0.82**
Jet (Non-IOSA)	0.14	0.14	0.13	0.17	0.17	**0.76**
Turboprop	**0.61**	**0.63**	**0.65**	**0.74**	**0.76**	**3.38**
Turboprop (IATA)	0.12	0.12	0.16	0.18	0.18	**0.77**
Turboprop (IOSA)	0.14	0.16	0.16	0.18	0.18	**0.83**
Turboprop (Non-IATA)	0.48	0.51	0.49	0.56	0.58	**2.62**
Turboprop (Non-IOSA)	0.46	0.47	0.49	0.56	0.58	**2.56**
Total AFI	**1.16**	**1.19**	**1.23**	**1.41**	**1.46**	**6.45**
Total AFI (IATA)	0.51	0.51	0.60	0.68	0.71	**3.01**
	0.56	0.58	0.61	0.68	0.71	**3.13**
	0.65	0.68	0.63	0.73	0.76	**3.44**
	0.61	0.61	0.62	0.73	0.75	**3.32**

Source: IATA GADM

2.1.3 The World and Regional Air Traffic Volume and Accident Data for 2019

Table 2 below compares the air traffic volume, number of accidents, accident rates, and fatalities by the world and sub-regions for 2019. The accident rate in the RASG-AFI Region has increased from 5.16 in 2018 to 10.34 per million departures in 2019 and the number of accidents from five (5) in 2018 to ten (10) in 2019. The accident rate in the RASG-AFI Region was still the highest as compared to the other sub-regions; one factor to this comparably high rate was due to the low number of air traffic departures/volume (974.4 thousand departures) as compared to the other regions (which registered millions of departures).

Table 2: The World and Regional Air Traffic Volume and Accident Data for 2019

Sub-Region	Departures	Number of Accidents	Accident Rate (per million departures)	Number of Fatalities
RASG-AFI	974.4K	10	10.34	183
RASG-APAC	11.9 M	20	1.69	0
RASG-EUR	9.6 M	32	3.34	55
RASG-MID	1.3 M	1	0.74	0
RASG-PA	13.8 M	44	3.18	6
World	38.4M	115	3.02	239

Source: ICAO iSTARS

2.1.4 Analysis of RASG-AFI Region Accidents between 2008 & 2019

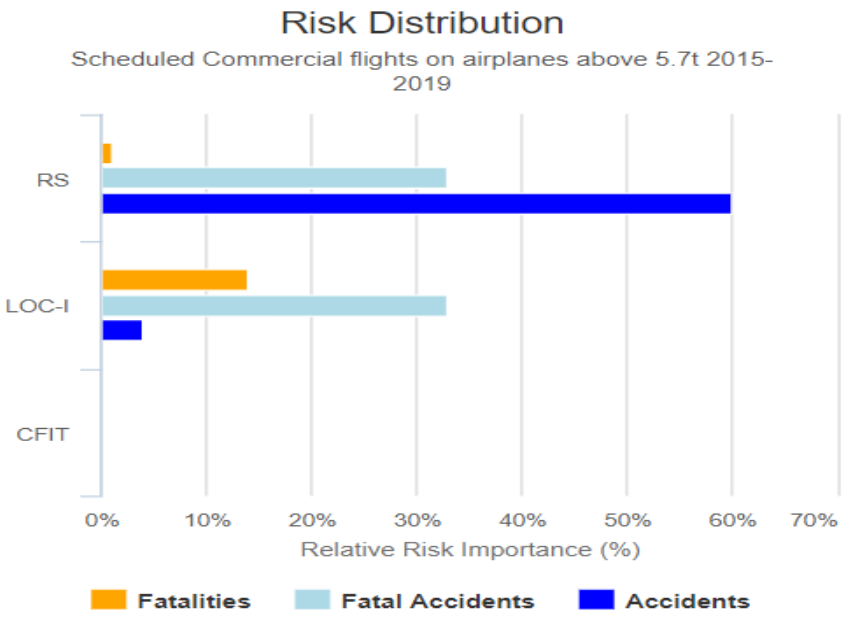
Based on analysis of accident data covering the period 2008–2019, ICAO identified three high- risk accident occurrence categories:

- Runway Excursion (RE);
- Runway Incursion (RI);
- Loss of Control In-flight (LOC-I);
- Controlled Flight into Terrain (CFIT);
- Mid-Air Collision/Aircraft Proximity (AIRPROX) Occurrences.

As indicated in **Figure 6**, these three categories represented about 64 per cent of the total number of accidents, 66 per cent of fatal accidents and 15 per cent of all fatalities between 2015 and 2019 for aircraft with maximum take-off weight (MTOW) above 5700kg engaged in scheduled commercial flights.

The Figure shows that in these high-risk categories, 60 per cent of those accidents were Runway Safety related, and the highest number of fatalities were related to Loss of Control In-flight accidents (LOC-I). This is due to the high energy involved in such accidents. No CFIT related accidents and fatalities were reported during the period 2015 – 2019.

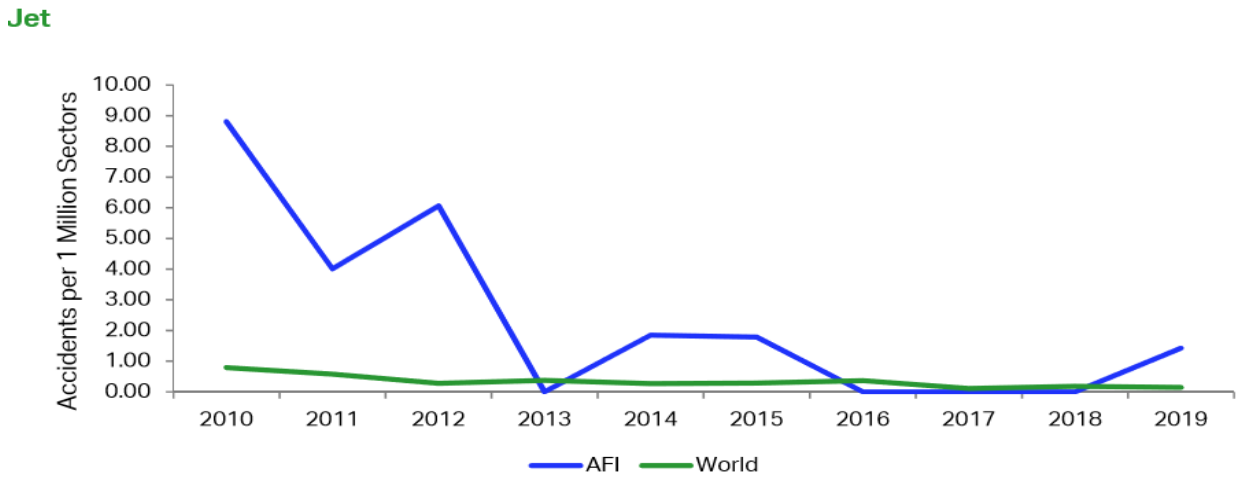
Figure 6: Accidents and Fatalities by Risk Category for the period 2015 – 2019



Source: ICAO iSTARS

Figure 6a: Jet Damage Type (Hull Loss) RASG AFI vs World (2010- 2019)

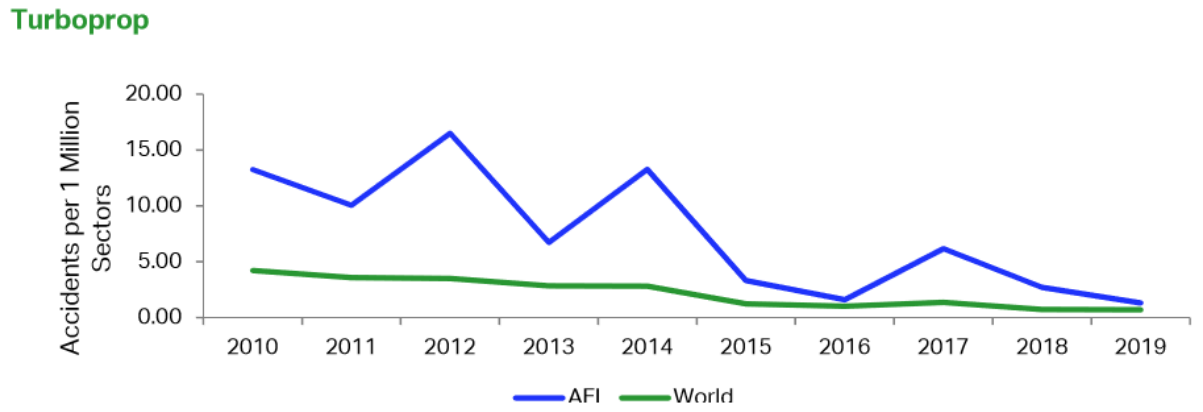
The graph below shows the accident rate according to the Jet damage type (hull loss) for RASG-AFI versus the world for the period 2010 - 2019.



Source: *IATA GADM*

Figure 6b: Turboprop Damage Type (Hull Loss) RASG-AFI vs World (2010-2019)

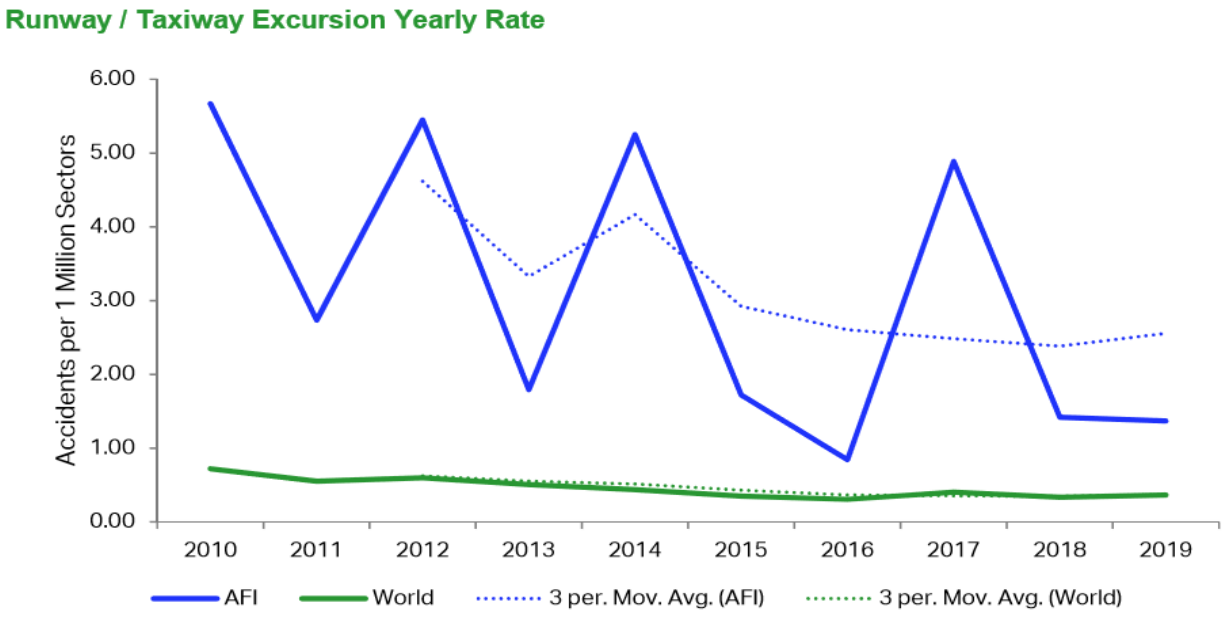
The graph below shows the accident rate according to the Turboprop damage type (hull loss) for RASG-AFI versus the world for the period 2010 - 2019.



Source: *IATA GADM*

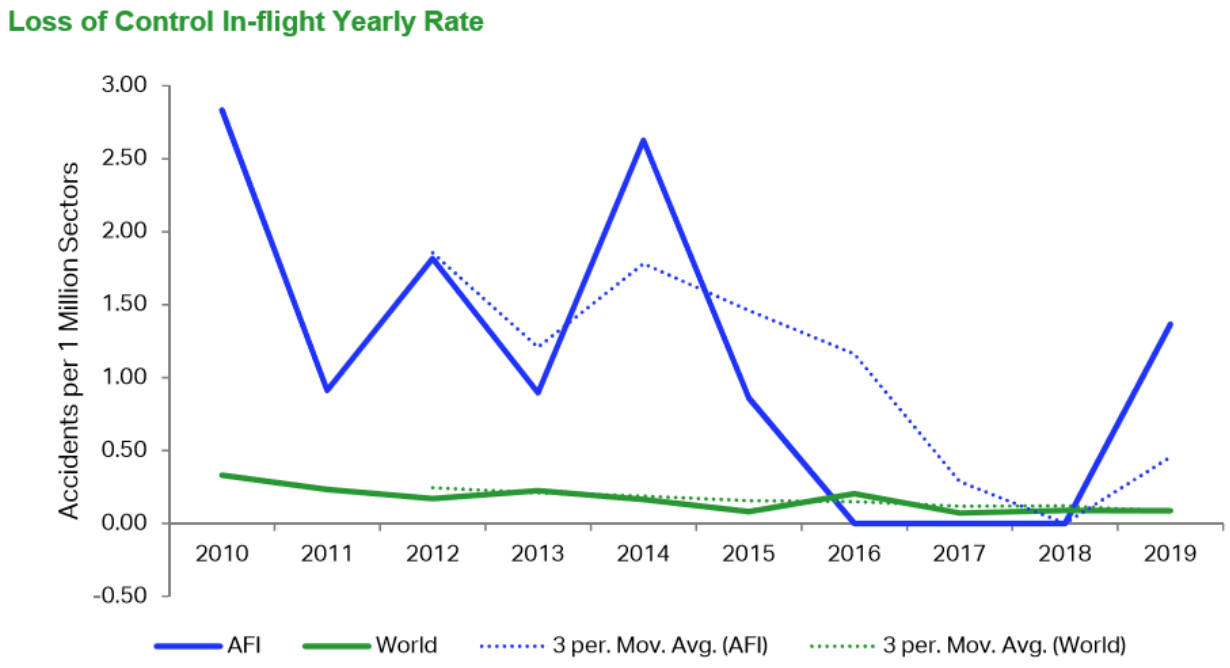
Figure 7: RASG-AFI Region High-Risk Accident Trend (2010– 2019)

Figure 7a. Runway Safety Related Accidents (Jet & Turboprop, 2010 – 2019)



