ICAO

Safety

RASG-AFI

Annual Safety Report 2017

Fourth Edition

Issued in July 2018

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Foreword

The Steering Committee of the Regional Aviation Safety Group for Africa-Indian Ocean (RASC) 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 and making recommendations to the RASG-AFI for safety enhancement initiatives. I therefore, kindly urge all stakeholders to collaborate and cooperate with the ASRT in sharing and exchanging safety information for the good of aviation safety within the RASG-AFI.

The progress and effectiveness of States in achieving the objectives and priorities of the Abuja Safety Targets are measured on an on-going basis. Monitoring and reporting progress enables States and the ICAO regional offices to modify their activities based on their performance and to address emerging safety issues. To support States in this endeavour, an annual safety report, which provides an indication of the progress being made, is published by the RASG-AFI on a yearly basis.

While the RASG-AFI Annual Safety Report (ASR) is an annual publication, it is intended to be released and distributed during the AFI Aviation Safety Symposium, which is an annual event organized by ICAO and hosted by an AFI Member State. Comments and contributions from the general readership geared towards improving the quality of the document is highly welcome.

The ASR is organized in Section headings. A Table of Contents is provided which serves as a subject index.

Conclusions drawn and recommendations made in the Report are for the attention and appropriate action by relevant parties for timely implementation. Subsequent editions of the Report will provide information on the outcome of the assessment and the status of implementation of such recommendations; and any alternative course(s) of action that could be undertaken in addressing the outstanding issues.

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

Mr. Levers Mabaso

Chairperson, RASG-AFI

Acting Chief Director
Civil Aviation Safety, Security and SAR
Department of Transport
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Background

This Fourth Edition of the RASG-AFI Annual Safety Report provides safety information related to accidents and occurrences in the RASG-AFI region. It also provides background on the establishment of a Regional Aviation Safety Group for Africa - Indian Ocean (RASG-AFI) as approved by the ICAO Council at the fourth meeting of its 190th Session held on 25 May 2010. This edition of the Report was released during the Safety Symposium in July 2018 in Niamey, Niger. The RASG-AFI was endorsed by the fourth Meeting of the Directors-General of Civil Aviation Authorities of the ICAO Western and Central African (WACAF) and Eastern and Southern African (ESAF) States held in Matsapha, The Kingdom of Swaziland, from 8 to 9 November 2010. However, the structure and terms of reference for RASG-AFI were approved by the first meeting of RASG-AFI which was held at the Imperial Royal Hotel in Kampala, Uganda, from 26 to 27 March 2012.

RASG-AFI is the main driver of the safety planning process. 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. 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 within the Global Aviation Safety Plan (GASP) includes the following:

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.

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

In accordance with the RASG-AFI Procedural Handbook, the 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 register 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).

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 Fourth Meeting held in Nairobi, Kenya, in October, 2017, 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 RASG-AFI/5 in 2019:
Chairperson – South Africa; 1st Vice-Chairperson – Togo; 2nd Vice-Chairperson – Kenya; 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).**

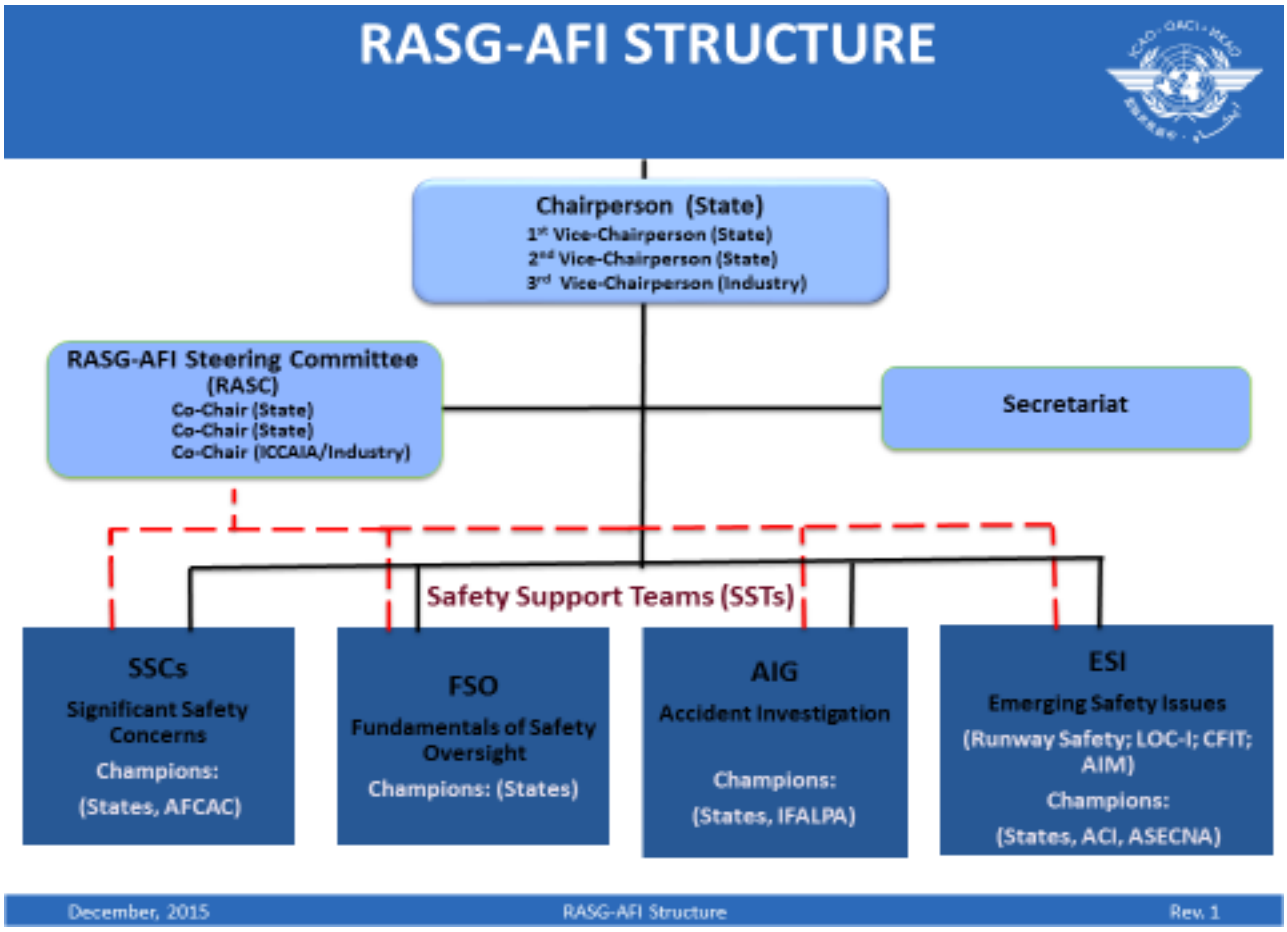
A Joint APIRG-RASG/AFI Coordination Task Force, which was established by the RASG-AFI/3 Meeting. is a subsidiary body to APIRG and RASG-AFI intended to strengthen existing arrangements and responsible for coordinating the activities of the two Groups.

Membership of the APIRG/RASG-AFI Joint Coordination Task Force comprises designated Representatives from APIRG and RASG-AFI. RASG-AFI Representatives include: two (2) Representatives (one (1) from Secretariat and one from an AFI State); 1 Representative from AFCAC; and Airbus representing the Industry.

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. Therefore, RASG-AFI members are encouraged to share their safety data with the ASRT.

Figure 1: RASG-AFI Organisational Structure



1 Executive Summary

This Fourth 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 2013 to 2017, and the analysis performed by the Annual Safety Report Team (ASRT).