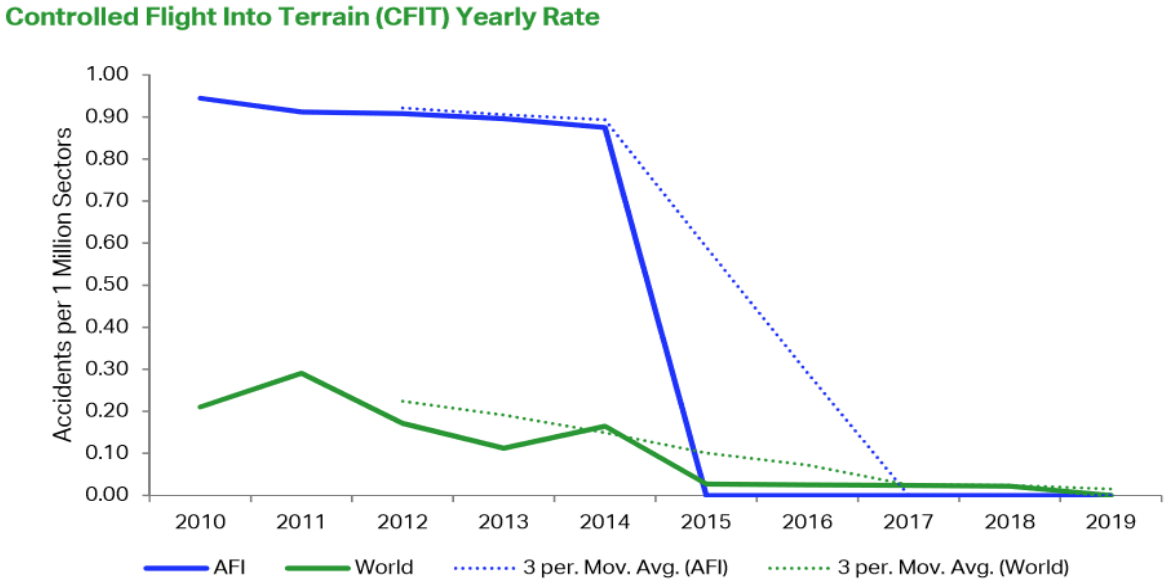
Source: IATA GADM

Figure 7b: LOC-I Accidents (Jet & Turboprop, 2010 – 2019)



Source: *IATA GADM*

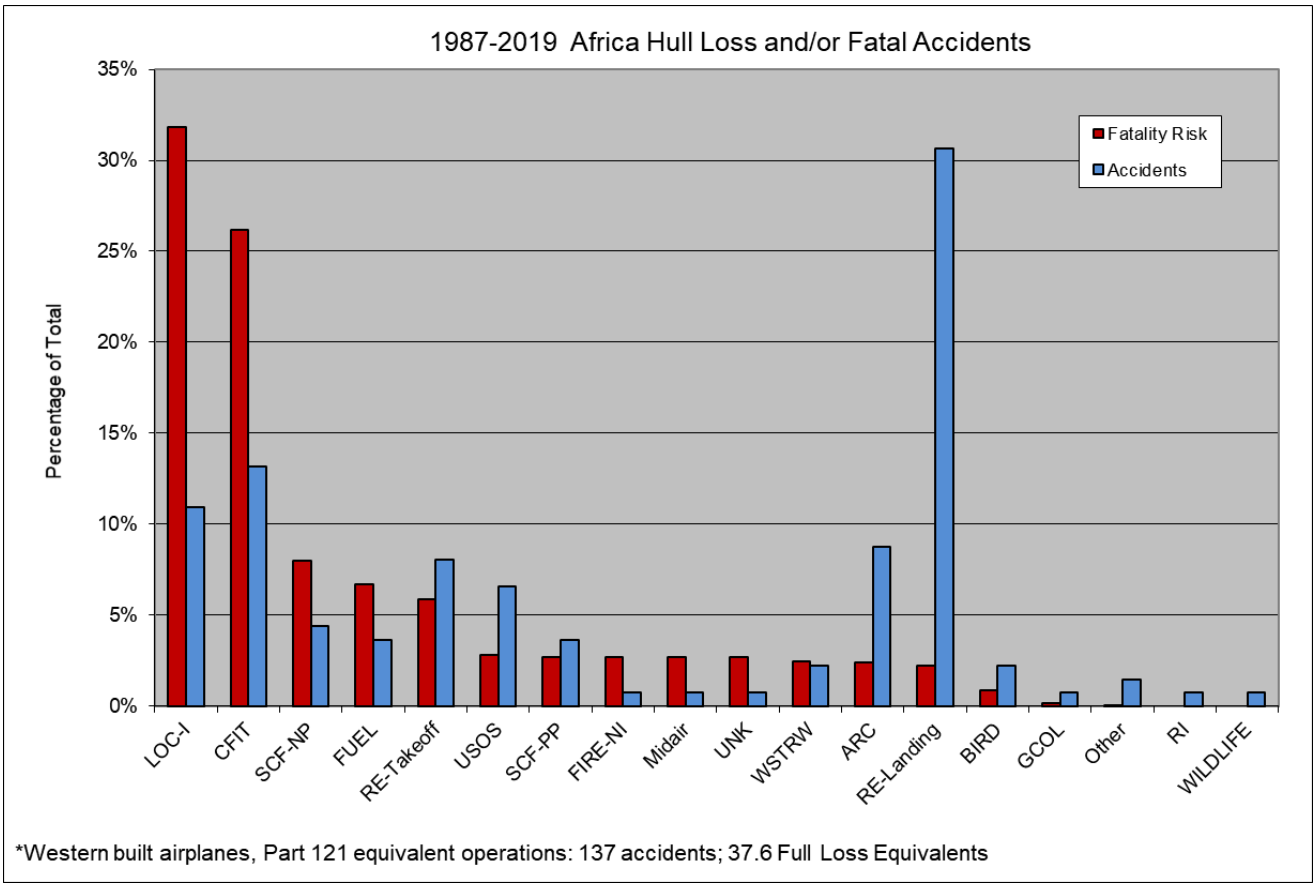
Figure 7c: CFIT Accidents (Jet & Turboprop, 2010 – 2019)



Source: IATA GADM

Figure 8: AFI Hull Loss and/or Fatality Risk for the period 1987 - 2019

The graph below shows the Fatality Risk in comparison with the Hull Loss for Western-Built commercial airplanes with maximum take-off weight of 27000kg and above. The most frequent accidents in the RASG-AFI Region for the period were: RE-Landing, CFIT and LOC-I, with LOC-I recording the highest fatality risk. The thirty-two (32) year period gives good visibility on trend as to where efforts should be directed.



Source: Boeing

2.1.5 Progress on implementation of the Abuja Safety Targets (AST), incorporating AFI Air Navigation Services Performance Indicators (ANS PIs) – 2019.

Following the adoption of the Abuja Safety Targets by the African Ministers responsible for civil aviation at a Ministerial Conference on Aviation Safety in Africa, from 16 to 20 July, 2012 at Abuja, Nigeria, through a Declaration; and the subsequent incorporation of Air Navigation Services Performance Indicators in December 2017, the African Civil Aviation Commission (AFCAC) was tasked to monitor implementation of the Abuja Safety Targets.

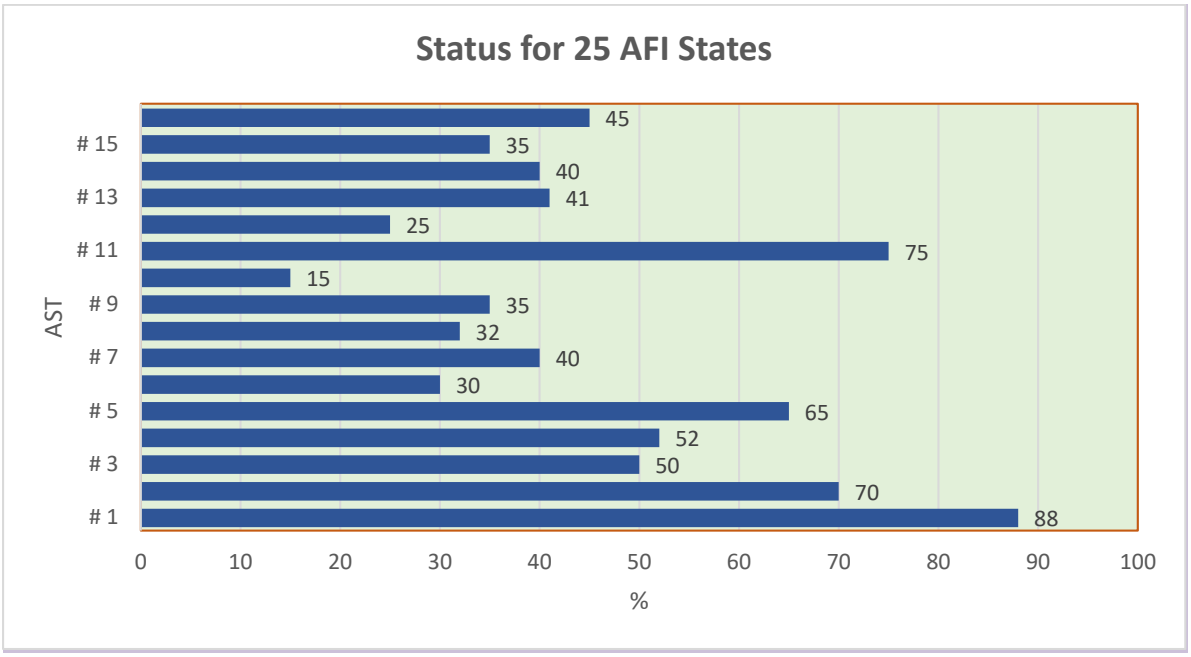
In this regard, a monitoring mechanism was developed by AFCAC to achieve this purpose. Consistent with the mechanism, questionnaires were sent to member States in August and October 2019 to provide feedback which was meant to assist AFCAC determine status of implementation of the Targets.

By December 2019, only 25 AFCAC member States had responded and consistent with Decisions of the AFI Plan Steering Committee meeting held at the AFI Aviation Week from 16-20 July 2018, AFCAC was to supplement data from States with relevant information from appropriate IATA and ICAO databases (i.e. ICAO iSTARS, USOAP CMA OLF, etc.), as shown in **Table 3**.

2.1.5.1 Highlights on Status of Implementation

The report on the status of implementation of the Abuja Safety Targets for 2019 was compiled using information provided by 25 States and supplementary data from IATA and ICAO iSTARS resulting in the observations (see **Figure 9** below).

Figure 9: Status of implementation of the Abuja Safety Targets for 2019.



The average for 25 States that responded was 47 per cent implementation of the Abuja Safety Targets, which is below the 2019 target of 60 per cent;

- The least score was AST # 10 "States to implement the transition from AIS to AIM" with 15 per cent average level of implementation;
- African States average EI as of December 2019 was 55.76 per cent while 2018 EI status was 50.64 per cent. This positive movement was a marginal increase of 5 per cent.

Further analysis of the 2019 performance resulted in the following observations:

- There were significant information gaps due to lack of automated information gathering tools available. A significant number of States did not provide the information requested;
- There was limited progress in the implementation of air navigation related ASTs. For example:
  AST # 14 – on implementation of ASBU B0 Modules – average 40 per cent;
  AST # 13 - establishment of seamless Air Navigation Services in the AFI Region – average 41 per cent;
  AST # 10 - Implement the transition from AIS to AIM – average 15 per cent;
  AST # 11 – States to implement PBN procedures for all instrument runways – average 75 per cent.

Table 3: Revised Abuja Safety Targets incorporating AFI Air Navigation Services Performance Indicators (ANS PIs); and their status of their implementation for all 48 RASG-AFI States.

Revised Abuja Safety Target	Assessments	Status of Implementation
1. Progressively reduce the African accident rate from 8.6 to 2.5 per million departures by the end of 2022, with focus on: ▪ runway related accidents and serious incidents (Runway Excursion, RE). ▪ controlled flight into terrain (CFIT) related accidents and serious incidents. ▪ Loss of Control In-flight (LOC-I) related accidents and serious incidents. ▪ Achieve and maintain zero fatalities in aircraft accidents.	The accident rate increased from 5.16 in 2018 to 10.34 in 2019. *(Source:- ICAO iSTARs)* ▪ runway related accidents and serious incidents (Runway Excursion, RE) rate increased from **1.2** in 2018 to **1.4** in 2019. ▪ CFIT related Accidents and serious Incidents rate remained at **0** from 2015 to 2019. ▪ LOC-I related accidents and serious incidents had a rate of **0.80** by end of 2018 but increased to **1.25** by 2019 **i.e. 78% increase.** *(Source: IATA)* ▪ Number of fatalities increased from **20** in 2018 to **183** in 2019 *(Source: ICAO iSTARS)*	Although there was an overall increase in accidents and fatalities in 2019 compared to the same period in 2018, more efforts need to be put in place to continue to maintain a downward trend if the target for 2022 is to be achieved. There was an upward trend in the accident rates related to RS and LOC-I; and an increase in the number of fatalities.
2. All States establish and strengthen autonomous Civil Aviation Authorities with independent regulatory	However, at least the 28 States that have attained the 60 per cent EI Target, amongst the 48 audited	Comprehensive data on status of CAAs not available.

Revised Abuja Safety Target	Assessments	Status of Implementation
oversight, sustainable sources of funding and resources to carry out effective safety oversight and regulation of the aviation industry by 2022. ▪ States that need support in areas with safety margins below zero, to use a regional safety oversight organization's or another State's ICAO-recognized functions by 2020. ▪ States effectively exercise the safety oversight functions with a positive safety margin in all areas by 2022. States to delegate certain safety oversight functions to RSOOs or other States, by the end of 2022 in areas with safety margins below zero, and as appropriate.	RASG-AFI States, are effectively autonomous.	
3. States resolve: ▪ Existing SSCs by June 2018; ▪ Newly identified SSCs within 6 months from the date of its official publication by ICAO.	From 2012 to 2019: ▪ 21 SSCs found in 14 States; ▪ 20 resolved in 13 States. ▪ 1 SSC still exist in one State. ▪ Exceeded 12-month deadline	**Target not met**
4. States abide by the timelines and provide resources for implementation of ICAO/State Plans of Action ▪ All States to have accepted ICAO Plans of Action by 2019 and ▪ abide by the timelines and provide resources for their implementation.	37 States have accepted ICAO Plans of Action and are at different stages of implementation (Source: AFI Plan)	Data collected was insufficient to determine level of implementation of the ICAO/ State Plans of Action.
5. States progressively increase the Effective Implementation (EI) percentage under the ICAO USOAP such that States with: ▪ EI < 60% attain 60% by 2020; ▪ 60% ≤ EI ≤ 70% attain 80% by 2022; 70% < EI attain 95% by 2028.	By December 2019, about 42 of the audited AFI States achieved an average EI status of 55.72 per cent. This is 3.32 per cent increase compared to 2018.	**Target not met** (EI < 60% attain 60 per cent by 2020). Number of AFI States with EI of 60 per cent and greater has increased significantly from 15 in 2014 to 32 by December 2019. The efforts of ICAO and AFCAC should be intensified to accelerate the implementation of the CAPs.