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 2017, showed that twenty-four (24) States in the RASG-AFI Region had attained 60% of Effective Implementation (EI) of the eight critical elements of a State's safety oversight system and the ICAO SARPs. At the end of 2017, on a global level (worldwide), there were four (4) unresolved SSCs in four States, all of them in the area of aircraft operations (OPS); out of these, two (2) States (Eritrea and Malawi) are within 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. RASC acknowledged the progress registered in meeting the Abuja safety targets. However, due to delay in meeting some of the targets, RASC recognised the need to reformulate the targets, revise the deadlines and align them with the revised GASP. The Abuja Safety Targets were revised accordingly in December, 2017 and subsequently approved by the RASG-AFI/4 plenary. . The revised targets now incorporate the Air Navigation targets and performance indicators.

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 service providers to interact more effectively in the resolution of safety concerns. The Abuja Safety Targets require States with 60% EI and greater to implement SSP (i.e. 24 RASG-AFI States at the end of 2017). By end of 2017, considerable progress had been registered in the implementation of SSP within the RASG-AFI Region: Eleven (11) 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 Seven (7) attained Level 1 and at various stages of attaining Level 2 . (see Figure 14 and Table 3).

Analysis of available safety information on the RASG-AFI Region showed that the top category to focus safety enhancements is related to Runway Safety (RS). Out of the Seven (7) accidents recorded in the RASG-AFI Region in 2017 for scheduled commercial operations involving aircraft with maximum take- off mass above 5700kg , five (5) were Runway safety related; One (1) was related to an uncontained engine failure en-route (SCF); and One (1) related to a nose gear collapse at end of landing roll (SCF).There were zero (0) accident related to Controlled Flight Into Terrain (CFIT) and Loss of Control In-flight (LOC-I). Although no accidents related to CFIT and LOC-I were recorded in 2017, there is still an urgent 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. The following categories continue to call for urgent consideration:

Runway Safety (RS)

Loss of Control In-flight (LOC-I);

Controlled Flight Into Terrain (CFIT).

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.

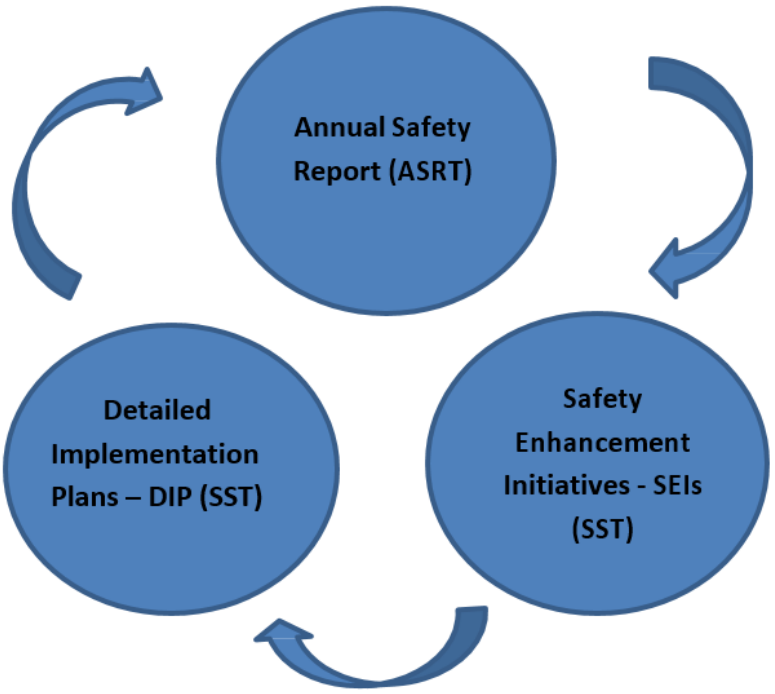
PLEASE NOTE:

All accident statistics sourced from ICAO (ICAO iSTARS) are based on the Country /State of occurrence in RASG-AFI.