Revised Abuja Safety Target	Assessments	Status of Implementation
6. For the purposes of SSP/SMS Implementation, all States: ▪ to have a Foundation SSP established, addressing all pre-requisites; ▪ to have an Effective SSP with appropriate maturity level established; ▪ to contribute information on safety risks, including SSP SPIs, to the RASG-AFI; ▪ with a positive safety margin, and an Effective SSP, to actively engage in RASG-AFI safety risk management activities (analysis of safety risks, design and implementation of risk mitigation actions). All Service Providers to use globally harmonized SPIs as part of their SMS.	At end of 2019, 23 States initiated SSP implementation with Level 3 being the highest attained. ▪ However, none of the 48 RASG-AFI States attained Level 4 SSP implementation by December 2019; ▪ None of the States contributed information on safety risks to RASG-AFI. *(Source: ICAO iSTARS)*	**Target not met** Implementation of SSP/SMS remains a serious challenge, as no State has realized Level 4 SSP Status.
7. All International Aerodromes to be certified by 2022, • At least one international aerodrome in every State to be certified by end of 2020; • All airport operators to participate in the ICAO-recognized industry assessment programme for airports (APEX) by end of 2022; • At least one international aerodrome in every State to establish a Runway Safety Team (RST) by end of 2020.	As of 31 December 2019, 54 International Aerodromes certified out of 175 in Africa (30.85 per cent). *(Source: ICAO)* 26 States out of 54 47 airports out of 175 received an APEX review 42 aerodrome out of 175	**Target not met** (At least one international aerodrome in every State to be certified by end of 2020). From the responses to the questionnaire, aerodrome certification is still a serious challenge for AFI States. However, almost all AFI States indicated that the process of certification of international aerodromes is in progress.

Revised Abuja Safety Target	Assessments	Status of Implementation
8. Require all African airlines to obtain an IATA Operational Safety Audit (IOSA) certification: ▪ All States to establish an appropriate framework for recognition of IATA operational safety audit (IOSA) and IATA Standard Safety Assessment (ISSA) as effective safety mechanisms; All African airlines to obtain IOSA or ISSA certification, as appropriate, by the end of 2022.	From a total of 20 airlines on the IOSA Registry in 2012 there were 34 airlines on the Registry by end of December 2019. One new airline in ESAF (first ever in the Region) was also added to the ISSA Registry by December 2019. By end of 2019 only four (4) RASG-AFI States: Mozambique, Rwanda, Togo and Zimbabwe had established some form of legal instrument that recognizes IOSA. One (1) additional State in ESAF close to finalizing. *(Source: IATA)*	The Target to be further pursued. There is a need for distinction between the establishment of an appropriate framework by States for recognition of IATA operational safety audit (IOSA) and IATA Standard Safety Assessment (ISSA) as effective safety mechanisms, and IOSA registration.
Air Navigation (ANS) Target	**Status of Implementation**	**Recommendations**
9. All States to establish an effective and operational SAR organization: • Development of a National SAR Plan by end of 2018; • Conclusion of SAR Agreements/ MoUs with all neighboring States by end of 2018; • Organisation of multi-agency, multi-State and combined Regional SAR exercises to test SAR systems in place involving as many SAR units as practicable by end of 2019.	• Based on data collected as part of AFI Plan project, 25 SAR agreements have been signed between States and 35 new Draft agreements have been developed to either supersede old agreements or formalised cooperation where this has been lacking. • Eight (8) States have developed National SAR Plans and two (2) States have draft National SAR Plans in place. *(Source: ICAO)*	**Target not met.** States are progressively developing SAR Plans, though at a slow pace.
10. All States to implement the transition from AIS to AIM: • Development of a National Action Plan By end of 2018; • Implementation of the National Action Plan in accordance with the ASBU Block 0 D-ATM by end of 2020.	• 36 per cent of States have fully completed Phase 1 Consolidation; • 44 per cent have partially accomplished Phase 2 Going Digital.	**No comprehensive data available.** • There is need to establish and promote sufficient data collection tools; • Effective coordination among key stakeholders and

Revised Abuja Safety Target	Assessments	Status of Implementation
	(Source: ICAO)	appropriate regional master plans/ interventions are required to ensure effective implementation of this target.
Air Navigation (ANS) Target	**Status of Implementation**	**Recommendations**
11. All States to implement PBN procedures for all instrument runways. • 75% of Instrument Runways to have PBN procedures by end of 2020; • 100% of Instrument Runways to have PBN Procedures by end of 2025.	Available information indicated that 33 out of 48 RASG-AFI States attained target of 100 per cent PBN implementation, representing 68.75 per cent. *(Source – ICAO iSTARS)*	Although group average is high, a number of States have not initiated PBN procedures for their instrument runways. There is need for effective coordination among key stakeholders and appropriate regional interventions are required to ensure effective implementation of this target.
12. All States to progressively reduce the rate of aircraft proximity (AIRPROX) occurrences in their managed airspaces by at least 50% annually from Dec. 2017 baseline, in order to attain and maintain a level of zero (0) Airprox by correspondingly reducing errors in the following contributive factors: • Co-ordination between ATS Units (50%); • Airspace Organization and ATC Procedures (50%); • Mobile Communications (50%) • Poor Crew Discipline on board aircraft (50%)	No comprehensive data to establish level of implementation.	**Target: 2023** So far, no comprehensive data available. There is need to establish and promote sufficient data collection tools.
Air Navigation (ANS) Target	**Status of Implementation**	**Recommendations**
13. Establishment of seamless Air Navigation Services in the AFI Region: a) All States to ensure provision of harmonized Air Navigation Services in terms of flight separation, interoperability of CNS/ATM systems to reduce airspace complexity and achieve seamless operations along major air traffic flows. b) Various initiatives formulated by the Regional Economic Communities (RECs) and	Activities towards integration of the AFI Region towards seamless ANSPs is anticipated through RECs.	**Target: 2024** There is need for appropriate regional master plans/ interventions to ensure effective implementation of this target.

Revised Abuja Safety Target	Assessments	Status of Implementation
ANSPs within the AFI Region to be harmonized.		
14. All States to implement ASBU B0 Modules: • All States to develop National ASBU Plan by end of 2018.	IATA ASBU Tracker indicate that: ▪ Total percentage of RNAV GNSS APRCH was 63 per cent for ESAF and 79 per cent for WACAF; ▪ Total percentage of RNAV SID was 40 per cent for ESAF and 20 per cent for WACAF; ▪ Total percentage of RNAV STAR was 40 per cent ESAF and WACAF 46 per cent. *(Source - ICAO/ IATA)*	**Target not met** Comprehensive information on current Status of ASBU implementation in AFI Region was not available. • There is need to establish and promote sufficient data collection tools; • There is need for appropriate regional master plans/ interventions to ensure effective implementation of this target.
15. All States to develop and implement a National Plan for the reduction of CO_2 emissions due to international civil aviation: • develop a National Plan for CO_2 reduction by end of 2020; • full implementation of the National Plan by 2022.	25 States in AFI Region have developed and submitted to ICAO, National Plans for the reduction of CO_2 emissions. *(Source – ICAO)*	Although there was an increase from 18 States in 2018 to 25 States in 2019, development of National Plans needs to be fast tracked through appropriate regional initiatives.
16. All States ensure that their ANSPs effectively participate in the African ANSP Peer Review Programme by: • Joining the programme and having in place, an annual Peer Review plan of activities. • Develop and implement appropriate corrective action plans to satisfactorily address Peer Review recommendations.	Membership has continued to grow with current participation including: CANSO members (all 17 ASECNA member States, South Africa, 3 Robert FIR States, Uganda, Mozambique, Zambia, Algeria etc). *(Source – ICAO)*	More States need to be encouraged to join the ANSP Peer Review Programme in order to meet the 2022 target.

2.2 Proactive Safety Information

2.2.1 ICAO Universal Safety Oversight Audit Programme (USOAP) in RASG-AFI region

The ICAO Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) provides metrics to assess and monitor States' achievement of the objectives set out in the Global Aviation Safety Plan (GASP). The USOAP-CMA assesses the level of States' safety oversight (SSO) in eight audit areas comprising

primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG), personnel licensing (PEL), aircraft operations (OPS), airworthiness of aircraft (AIR), aircraft accident and incident investigation (AIG), air navigation services (ANS) and aerodromes (AGA). The audit areas are categorized under eight critical elements (CEs) of an SSO system (CE-1: Primary aviation legislation ; CE-2: Specific operating regulations ; CE-3: State civil aviation system and safety oversight functions; CE-4: Technical personnel qualification and training ; CE-5: Technical guidance, tools and provision of safety-critical information ; CE-6: Licensing, certification, authorization and approval obligations ; CE-7: Surveillance obligations ; CE-8:Resolution of Safety Issues). These eight categories address the entire spectrum of a State's civil aviation oversight activities; and the level of effective implementation from the USOAP CMA audits and subsequent validation activities serve as an indication of a State's capability for safety oversight.

2.2.1.1 ICAO USOAP CMA overall results

The RASG-AFI Member States (to which the ICAO ESAF and WACAF Regional Offices are accredited) have achieved an overall Effective Implementation level of 55.72 per cent (results of 46 out of 48 audited States), corresponding to an increase of 3.32 per cent on the level of Effective Implementation compared to 2018 (52.40 per cent) as shown in **Figure 10** below; which is still below the world average of 68.3%. Two States (Somalia and South Sudan) were yet to receive a USOAP CMA Activity.

Figure 10: RASG-AFI Overall EI Year-end Trend

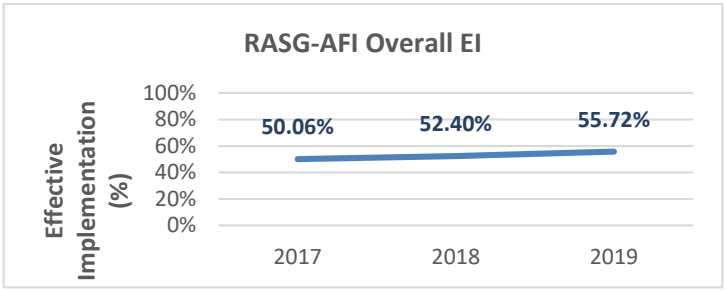
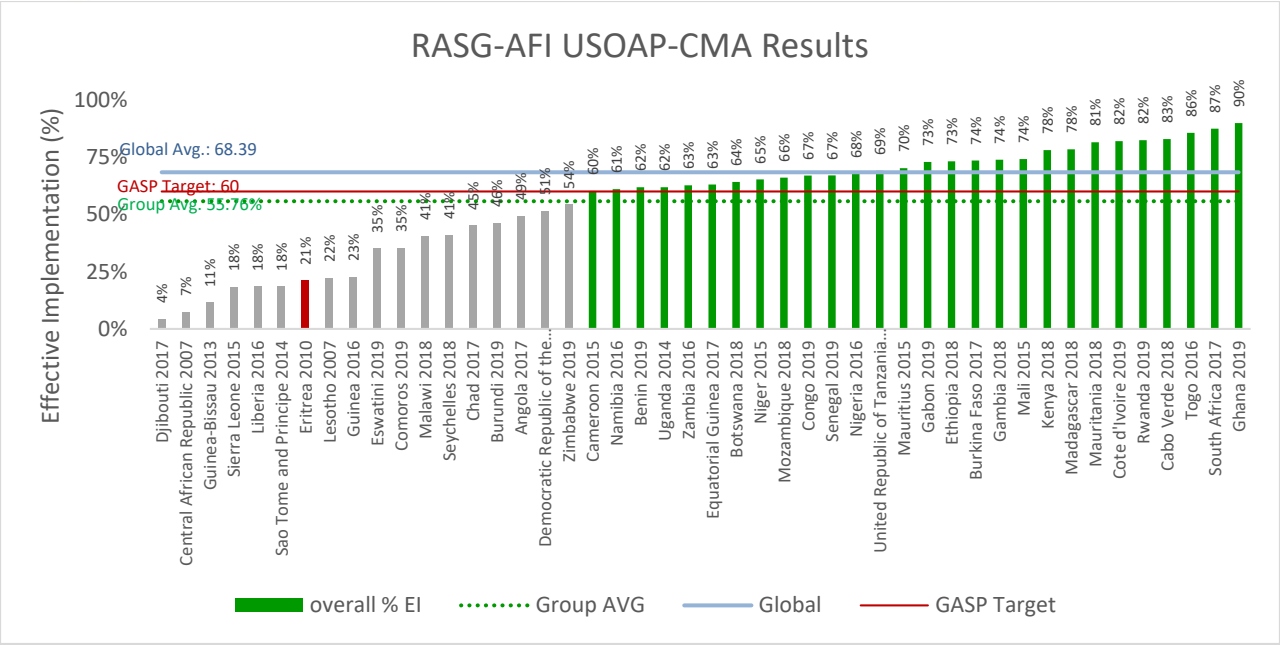


Figure 10a USOAP CMA Results of RASG-AFI States – EI at the end of 2019.

The number of the RASG-AFI States that have achieved the Abuja Safety Target of 60 per cent EI has increased from 26 in 2018 to 28 at the end of 2019. Only one Significant Safety Concern (SSC) in the area of aircraft operations (OPS) in one State (Eritrea) remained unresolved and efforts are being made to address it as soon as possible.



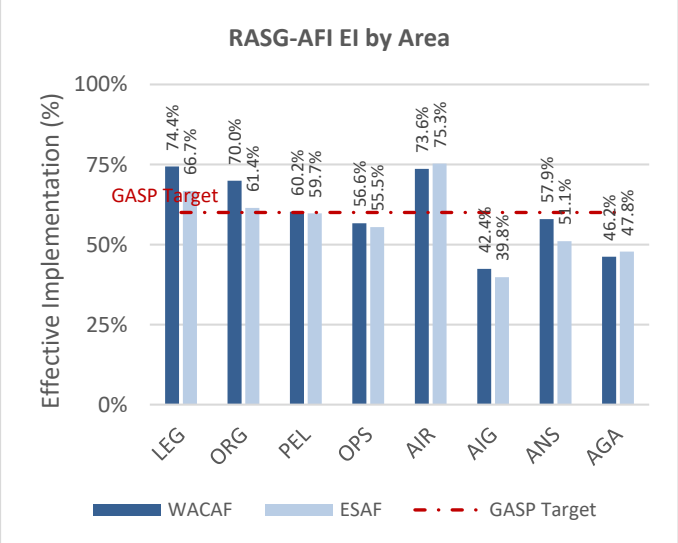
28 RASG-AFI States attained EI≥60%

1 RASG-AFI SSC State

Source: ICAO iSTARS

Figure 10b: ICAO USOAP CMA results by Audit Area

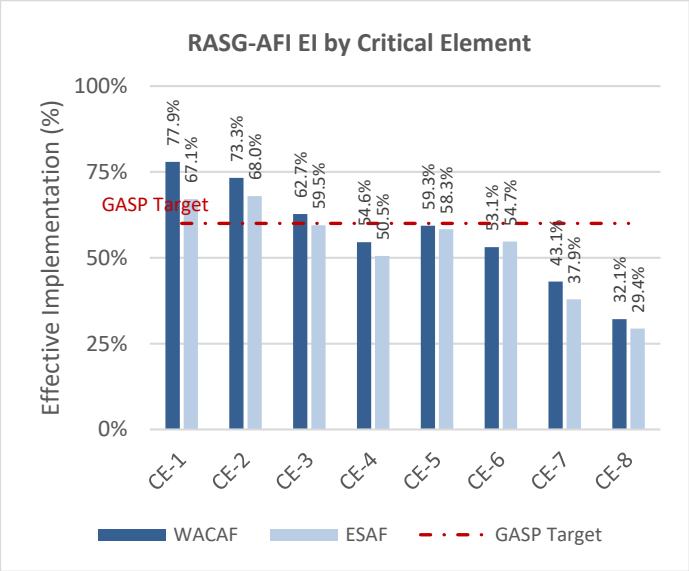
The USOAP-CMA results for RASG-AFI States in 2019 indicated an increase in the EI score above 60 per cent in four (4) audit areas compared to three (3) areas in 2018. OPS, AIG, ANS, and AGA audit areas were the lowest in terms of EI score for the region, as shown in **Figure: 10b** below.



Source of data: ICAO iSTARS

Figure 10c: ICAO USOAP CMA results by Critical Element (CE)

Regarding the implementation of the Eight Critical Elements (CE) of a State's safety oversight system, the USOAP CMA results for 2019 showed a slight increase in effective implementation above 60 per cent EI from two (2) in 2018 to three (3) in 2019 for both ESAF and WACAF Regions. Five (5) Critical Elements (CE-4, CE-5, CE-6, CE-7 and CE-8) were below the 60 per cent EI threshold.



Source: ICAO iSTARS

2.2.2 Regional Safety Initiatives

From the results of the ICAO USOAP CMA Activities, low EI scores have been registered in the areas of Aircraft Operations (OPS), Aircraft Accidents and Incidents Investigation (AIG), Air Navigation Services (ANS), and Aerodromes and Ground Aids (AGA). The Safety Support Teams of the RASG-AFI have identified these deficiencies and have developed project documents intended to improve capacities in these areas. Funding for these projects come mainly from the comprehensive implementation plan for aviation safety in Africa (AFI Plan), ICAO Safety Fund (SAFE) and partners. Various projects have been identified under the AFI Plan, project documents developed and at different levels of implementation, geared towards enhancing the oversight capacities of States and improving their overall EI scores. The ICAO Regional Office Safety Teams (ROST) conduct missions to States in a bid to assist them with implementation processes. Amongst these projects are: Fundamentals of Safety Oversight (FSO) targeting States with EI<30 per cent; Aerodrome Certification (at least one international aerodrome certified in each 20 identified States); State Safety Programme (SSP), targeting States with EI of 60 per cent and greater; Search and Rescue (development of national SAR plans); Aircraft Accidents and Incidents Investigation (establishment of AIG framework in States); and States scheduled for USOAP CMA Activities.

2.2.2.1 Regional Office Safety Team (ROST) Assistance Missions to States

In 2019, ten (10) ROST Assistance Missions were conducted in nine (9) States in the ESAF Region and 13 missions in eight (8) States in the WACAF Region. 12 RASG-AFI States received USOAP CMA activities (Audits, ICAO Coordinated Validation Missions (ICVMs), and Integrated Validation Activities (IVAs)) in the same year. Eight (8) out of the 12 States attained an overall EI score greater than 60 per cent, as shown in **Table 4** below.

Table 4: USOAP-CMA activities in RASG-AFI in 2019

State	Region	USOP-CMA Activity	Date	EI Score (%)
Burundi	ESAF	ICVM	November 2019	46.1
Comoros		Audit	December 2019	35.15
Eswatini		IVA	October 2019	35.01
Rwanda		ICVM	August 2019	82.39
United Republic of Tanzania		IVA	December 2019	69.04
Zimbabwe		Audit	August 2019	54.29
Benin	WACAF	IVA	January 2019	61.83
Congo		ICVM	June 2019	66.99
Cote d'Ivoire		Audit	October 2019	82.01
Gabon		ICVM	February 2019	72.91
Ghana		ICVM	April 2019	89.89
Senegal		Audit	February 2019	67.0

Source: ICAO iSTARS

2.2.2.2 Aerodrome Certification Project

The aerodrome certification project designed initially to support 16 African States to certify at least one of their International aerodromes was launched in August 2016, in both ESAF and WACAF Regions. At the request of some States, four (4) other airports were added to the Project during this first phase.

In accordance with the project schedule, meetings/teleconferences with Directors General of CAAs and CEO of Airports of the beneficiary States as well as supporting States were conducted to sensitize them on the importance of the project and secure the required support. Following the high level meetings, aerodrome certification workshops were conducted in Accra, Lomé and Nairobi for the benefit of Regulatory and airport personnel of both supporting and beneficiary States.

As outcomes of the workshops, beneficiary States prepared and submitted their action plans to the two ICAO Regional Offices in Dakar and Nairobi. Most States are progressing in the implementation of their plans, although some are behind schedule. Implementation assistance and progress monitoring missions were conducted by the project Team. So far, assistance provided led to the certification of 12 international Airports (Abidjan, Abuja, Bamako, Dakar, Kigali, Lagos, Libreville, Lusaka, Manzini, Maputo, Niamey and Windhoek) in eleven beneficiary States.

The current percentage of certified aerodromes in the AFI region is 29.55 per cent (See **Appendix 5**). The fact that many international aerodromes published in the eANP are neither used for international operations, nor compliant with SARPs, is negatively impacting the overall percentage of certified aerodromes. By December 2019, 45.83 per cent of AFI States developed aerodrome certification capacities.

With the progress made by some States in achieving the 60 per cent EI target, new States/airports recently joined the Project, namely Benin/Cotonou, Equatorial Guinea/Malabo, Congo/Brazzaville and Pointe Noire and Sierra Leone/Lungi (under the SAFE).

2.2.2.2.1 Airports Excellence (APEX) in Safety Programme in Africa

ICAO is implementing a project through the AFI Plan, aiming to assist African States to comply with international standards by certifying their international aerodromes. The conduct of APEX reviews is part of the certification process, under the said project. As part of this wide program, ICAO, States and safety partners such as EASA found ways to fund APEX reviews and certification activities of some airports, pending the availability of Africa Development Bank (AfDB) funds under the PASTACO Project. Details of the airports that have already received APEX reviews are provided in **Appendix 4**.

The scope of the PASTA-CO project covers the remaining ECOWAS and ECCAS member States airports that have not yet completed the APEX reviews, and/or the certification process. Some airports will be reassessed under APEX given the recent expansion of their infrastructure.

ACI, in pursuing its mission of promoting safer airport operations while contributing to international cooperation with the International Civil Aviation Organization (ICAO), aviation stakeholders and airports worldwide, developed the APEX in Safety Programme in 2012.

The APEX Programme consists of a cost recovery peer-to-peer review process only available to members of ACI. The programme is based on the Standards of Annex 14 to the Chicago Convention, as well as ACI best practices. APEX in Safety combines the mandate for regulatory compliance with the actual day-to-day operational needs of airports to maximize operational efficiency while enhancing the safety standards.

A safety review results in an assessment of the airport safety level, gap analysis and recommended solutions which provide the information needed to contribute to an action plan following the on-site visit of the airport.

Since it's inception, APEX in safety has provided assessments at over 100 airports, of which 47 were conducted in Africa (the highest percentage in the World). Through a separate agreement signed in 2012, the APEX reports are shared with ICAO, linking both organizations in the quest to enhance airport safety levels.

With the PASTACO Project, the AFI region will take a step towards the achievement of the new GASP Target 5.2, which relates to the increase in the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes, such as the Airports Council International (ACI) Airport Excellence (APEX) in Safety programme.

2.2.2.2.2 Runway Safety programme implementation

Conclusions of the APIRG/19 and RASG-AFI/2 held in Dakar, Senegal, from 28 October to 2 November 2013 urged States to establish Runway Safety Teams (RSTs) at all international aerodromes. In addition, States were encouraged to participate in Seminars / Workshops and other training activities being conducted in the field of Runway Safety.

ICAO is supporting the effective implementation of RSTs in the AFI region through the Regional Offices. A project was developed under the RASG-AFI framework, with two Runway Safety Go-Teams for WACAF and ESAF, coordinated by the ICAO Regional Offices, including Experts from IATA, IFALPA, Airlines, ACI, ASECNA, and Airports Operators. The objective of the RS Go-Team is to assist States/airports in establishing an

effective RSTs, support the implementation stage and provide technical assistance (training, assessments and gap analysis, expert advice and guidance).
Since the first Go-Team assistance in Dakar, Senegal (20 – 24 October 2014), several States made use of the Go-Teams to assist in establishing the RSTs at their aerodromes. Some States, whose aerodromes already established RSTs, requested the Go-Teams assistance to enhance their efficiency and performance through onsite training and assistance.

To date, 327 RST are registered on the ICAO Website. In the AFI region, 38 aerodromes have established operational RSTs, out of 132 contained in the AFI eANP. RASG-AFI Go-Team continues to monitor the work of the established RSTs through a regular reporting mechanism.

2.2.2.2.3 Implementation of the new Global Reporting Format for Runway Surface Condition

As the outcome of the Symposium conducted in March 2019 in Montreal, Canada on the New Format for reporting runway surface conditions, seminars were planned for regions, aiming to assist States on the implementation. This new methodology, commonly known as the Global Reporting Format (GRF), ensures a harmonized assessment and reporting of runway surface conditions and a correspondingly improved flight crew assessment of take-off and landing performance.

The following regional Seminars were conducted in 2019 in the AFI region in cooperation with FAA, DGAC France, ACI, IATA and CANSO.

- Dakar, Senegal, from 2 to 3 July 2019 with 44 participants from 12 States and five (5) International Organizations attended the Seminar.
- Accra, Ghana, from 17 to 18 October 2019 with 80 participants
- ICAO ESAF Regional Office, Nairobi, Kenya, from 14 to 15 August 2019. 83 participants from 13 States, eight (8) international organizations and one Regional Safety Organization.
- Johannesburg, South Africa, from 28 to 29 August 2019. 73 participants from eight (8) States and six (6) international organizations.

Seminars recommended to States to set up national and local plans with dedicated Teams, for the implementation of GRF and make use of existing national and regional mechanisms to support the implementation of the GRF (RSTs, Go-Teams, RSOO, …). ICAO, ACI and FAA committed to enhance their support to States.

2.2.2.3 State Safety Programme (SSP) Project

The AFI Plan State Safety Programme (SSP) Project, approved by the AFI Plan Steering Committee at its 17th meeting in May 2016, is aimed to provide support to AFI States to establish and implement their SSP in accordance with the relevant provisions of the GASP and Annex 19 to the Chicago Convention; and in line with the established regional target. The State Safety Programme (SSP) implementation project was developed to support AFI States based on the establishment of a sound safety oversight system as evidenced by the attainment of the 60 per cent EI threshold. Such States are encouraged to further promote aviation safety by embracing safety management principles with a view to proactively address emerging safety risks by using consistent, data-informed approaches to implement smarter, system-level, risk-based safety oversight. Under the project, the ICAO Regional Offices assist States establish and implement SSP through the conduct of SSP Gap Analyses, development of SSP Implementation Plans and the conduct of State self-assessments using the SSP-related Protocol Questions (PQs). In 2019, ESAF Regional Office conducted four (4) of such assistance missions to four (4) States and WACAF Regional Office conducted two (2) missions to two (2) States, resulting in improvements of the

levels of SSP implementation of the relevant States. In addition, remote guidance and assistance are provided to States through monitoring of their performance on the Online Framework (OLF).

2.2.2.4 Aircraft Accidents and Incidents Investigation (AIG) Project

The AFI Plan AIG Project is aimed to provide assistance to AFI States in the development of harmonized AIG legislation, regulations and associated procedures required for the establishment of a State aircraft accidents and incidents investigation system, in conformance with relevant ICAO documents, and encourage their adoption as an impetus to promoting regional harmonization and cooperation. The Project is also intended to provide States with the regulatory provisions and tools (MoUs) to enter on one hand, into bilateral agreement with other States, and on the other hand to offer harmonized framework and guidance for the establishment and/or adherence to regional aircraft investigation organizations (RAIOs).

In 2019, an AIG workshop was held in Cotonou, Benin, supported and facilitated by the ICAO WACAF, ESAF and EUR/NAT Regional Offices. The workshop targeted all AFI States with EI score in AIG lower than 60 per cent; updated ICAO guidance material was shared with the participants.

2.2.2.5 Upset Prevention and recovery Training (UPRT)

One of the safety initiatives being undertaken by the RASG-AFI in mitigating LOC-I related accidents and incidents is by conducting UPRT workshops in the Region and indications are that they are impacting positively on mitigating this High Risk Category of occurrence. One of such workshops was conducted in Lagos, Nigeria, in November 2019, which attracted eighty-seven (87) participants drawn from 18 AFI States (mostly from Civil Aviation Authorities). The workshop focused on: Review of ICAO SARPs, FAA and EU regulatory provisions on UPRT; Exercise on low-altitude or high-altitude situations; Aircraft certification assumptions and possible safety issues; Differences due to aircraft design and configuration; Training program development and operational data; Effects of automation and flight envelope protection; Aircraft system interactions; and Challenges in implementing UPRT. As part of the follow-up actions of the workshop,

- States and industry were invited to spearhead the implementation of the five-year LOC-I Plan of action with the support of the RASG-AFI Champion State and the two ICAO Regional Offices of RASG-AFI;
- The core expert group would update and enhance the RASG-AFI Model guidance material;
- The Regional Offices will continue to monitor and encourage States, organizations and Industry to complete the online survey through the dedicated links it has established, for adequate reporting of progress made on the area of LOC-I and UPRT;
- The Regional Offices will continue to provide guidance to the RASG-AFI Champion State on LOC-I and UPRT issues and will monitor the implementation of the related RASG-AFI five-year Plan of Action.