All accident 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



1.1 Regional Traffic Volume

The air transport sector flown in RASG-AFI Region has shown gradual growth from 2013 to 2017 (for both Jet & Turboprop aircraft). The 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 slightly above one and one-quarter million (1.28M) movements a year, with 46% jets and 54% 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)

	2013	2014	2015	2016	2017	*Total*
Jet	**0.51**	**0.53**	**0.56**	**0.57**	**0.59**	**2.76**
Jet (IATA)	0.34	0.36	0.39	0.40	0.44	**1.93**
Jet (IOSA)	0.36	0.38	0.41	0.43	0.45	**2.02**
Jet (Non-IATA)	0.17	0.17	0.17	0.17	0.15	**0.82**
Jet (Non-IOSA)	0.16	0.15	0.15	0.14	0.15	**0.74**
Turboprop	**0.60**	**0.61**	**0.61**	**0.64**	**0.69**	**3.15**
Turboprop (IATA)	0.12	0.11	0.12	0.12	0.18	**0.65**
Turboprop (IOSA)	0.14	0.13	0.14	0.17	0.18	**0.75**
Turboprop (Non-IATA)	0.48	0.49	0.49	0.52	0.51	**2.50**
Turboprop (Non-IOSA)	0.46	0.48	0.47	0.47	0.51	**2.40**
Total AFI	**1.11**	**1.14**	**1.17**	**1.21**	**1.28**	**5.91**
Total AFI (IATA)	0.46	0.47	0.51	0.52	0.62	**2.59**
Total AFI (IOSA)	0.49	0.51	0.55	0.59	0.62	**2.77**
Total AFI (Non-IATA)	0.65	0.67	0.66	0.69	0.66	**3.32**
Total AFI (Non-IOSA)	0.62	0.63	0.62	0.61	0.66	**3.14**

Source: IATA GADM

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

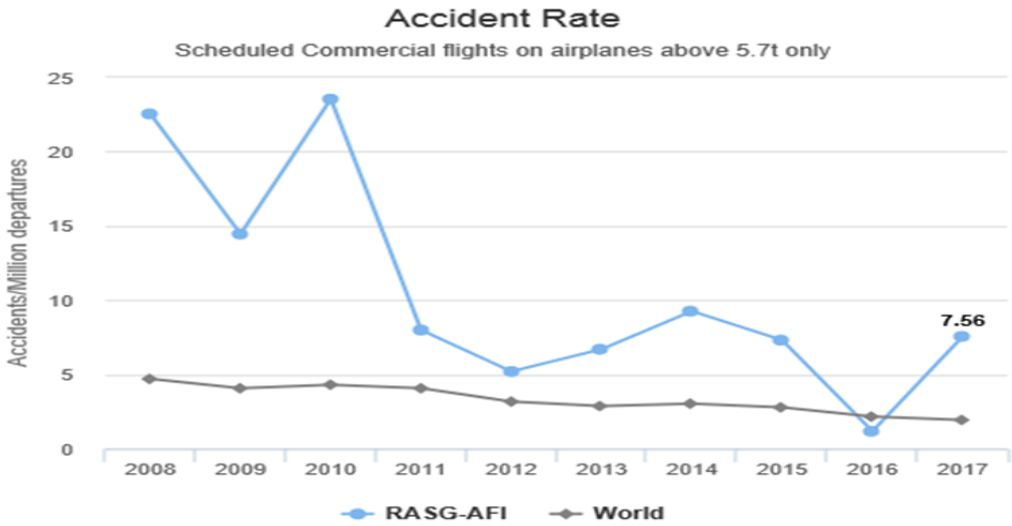
In accordance with the revised Abuja safety targets, the African accident rate should be progressively reduced from 8.6 to 2.5 per million departures by the end of 2022, with focus on:

- 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.
- Aircraft Proximity (AIRPROX) Occurrences

As a benchmark for Africa, the accident rate at the end of 2017 was 7.56 compared to the world rate of 1.93; runway related accidents & serious incidents had a rate of 6.8 accidents per million sectors in 2012 and 5.0 by end of 2017 (i.e. 27% reduction, Source: IATA); CFIT related Accidents & serious Incidents had a rate of 1.2 per million sectors in 2012 and went down to 0 in 2017 (i.e. 100% reduction, Source: IATA); and LOC-I related accidents & serious incidents had a rate of 2.25 per million sectors in 2012 and went down to 0.80 by end of 2017 (i.e. 64% reduction, 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 (2008 – 2017).