2.2.2.6 Performance Based Navigation (PBN) Operations Approval

Under the African Flight Procedures Programme (AFPP), African States are being assisted in implementing PBN flight procedures at their international airports and the Civil Aviation Authorities are empowered with PBN concept and products, PBN oversight, quality assurance, PANS-OPS approval (regulatory approval and operational approval). This safety initiative is intended to mitigate CFIT related accidents and serious incidents, improve flight efficiency, increase airport accessibility, and reduce CO_2 emissions due to aviation to achieve

associated environmental benefits.

The AFPP which was launched by ICAO in 2013 for an initial duration of three (3) years; is hosted by ASECNA in Dakar, Senegal. Its operations started in June 2014 in Dakar, Senegal, with the initial support of ASECNA, French DGAC and AIRBUS. The Programme has been renewed for another three (3) years from 8 February 2019. The AFPP has currently 39 members including:

Thirty-five (35) Active members (States/Organizations);

- One (1) Observer;
- Three (3) Donors.

Activities conducted under the AFPP registered the following results in the region:

- RNP Approach procedures implementation: 77 per cent;
- National PBN Implementation Plan: 79.2 per cent;
- Use of PBN in airspace design: 27 representatives from 11 States/Organizations attended a workshop held in Dakar, Senegal, in order to review their national airspace organization and be able to implement CCO/CDO trajectories;
- Reduction of CO_2 Emissions: The AFPP was involved in an ICAO/EU/ASECNA Project to implement CCO/CDO at Libreville and Ouagadougou International Airports in order to reduce CO_2 emissions; some of the procedures are published;
- 146 conventional and PBN instrument flight procedures designed or being designed;
- Capacity building for instrument flight procedures design: A full initial flight procedure design course (Conventional and PBN) conducted in Eswatini and one OJT at Dakar;
- 426 participants from States/Organizations trained in various domains;
- On-the-job training (OJT) on request: 11 designers from five (5) States trained.

2.2.2.7 Safety Management Capacity Building Workshop

In December 2019, a Safety Management Capacity Building Workshop was conducted at the ICAO WACAF Office in Dakar, Senegal, for the RASG-AFI Region. The Workshop attracted 57 participants from 23 States and five (5) Organisations; and was intended to familiarize the participants with the most recent ICAO Safety Management Updates and build an understanding and capacity for the implementation of SSPs. The target groups included, safety professionals in the State Civil Aviation Authorities involved in the implementation and maintenance of State Safety Programmes (SSPs); Industry safety professionals interested in understanding the obligations of States and the interface they have with the State through their Safety Management Systems (SMS; and ICAO staff that have a role in supporting States in implementing SSP.

2.2.2.8 AFI-Cooperative Inspectorate Scheme (AFI-CIS)

The AFI-Cooperative Inspectorate Scheme (AFI-CIS) is one of AFCAC's key outreach programmes established to assist African States improve their safety oversight capabilities. The scheme was launched in the year 2012 and it consists of a pool of qualified inspectors, selected from AFCAC member States, to carry out specific technical assistance missions.

The main objectives of the AFI CIS programme are:

- to assist AFI States to resolve safety oversight deficiencies and in particular significant safety concerns (SSCs);
- to improve effective implementation (EI) of the critical elements of AFI States' safety oversight system;

AFCAC, through the AFI-CIS Programme, supported AFI States to enhance their effective implementation of ICAO Standards and Recommended Practises (SARPs). The Scheme provides African States with an opportunity to share the limited human resources as they collaboratively promote aviation safety.

Since its inception in 2012, 28 assistance missions were conducted, which contributed to the resolution of SSCs and increase of EI of SARPs for States which benefitted from the AFI-CIS programme.

2.2.2.8.1 AFI-CIS Performance in 2019

a. AFCAC conducted seven (7) AFI CIS missions in 2019 while some of the planned missions were deferred to 2020. The table below shows States that benefitted from AFI CIS technical assistance missions.

Table 5: AFI-CIS Performance in 2019

Beneficiary States	No. of missions conducted	Funding	AFI CIS Assistance offered	ICAO Verification	EI Status (Dec 2018)	EI Status (Dec 2019)
Comoros	2	EU-ASA/ State	AIR/OPS/ AGA/ ANS	Audit (Nov 2019)	20.3%	35.15%
Sierra Leone	2	EU-ASA	AIR/ OPS	ICVM Pending	18.36%	18.36%
Burundi	2	State	AIR/OPS/ AGA	ICVM (5 to 14 Nov 2019)	26.77%	46.1%
Senegal	1	State	AIR/ OPS	Audit (11 to 21 Feb 2019)	64.26%	67%

b. The missions conducted in 2019 covered all audit areas except Aircraft Accidents and Incidents Investigations (AIG) and were based on ICAO Protocol Questions (PQs) Self-Assessment. All missions were funded partly by the EU-ASA project.

c. Three (3) of the beneficiary States (i.e. Comoros, Burundi and Senegal) received an ICAO USOAP CMA Activity in 2019, resulting in a combined EI increase of 37 per cent. As shown in the table above, Comoros increased its EI status from 20.3 per cent in 2018 to 35.15 per cent in 2019 and Burundi also increased its EI status from 26.77 per cent to 46.1 per cent. AFI CIS technical assistance missions to Sierra Leone will continue through 2020 until an ICVM or full audit is conducted.

d. AFCAC's Triennium Strategic Plan 2019 – 2021 called for an increase of the level of assistance to African States. To fulfil this requirement, AFCAC requested States and RSOOs to designate more AFI CIS inspectors and as a result, 107 candidates applied. AFCAC, in collaboration with ICAO ESAF, MID, EUR/NAT and WACAF Regional Offices established an inspector selection process which is to be used as a basis to shortlist candidates who meet the minimum requirements for AFI CIS inspectors.

e. AFCAC undertook measures to implement the Action Plan adopted by the 2nd Coordination meeting between ICAO, AFCAC, Regional Safety Oversights Organizations (RSOOs) and Partners held in Dakar, Senegal, from 18-19 February 2019, including the creation of the Platform of African RSOOs.

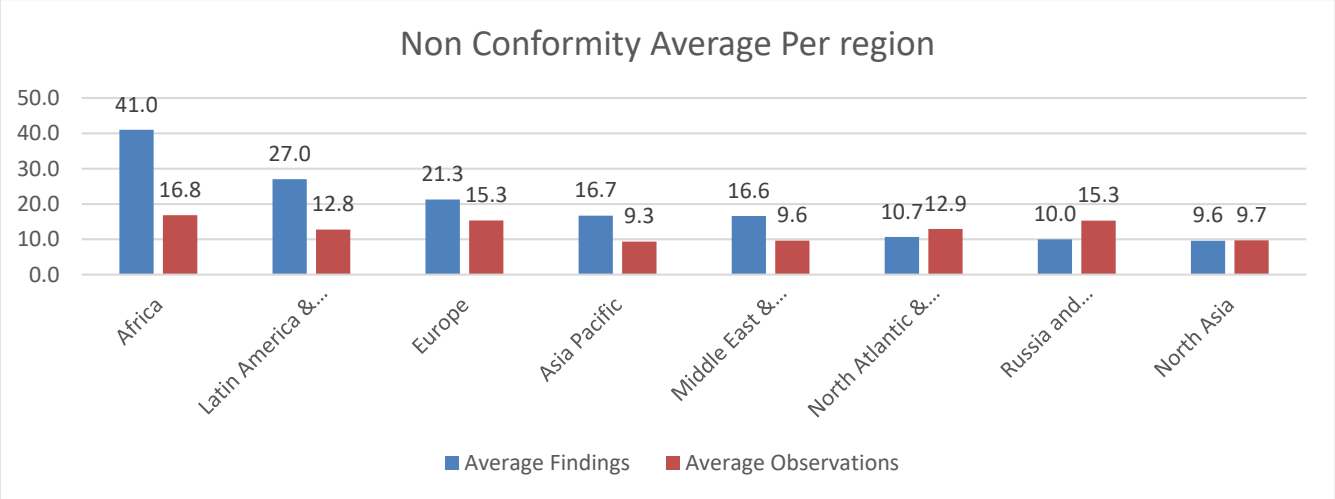
f. The AFI CIS induction programme for new CIS inspectors was initiated and it will be executed immediately after restrictions imposed due to COVID-19 are lifted. At least 40 additional inspectors are to be recruited to reinforce the pool and expand the roster of AFI-CIS inspectors.

2.2.3 IATA Operational Safety Audits (IOSA)

The IATA Operational Safety Audit (IOSA) is the benchmark for global safety management in airlines and is an internationally recognized and accepted evaluation system designed to assess the operational management and control systems of an airline.

IOSA scope covers eight (8) areas which include: Organization and Management (ORG), Maintenance (MNT), Cargo (CGO), Security (SEC), Flight Operations (FLT), Dispatch (DSP), Cabin Safety (CAB) and Ground Handling Operations (GRH). The analysis of IOSA audit results in the graph below shows the trend in audit findings as well as observations for AFI versus other regions and the world average.

Figure 11: Trend in IOSA Findings and Observations per Region

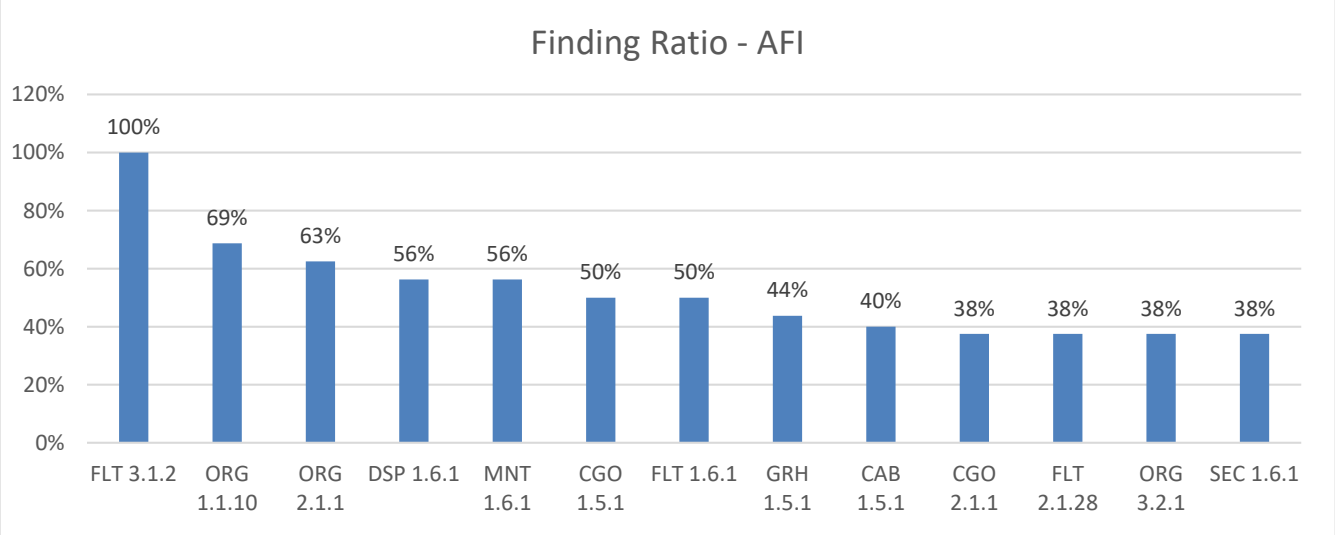


The above pattern in findings and observations relates to IOSA audits conducted during the year 2019.

Figure 12: RASG-AFI Region Trend in IOSA Top Findings per Audit Area

The following graph shows the AFI trend in 2019 IOSA top findings per audit area where issues in Flight Operations, Organisation and Management featured the most, followed by Dispatch and Maintenance. The

pattern remains unique for each region.



Source: IATA

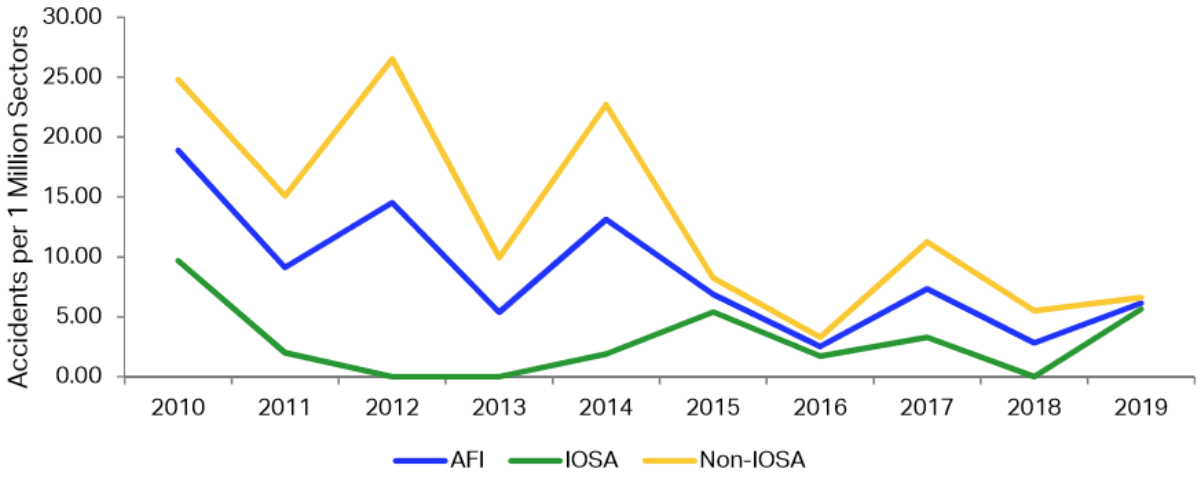
Key:
FLT 3.1.2= Use of Common Language- Cockpit; **ORG 1.1.10.** =SMS Implementation;
ORG 2.1.1=Documentation management & control; **DSP 1.6.1**=Dispatch Documentation System**;**
MNT 1.6.1 = Maintenance Documentation System; **CGO 1.5.1** =Cargo Documentation System Control;
FLT 1.6.1= Flight Operations Documentation System; **GRH 1.5.1 =**Ground Handling Documentation System**;**
CAB 1.5.1= Documentation System- Cabin Operations **CGO 2.1.1=** Program for Training Cargo Ops Personnel**; FLT 2.1.28**=Continual Improvement -Flight Crew Training & Evaluation;
ORG 3.2.1 =Operational Safety Performance/Safety Assurance; **SEC 1.6.1**=Security Documentation System; .

Following the revision of the Abuja Safety Targets in December 2017, all AFI States are required to establish an appropriate framework for recognition of the IATA Operational Safety Audit (IOSA) and IATA Standard Safety Assessment (ISSA) as effective safety mechanisms; all African Airlines to obtain IOSA/ISSA certification, as appropriate, by the end of 2022.

By end of 2019 only four (4) RASG-AFI States: Mozambique, Rwanda, Togo and Zimbabwe had established some form of legal instrument that recognizes IOSA while a couple others were in the process of finalizing.

Figure 13: Accident Rate for IOSA versus Non-IOSA Operators in RASG-AFI Region

The graph below represents the rate of occurrence of all accidents over the period 2010-2019, per million flight sectors for RASG-AFI registered operators (blue) versus RASG-AFI IOSA- registered operators (green) and RASG-AFI non-IOSA-registered operators (yellow). From the trend, the IOSA certified operators have outperformed non-IOSA certified carriers in the Region.



Source: IATA GADM

Note: The above graph represents statistics for both Jet and Turboprop operations.

2.2.4 IATA Safety Audit for Ground Operations (ISAGO)

The ISAGO program in 2019 had another successful year with the continuation under the new operational audit model (introduced in September 2017) as renewal audits became due. The high rate of findings experienced in 2018 resulting from the new audits also continued, averaging 19 per audit overall. For RASG-AFI the average number was 28 findings.

Region	Total Audits	Total Findings
Africa	27	762

This picture again reflects the program establishing better management and standardization of ground operations, including the implementation of a safety management system that replicates that required of an air and aerodrome operator. The GSP has to rectify all findings to receive ISAGO registration, and it has to do so within six months or before its current registration expires. The GSPs come out of an ISAGO audit with much stronger management and oversight of its ground operations.

The new audit reports (available as individual corporate (Headquarters) and airport operations (Station) reports) number more than 450 and are made available to airlines that subscribe to an ISAGO membership. The audit reports and other GSP information are hosted on the ISAGO Registry, an online interactive and graphical interface that can be customized for an airline.

The ISAGO program will undergo another significant development in the near future to align fully with Doc 10121, the ICAO Manual on Ground Handling that was published in December 2019. ISAGO will provide detailed

assessments against the ICAO provisions to assist air and aerodrome operators and regulators in demonstrating compliance of the audited ground operations with the provisions.

2.3 Predictive Safety Information

This section contains predictive safety information which includes, Flight Operations Quality Analysis/Flight Data Analysis (FOQA/FDA), States' Safety Programme (SSP); and Safety Management Systems (SMS) implemented by the industry, aviation products and services providers.

The FOQA/FDA information and the Flight Data eXchange (FDX) systems established by IATA and other aviation partners need to be fully utilized by the airlines and other stakeholders in the RASG-AFI, by way of concluding Memoranda of Understanding (MOU) and providing relevant information/data on a regular basis. With the establishment of such systems, precursors could be identified, particularly for the safety high risk categories of occurrences (RS, LOC-I, CFIT, Mid-Air Collision (MAC)/ Aircraft Proximity (AIRPROX), etc.) and trends appropriately monitored and analyzed. The need for a mature data sharing culture is key to any successful predictive safety information analysis in RASG-AFI.

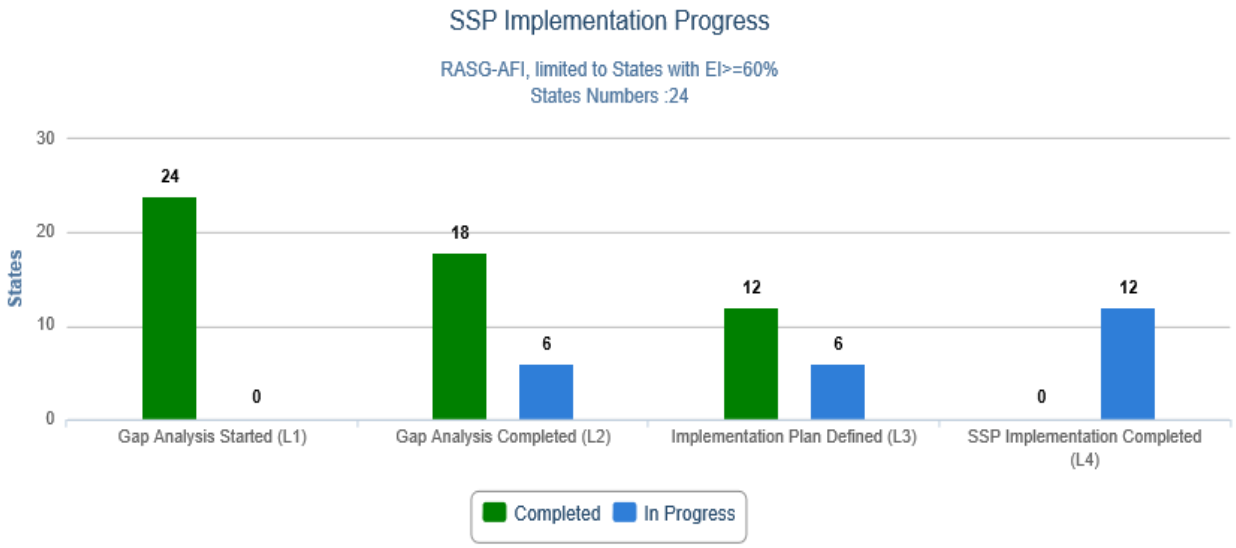
One of the revised Abuja Safety Targets requires all States to have a Foundation SSP established, addressing all pre-requisites by end of 2022:

- to have an Effective SSP with appropriate maturity level established;
- to contribute information on safety risks, including SSP SPIs, to the RASG-AFI;
- with an Effective SSP, to actively engage in RASG-AFI safety risk management activities (analysis of safety risks, design and implementation of risk mitigation actions); and
- ensure that all Service Providers implement a Safety Management System (SMS) by end of 2022, and that they use globally harmonized SPIs as part of their SMS.

Although some degree of progress has been registered in this respect, availability of a reliable predictive safety information within the RASG-AFI region continues to pose challenges.

SSP is a framework that allows the State safety oversight authority and service providers to interact more effectively in the resolution of safety concerns. The SSP statistics release high level information about each Gap Analysis project. SSP implementation project has been measured for each State using a simple milestone as per the entered data.

Figure 14: RASG-AFI States' Safety Programme Implementation (SSP) Progress.



ICAO measures SSP implementation in levels as follows:

- Level 0: States not having started a GAP analysis
- Level 1: States having started a GAP analysis
- Level 2: States having reviewed all the GAP analysis questions
- Level 3: States having defined an action plan for all non implemented questions
- Level 4: States having closed all actions and fully implementated their SSPs

Source: ICAO iSTARS

Table 6: RASG-AFI States that have initiated the implementation of SSP.

By 31 December 2019, none of the 48 RASG-AFI States attained Level 4 of SSP implementation. However, 18 States completed the Gap-analysis (L1), and 12 States defined an action plan (L2).

	Code	State Name	Progress	Level (Up)
1.	BWA	Botswana	Gap Analysis Completed	**L2 / 95.2% L3**
2.	BFA	Burkina Faso	Gap Analysis Completed	**L2 / 81% L3**
3.	CPV	Cabo Verde	Gap Analysis Completed	**L2 / 97.6% L3**
4.	COG	Congo	Gap Analysis Started	**L1 / 28.6% L2**
5.	CIV	Cote d'Ivoire	Gap Analysis Completed	**L2 / 95.2% L3**
6.	ETH	Ethiopia	Gap Analysis Completed	**L2 / 92.9% L3**
7.	GAB	Gabon	Implementation Plan Defined	**L3 / 16.7% L4**
8.	GMB	Gambia	Implementation Plan Defined	**L3 / 19% L4**
9.	GHA	Ghana	Gap Analysis Completed	**L2 / 97.6% L3**
10.	KEN	Kenya	Gap Analysis Started	**L1 / 07.1% L2**
11.	MDG	Madagascar	Implementation Plan Defined	**L3 / 52.4% L4**
12.	MLI	Mali	Implementation Plan Defined	**L3 / 21.4% L4**
13.	MRT	Mauritania	Implementation Plan Defined	**L3 / 23.8% L4**
14.	MUS	Mauritius	Implementation Plan Defined	**L3 / 47.6% L4**
15.	NAM	Namibia	Implementation Plan Defined	**L3 / 19% L4**
16.	NER	Niger	Gap Analysis Started	**L1 / 50% L2**
17.	NGA	Nigeria	Implementation Plan Defined	**L3 / 40.5% L4**
18.	RWA	Rwanda	Implementation Plan Defined	**L3 / 81% L4**
19.	SEN	Senegal	Gap Analysis Started	**L1 / 57.1% L2**
20.	ZAF	South Africa	Implementation Plan Defined	**L3 / 90.5% L4**
21.	TGO	Togo	Implementation Plan Defined	**L3 / 35.7% L4**
22.	UGA	Uganda	Gap Analysis Started	**L1 / 47.6% L2**
23.	TZA	United Republic of Tanzania	Implementation Plan Defined	**L3 / 35.7% L4**
24.	ZMB	Zambia	Gap Analysis Started	**L1 / 54.8% L2**

Source: ICAO iSTARS

2.3.1 Progress on Predictive Information Approach

IOSA registered operators have implemented Flight Data Analysis/Monitoring system as a program requirement. Some Non-IOSA operators are yet to implement Flight Data Analysis (FDA)/Flight Data Monitoring (FDM)/Flight Operation Quality Analysis (FOQA). Even in some cases where it has been implemented, its effectiveness needs to be improved further.

2.4 AFI ATS Incidents Analysis Group (AIAG)/Air Navigation Infrastructure Safety

The AFI ATS Incident Analysis Group (AIAG) Meeting which has been convened and hosted by IATA every year since 2003 works on the following terms of reference:

The ATS Incident Analysis Group provides a forum to various States/ANSPs and international organizations including ICAO, IATA, IFALPA, AFRAA, IFATCA and OEMs to review reported incidents in the region and formulate recommendations to prevent the occurrence of similar incidents in the RASG-AFI region.

Mandate: the mandate of AIAG is to review on an annual basis all the ATS incident reports available to the Group from any source, with a view to identifying causes, trends, and remedial actions that may prevent re-occurrence.

Composition: At the Core of the AIAG are IATA, ICAO, IFALPA and IFATCA. Attendance to the Group is open to all Air Navigation Service Providers in the RASG-AFI Region. Other Stakeholders can be invited to attend.

Secretariat: IATA Safety and Flight Operations for Africa provides the secretariat support to the Group. This will include the updating and maintaining of the database, compilation of ATS incident reports, preparation of annual meetings, preparation and distribution of meeting reports.

Reporting: Reports of AIAG are disseminated to all participants, and any other relevant stakeholder for appropriate actions and information.

Tasks:

a. Assess incidents by type, i.e., AIRPROX, procedure, facility as per ICAO definition, and establish degree of risk to the extent practicable.

b. Identify primary and contributory causes and recommend appropriate corrective actions thereto.

c. In the context of (b) above, develop submissions to be made to ICAO regional planning Groups, member airlines and other airspace users, States or other ATS Providers concerned with a view to addressing underlying causes or major trends.

d. Determine the extent to which IFBP was instrumental in identifying and/or solving conflicts and make appropriate recommendations that may enhance the effectiveness of the procedure.

e. Determine the extent to which TCAS/ACAS was instrumental in identifying and/or solving conflicts and make appropriate recommendations that may enhance the effectiveness of the procedure.

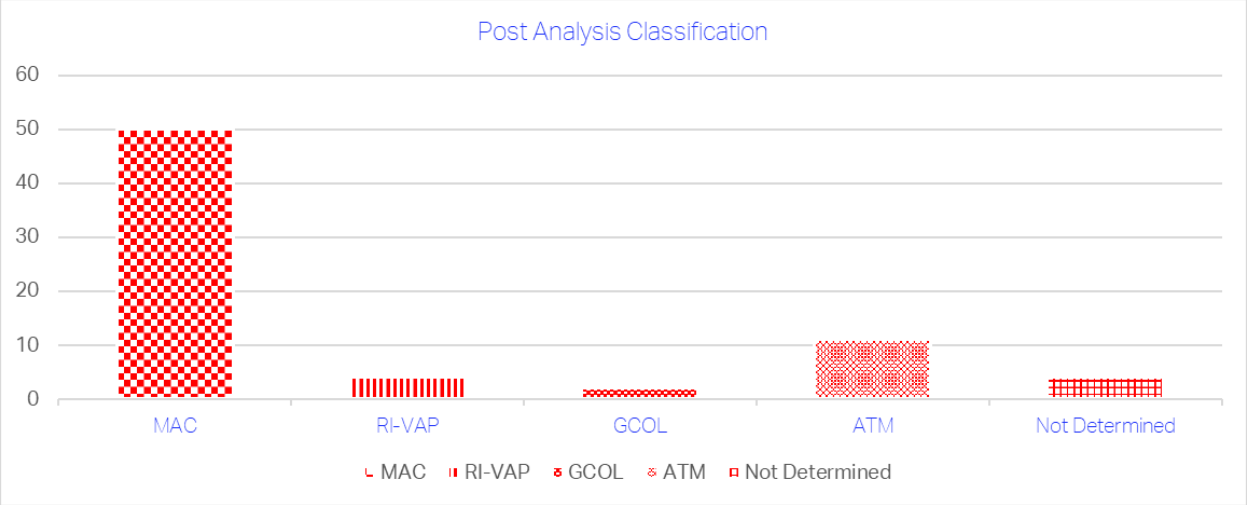
f. Develop statistical analyses highlighting trends, inter alia by time period, by cause and by FIR/ATS Unit.

2.4.1 Seventeenth Meeting of AIAG (AIAG/17 - March 11 to 12, 2020)

The AIAG/17 meeting took place on the 11th and 12th of March 2020 at the Sandton Convention Centre in Sandton, South Africa. Despite the COVID travel restrictions the meeting was attended by 65 participants

from nine (9) International organizations, three (3) airlines/airspace users and 19 AFI CAAs/ANSPs. The AIAG/17 meeting analyzed 71 Undesired Condition Reports (UCRs) and found that 79 per cent of the UCRs analyzed were confirmed to be Loss of Separation (LoS) events.

Figure 15: Distribution of UCRs by Category after Analysis
The graph below shows the distribution by category after analysis of the 71 UCRs by AIAG.



MAC: AIRPROX/ ACAS/TCAS alerts / loss of separation / near mid-air collisions.

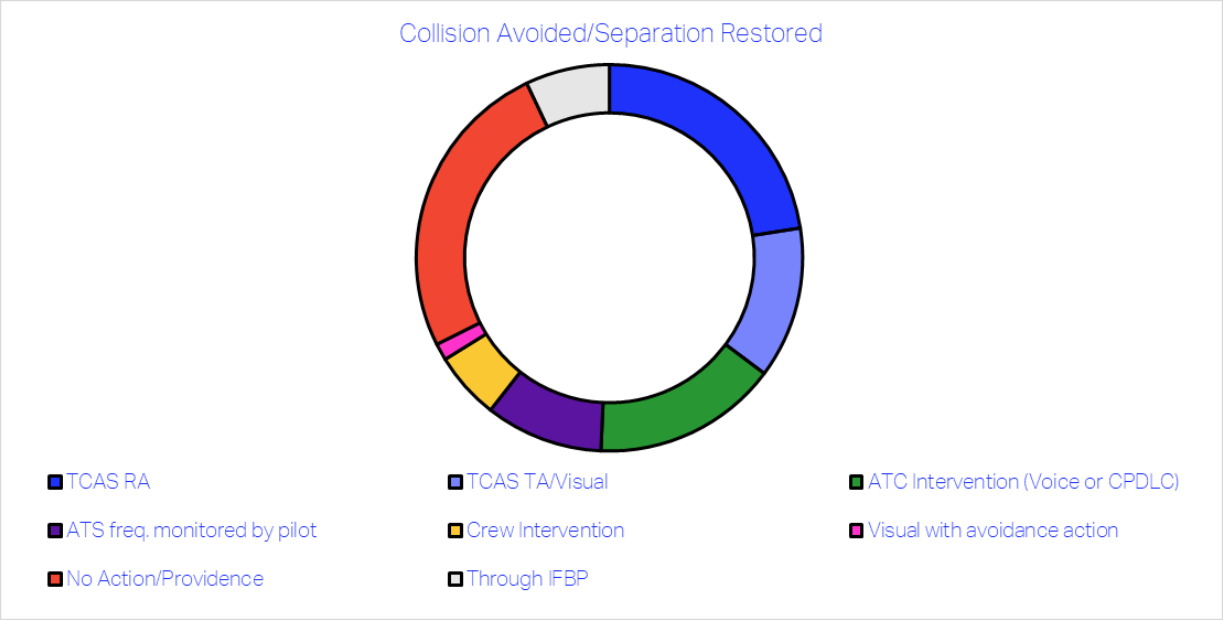
RI-VAP: Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take-off of aircraft.

GCOL: Collision while taxiing to/from the runway in use.

ATM: Air Traffic Management / Communication, Navigation and Surveillance (ATM/CNS) services.

Figure 16: Means through which Separation Minima was timely restored

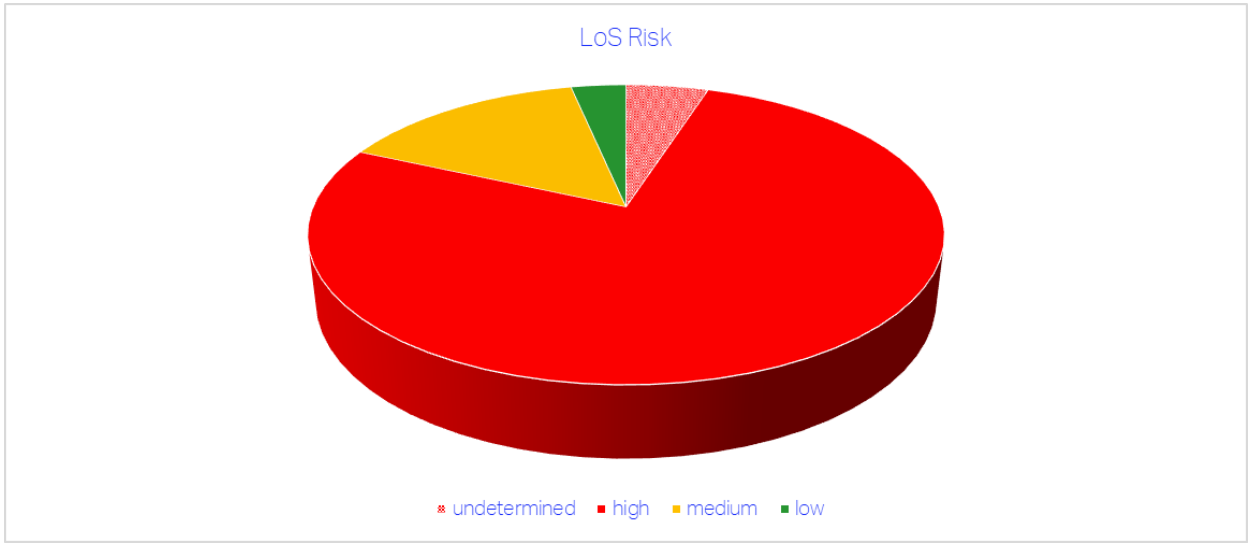
There is still an extremely heavy reliance on onboard technology (TCAS/ACAS) and procedures for the restoration of separation and/or collision avoidance in the RASG-AFI region. What also remains a great concern is the high number of collisions avoided through no action by ATM and/or crew – "providence".



Source: IATA

Figure 17: Threat Severity Levels

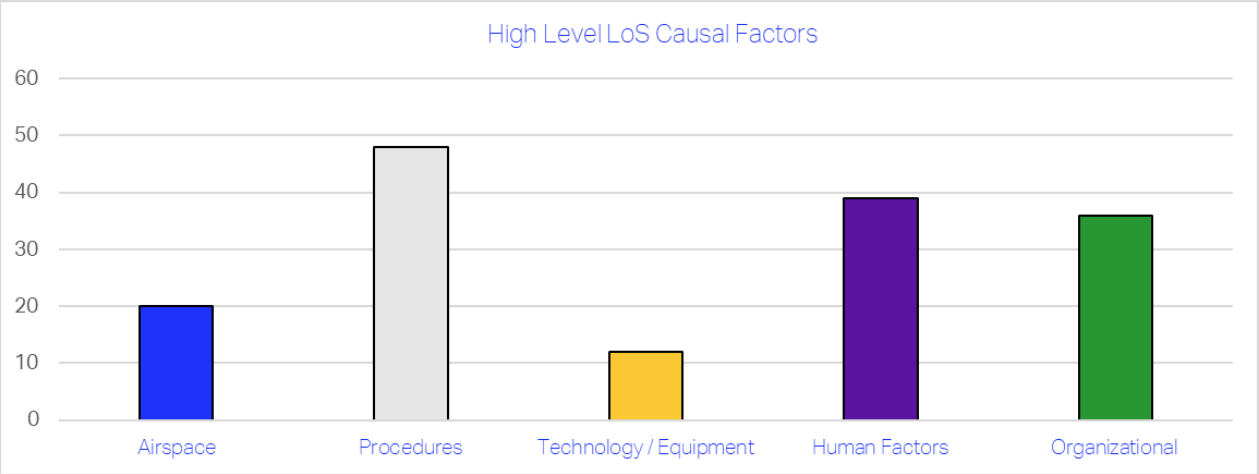
For those UCRs classified as AIRPROX, the threat levels of severity were as indicated in the graph below with "High" being most predominant.



Source: IATA

Figure 18: UCRs within RASG AFI – High Level Causal Factors

Of the high-level causal factor categories, Procedures is the main contributor, with Technology/Equipment being the least.

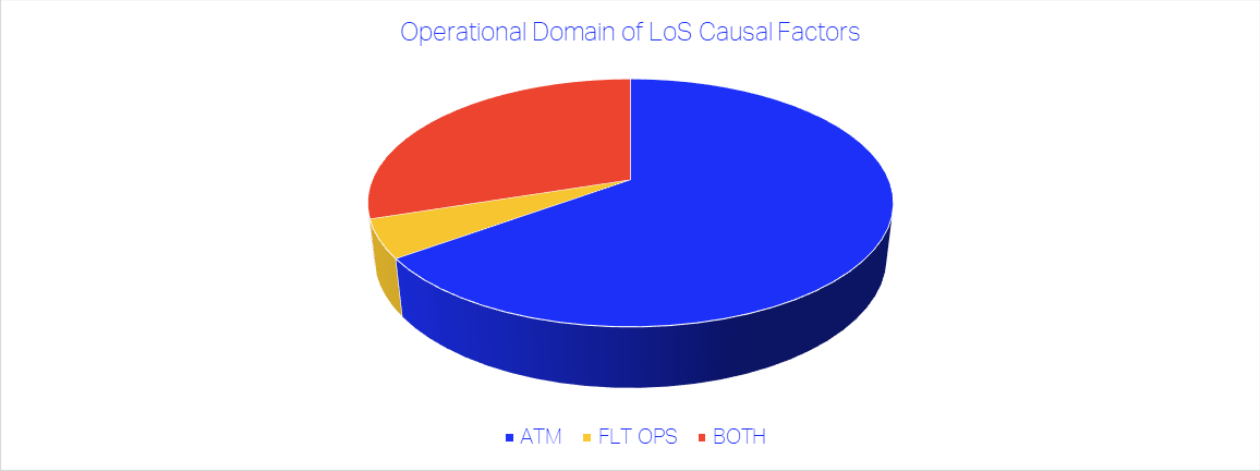


Source: IATA

Figure 19: Operational Domain of Loss of Separation (LoS) Causal Factors

The graph below shows the percentage of the party responsible for the cause of occurrence.

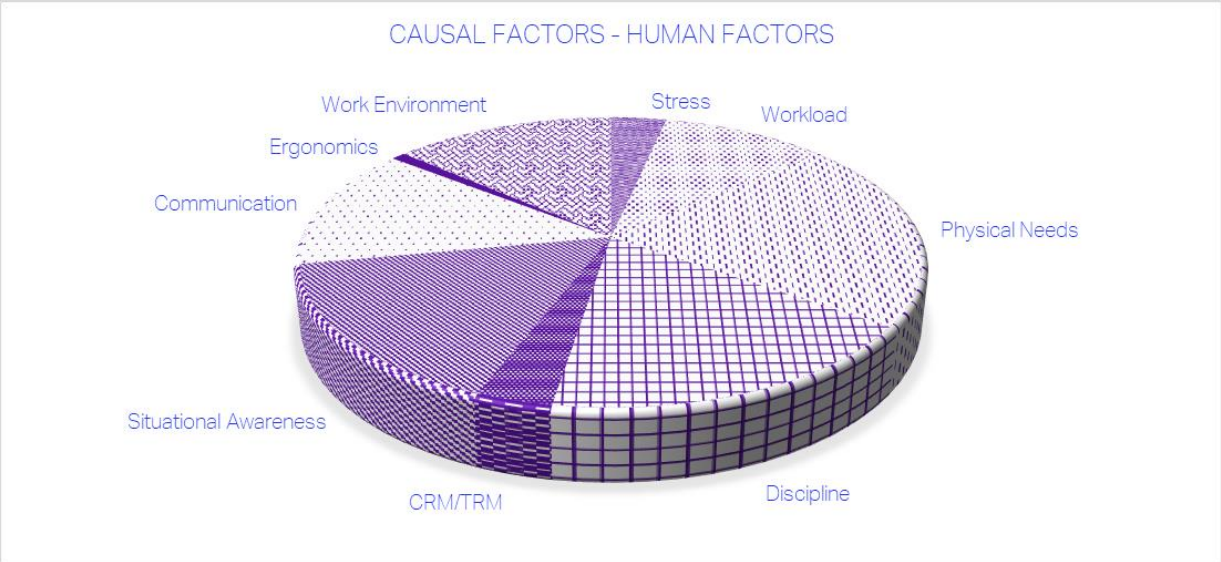
Newly introduced AIAG methodology used in the AIAG/17 determined that the minority (5 per cent) of Causal factors to LoS events could be found in the Flight Operations environment alone; whilst 65 per cent could be found in ATM environment alone.



Source: IATA

Figure 20: Causal Factors – Human Factors

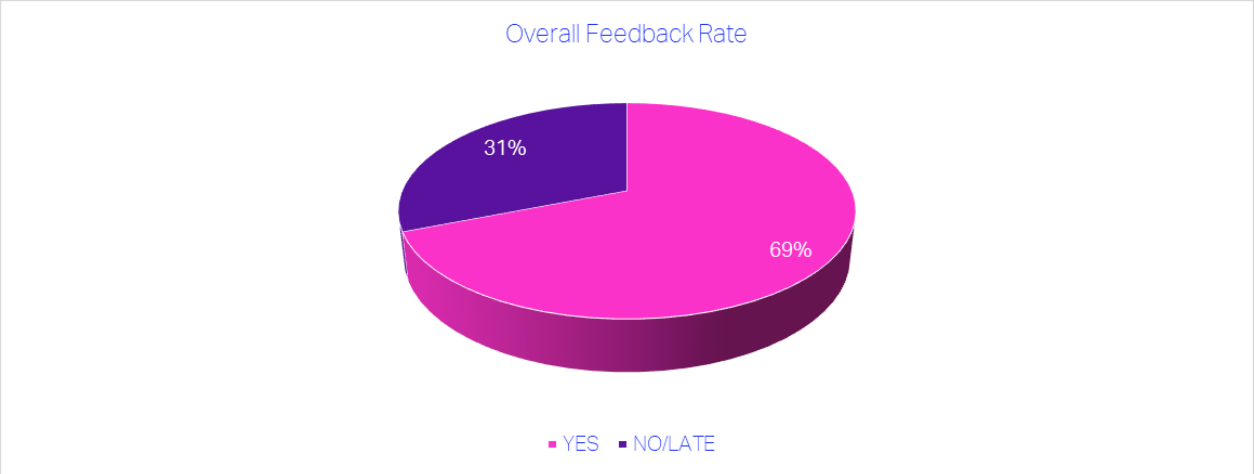
The newly introduced Human Factors (causal factors) is wide and varied in nature. It is a relatively new area of consideration in event investigation for the region and still requires further development. The most common contributors are discipline and situational awareness, not forgetting that all these factors are closely linked and have impact across the high-level causes.



Source: IATA

Figure 21: UCR Feedback Rate

This graph shows percentage of timely feedback (69 per cent) and late or no feedback (31 per cent) for all the handled UCRs.



Source: IATA

3.0 Conclusions and Recommendations

3.1 Conclusions

Based on the analyses of the available data for 2019, the following conclusions are drawn:

- Achievements registered:
  - "Zero SSC" status in the WACAF Region maintained;
  - The status of zero CFIT related accidents maintained.
  - Regional Offices Safety Teams (ROST) conducted assistance missions to States during which the teams provided guidance and assistance, resulting in increases in the overall EI scores of 11 out of the 12 States that received USOAP CMA Activities.
  - The USOAP audit results of the 46 audited States within the RASG-AFI region showed an improvement in the number of States with EI ≥ 60 per cent from 26 in 2018 to 28 at the end of 2019.
  - The average USOAP Overall EI for States in the RASG-AFI region has improved from 52.4 per cent at the end of 2018 to 55.76 per cent at the end of 2019, which is below the world average of 68.55 per cent.

- Challenges encountered:
  - Runway Excursion (RE) related accidents remained the most predominant High Risk Category of Occurrence and should continue to be a main priority for Safety Enhancement Initiatives (SEI) in the RASG-AFI Region;
  - Increase in LOC-I related accidents (from zero in 2018 to one in 2019);
  - Although zero CFIT related accident has been maintained since 2015, it continues to be under the High Risk Category of Occurrence;
  - Resolution of the remaining SSC in Eritrea impeded by weak political commitment and non-collaboration;
  - Constraints in conducting USOAP CMA on-site Activities and assistance missions (ROST, RS Go-Team) to some deserving States due to unsafe political situations (e.g. Somalia, South Sudan);
  - Establishment of an appropriate framework by States for recognition of IOSA and ISSA as effective safety mechanisms; and airlines to obtain registration as appropriate;
  - Although this report has captured predictive safety information to some extent, the low level of aviation activities (few contributors of safety data) and SSP/SMS implementation within the RASG-AFI region were yet to evolve to desired maturity (no RASG-AFI State attained Level 4 of SSP implementation).
  - AFI-CIS missions carried out were based on guidance material provided by the AFI CIS experts. This arrangement poses major quality control challenges as material provided to recipient States is not traceable to AFCAC and in some cases lacks consistency.

- Duplication of efforts by entities providing assistance missions to States under different mechanisms (i.e. ROST, AFI-CIS, RSOO, etc.).

3.2 Recommendations

- On-going efforts to resolve the remaining Significant Safety Concern (SSC) in Eritrea should be rigorously pursued by all stakeholders as a matter of priority, using every practical means possible.;

- The APIRG / RASG-AFI coordination should be improved for greater alignment and harmonization; and a strategy developed and implemented as envisaged under ICAO Council Decision C-DEC 210/4 and Global PIRG-RASG Forum outcomes.

- RASG-AFI States should be encouraged to embrace and actively participate in the Global Aviation Safety Oversight System (GASOS) initiative;

- RASC should urge all States to establish effective RSTs, pursue certification of their international aerodromes and provide feedback on progress made to the RASC;

- To ensure quality and efficiency of the AFI CIS programme, AFCAC should establish an AFI CIS toolkit or platform upon which a database of generic technical guidance materials, such as mission programs and checklists, are deposited and accessible even remotely;

- Better coordination and collaboration mechanisms should be established between concerned stakeholders, under the framework of providing assistance to States, in order to avoid duplication of efforts, optimize and efficiently utilize the available resources;

- RASC should establish an effective mechanism on monitoring the implementation of the ASRT recommendations and providing feedback on the status to the RASG-AFI on regular basis.

Appendix – 1: List of Member States of the RASG-AFI

Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Comoros
Congo
Côte d'Ivoire
Democratic Rep. of 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
Eswatini
Togo
Uganda
United Republic of Tanzania
Zambia
Zimbabwe

Appendix – 2: List of Permanent Partners of RASG-AFI

Airports Council International (ACI)

African Civil Aviation Commission (AFCAC)

African Airlines Association (AFRAA)

Airbus Aircraft Manufacturer (AIRBUS)

Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar (ASECNA)

Boeing Commercial Airplane Company (BOEING)

Civil Air Navigation Services Organization (CANSO)

Cooperative Development of Operational Safety and Continuing Airworthiness Programmes(COSCAPs)

European Aviation Safety Agency (EASA)

Federal Aviation Administration – United States of America (FAA-USA)

Flight Safety Foundation (FSF)

International Air Transport Association (IATA)

International Federation of Airline Pilots Association (IFALPA)

International Federation of Air Traffic Controllers Association (IFATCA)

Regional Safety Oversight Organizations (RSOOs)

World Food Programme - United Nations (WFP-UN)

Appendix – 3: List of States Having USOAP Safety Oversight Effective Implementation (EI) of 60% and greater as at December 2019

Benin

Botswana

Burkina Faso

Cameroon

Cape Verde

Congo

Cote d'Ivoire

Eq. Guinea

Ethiopia

Gabon

Gambia

Ghana

Kenya

Madagascar

Mali

Mauritania

Mauritius

Mozambique

Namibia

Niger

Nigeria

Rwanda

Senegal

South Africa

Togo

Uganda

United Republic of Tanzania

Zambia

Appendix 4 – APEX in Africa 2011 - 2019

5-9 Sep 2011	International Gnassingbé Eyadéma	Lome, Togo	**Safety Pilot**
12-16 Mar 2012	Aeroportos de Moçambique, E.P.	Maputo, Mozambique	**Safety**
2-6 Apr 2012	Kenneth Kaunda International Airport	Lusaka, Zambia	**Safety**
18-22 Mar 2013	Aéroport de Nouakchott	Nouakchott, Mauritanie	**Safety**
20-24 Jan 2014	Sir Seewoosagur Ramgoolam International Airport	Plaine Magnien, Mauritius	**Safety**
12-16 May 2014	Aéroport Félix Houphouët-Boigny	Abidjan, Ivory Coast	**Safety**
1-5 Sep 2014	Aéroport de Ouagadougou	Ouagadougou, Burkina Faso	**Safety**
22-24 Oct 2014	Aéroport de Port-Gentil	Port-Gentil, Gabon	**Safety**
24-28 Nov 2014	Aéroport international Cardinal Bernardin Gantin	Cotounou, Benin	**Safety**
1-5 Dec 2014	Aéroport international Diori Hamani	Niamey, Niger	**Safety**
30 Nov - 4 Dec 2014	Khartoum International Airport	Khartoum, Sudan	**Safety**
3-7 May 2015	Cairo International Airport	Cairo, Egypt	**Safety**
18-22 May 2015	Murtala Muhammed International Airport	Lagos, Nigeria	**Safety**
25-29 May 2015	Entebbe International Airport	Entebbe, Uganda	**Safety**
8-12 Jun 2015	Aéroport International Léopold Sédar Senghor	Dakar, Senegal	**Safety**
15-19 Jun 2015	Nnamdi Azikiwe International Airport	Abuja, Nigeria	**Safety**
22-26 Jun 2015	Aéroport International de Bamako-Sénou	Bamako, Mali	**Safety**
9-7 August 2015	Aéroport international Hassan Djamous de N'Djamen	N'Djamena, Chad	**Safety**
21-25 Sep 2015	Kotoka International Airport	Accra, Ghana	**Safety**
18-22 Jan 2016	Aéroport International de Tunis Carthage	Tunis, Tunisia	**Safety**
1-5 Aug 2016	Aéroport International de Brazzaville Maya-Maya	Brazzaville, Congo	**EASA Safety**
21-25 Nov 2016	Aéroport International de Yaoundé-Nsimalen	Yaoundé, Cameroon	**EASA Safety**
28 Nov - 2 Dec 2016	Aéroport International de Douala	Douala,Cameroon	**EASA Safety**
30 Jan - 3 Feb 2017	Aéroport International Léon-Mba	Libreville, Gabon	**EASA Safety**
20-24 Mar 2017	Aéroport de Pointe Noire	Ponte Noire, Congo	**EASA Safety**
3-7 Jul 2017	Bangui M'Poko International Airport	Bangui, Central Africa	**EASA Safety**
21-25 Aug 2017	Aéroport International Hassan Djamous	N'DJamena Chad	**EASA Safety**
18-22 Sep 2017	Aéroport International Omar Bongo ONDIMBA	Franceville, Gabon	**EASA Safety**
30 Oct-3 Nov 2017	Aéroport de Kinshasa/Ndjili	Kinshasa, Congo	**EASA Safety**
6-10 Nov 2017	Aéroport de Luano	Lubumbashi, Congo	**EASA Safety**
11-15 Dec 2017	Banjul International Airport	Banjul, Gambia	**Safety**
15-17 Jan 2018	Nouadhibou International Airport	Noouadhibou, Mauritanie	**Safety and Security**
20-24 Jan 2018	Nouakchott International Airport	Nouakchott, Mauritanie	**Safety and Security**
12-16 March 2018	Hosea Kutako International Airport	Windhoek, Namibia	**Safety**
12-16March 2018	Port Harcourt International Aiport	Port Harcourt, Nigeria	**Safety**
19-23 March 2018	Mallam Aminu Kano International Airport	Kano, Nigeria	**Safety**
25-29 June 2018	Akanu Ibiam International airport	Enugu, Nigiera	**Safety**
2-6 July 2018	Kaduna Airport	Kaduna, Nigeria	**Safety**
6-10 August 2018	Kigali International Airport	Kigali, Rwanda	**Safety**
8-12 April 2019	Aéroport de La Réunion Roland-Garros	La Réunion	**Safety**
24-28 June 2019	Maputo International Airport	Maputo, Mozambique	**Safety**
23-27 Sept 2019	Kamuzu International Airport	Lilongwe, Malawi	**Safety**

Appendix – 5: Status of Aerodrome Certification in the AFI Region, December 2019

STATE/TERRITORY	No of INT AERODROMES (Att A_AFI eANP-Table AOP I-1)	AERODROMES STATUS		
		Certified	Not Certified	Percentage
WACAF	**57**	**12**	**45**	**21.05**
Benin	1	0	1	0,00
Burkina Faso	2	0	2	0,00
Cameroon	5	0	5	0,00
Cape Verde	2	2	0	100,00
Central African Republic	2	0	2	0,00
Chad	1	0	1	0,00
Congo	2	0	2	0,00
Cote d'ivoire	1	1	0	100,00
Democratic Republic of Congo	5	0	5	0,00
Equitorial Guinea	1	0	1	0,00
Gabon	3	1	2	33,33
Gambia	1	0	1	0,00
Ghana	1	1	0	100,00
Guinea	1	0	1	0,00
Guinea-Bissau	1	0	1	0,00
Liberia	1	0	1	0,00
Mali	6	1	5	16,67
Mauritania	5	1	4	20,00
Niger	3	1	2	33,33
Nigeria	5	2	3	40,00
Sao Tome and Principe	1	0	1	0,00
Senegal	5	1	4	20,00
Sierra Leone	1	0	1	0,00
Togo	1	1	0	100,00
ESAF	**75**	**27**	**48**	**36**
Angola	2	0	2	0,00
Botswana	5	0	5	0,00
Burundi	1	0	1	0,00
Comoros	3	0	3	0,00
Djibouti	1	0	1	0,00
Eritrea	2	0	2	0,00
Eswatini	1	1	0	100,00
Ethiopia	4	3	1	75,00
Kenya	3	2	1	66,67
Lesotho	1	0	1	0,00
Madagascar	7	1	6	14,29
Malawi	2	0	2	0,00
Mauritius	1	1	0	100,00
Mozambique	10	1	9	10,00

Namibia	3	2	1	66,67
Rwanda	1	1	0	100,00
Seychelles	1	0	1	0,00
Somalia	5	0	5	0,00
South Africa	10	10	0	100,00
South Sudan	1	0	1	0,00
Uganda	1	0	1	0,00
Tanzania	3	2	1	66,67
Zambia	4	1	3	25,00
Zimbabwe	3	2	1	66,67
TOTAL (WACAF/ESAF)	**132**	**39**	**93**	**29,5454545**

Appendix - 6: Acknowledgement

RASG-AFI acknowledges the valuable contributions of:

- BOEING and AIRBUS (for sponsoring the printing of the ASR);
- The RASG-AFI Annual Safety Report Team (ASRT) Members who contributed to the productions of the *RASG-AFI Annual Safety Reports:*

Picture,

From Right to Left:

Papa Atoumane FALL……..AFCAC
Maury SECK……AIRBUS
Kebba Lamin JAMMEH ……ICAO
Blessing KAVAI …… IATA
Chamsou D. ANDJORIN……..BOEING
James DANGA ……AFCAC

ABBREVIATIONS

ACC – Area Control Centre
ACI – Airports Council International
AFI – Africa and Indian Ocean
AFPP – Africa Flight Procedures Programme
AI – Accident Investigation
AIAG – AFI ATS Incident Analysis Group
ANC – Air Navigation Commission
ANSP – Air Navigation Service Providers
AOC – Air Operator Certificate
APAC – Asia Pacific
ARC – Abnormal Runway Contact
ASR – Annual Safety Report
ASRT – Annual Safety Report Team
ATC – Air Traffic Control
ATM – Air Traffic Management
ATS – Air Traffic Services
CAA – Civil Aviation Authority
CCO/CDO – Continuous Climb Operations/ Continuous Descent Operations
CIS – Commonwealth of Independent States
CMA – Continuous Monitoring Approach
ESAF – Eastern and Southern Africa
ESI – Emerging Safety Issues
EUR – Europe
FIR – Flight Information Region
FLT – Flight
FSO – Fundamentals of Safety Oversight
GCOL – Ground Collision
GOA – Ground Operations Agent (ISAGO)
IATA – International Air Transport Association
ICAO – International Civil Aviation Organization
ICVM – ICAO Coordinated Validation Mission
IFALPA – International Federation of Airline Pilots' Association
IFATCA – International Federation of Air Traffic Controllers' Association
IFBP – In-Flight Broadcasting Procedures
IOSA – IATA Operational Safety Audit
ISAGO – IATA Safety Audit of Ground Operations

LATAM – Latin America
MENA – Middle East and North Africa
MID – Middle East
MNT – Maintenance
NAM – North America
NAT – North Atlantic
NASA – North Asia
ORG – Organization and Management
PA – Pan American
RASC – RASG AFI Steering Committee
RASG – Regional Aviation Safety Group
RE – Runway Excursion
RI – Runway Incursion
RWY – Runway
SAM – South America
SARPs – Standard and Recommended Practices
SCF-PP – Systems Component Failure Powerplant
SCF-NP – Systems Component Failure Non-Powerplant
SMS – Safety Management Systems SSC – Significant Safety Concerns
SSC – Significant Safety Concerns
SSP – State Safety Programme
SST – Safety Support Team
TWY – Taxiway
UCR-Unsatisfactory Condition Report
UNK - Unknown
USOAP – Universal Safety Oversight Audit Programme
USOS – Undershoot/Overshoot
WACAF – Western and Central Africa
3 per. Mov. Avg. (AFI) – 3 Year Moving Average (takes average rate over 3 years)

RASG-AFI Civil Aviation Safety Partners