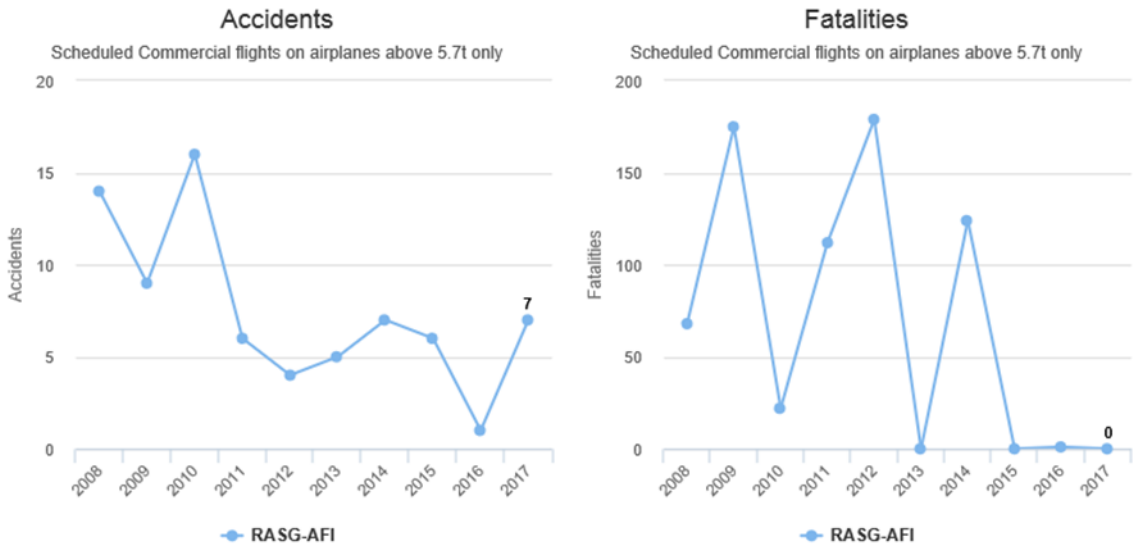


Source: ICAO iSTARS

2.1.1 Regional Accident Rates

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. Although by end of 2017, records showed zero fatalities in accidents that occurred in Africa, efforts must be focused on maintaining this trend in order to meet the desired target.

4: Comparison of Number of Accidents and Fatalities in RASG-AFI for 2017



Source: ICAO iSTARS

2.1.2 Regional Air Traffic Volume and Accident Data for 2017

Table 2 below compares the air traffic volume, number of accidents, accident rates, and fatalities by sub-region for 2017. The accident rate in the RASG-AFI Region has dropped from 8.23 in 2016 to 7.56 in 2017, whilst the number of accidents remained the same as for 2016. Despite the drop in these figures, 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 as compared to the other regions (which has increased from 851 Thousand in 2016 to 925 Thousand in 2017).

Table 2: Regional Air Traffic Volume and Accident Data for 2017

Sub Region	Departures	Number of Accidents	Accident Rate (per million departures)	Number of Fatalities
RASG-AFI	925 K	7	7.56	0
RASG-APAC	11 M	22	2.01	2
RASG-EUR	9.1 M	13	1.43	45
RASG-MID	1.4 M	6	4.36	0
RASG-PA	13.2 M	20	1.51	1

Source: ICAO iSTARS

2.1.3 Analysis of RASG-AFI Region Accidents between 2008 & 2017

Based on an analysis of accident data covering the period 2008–2017, ICAO identified four high- risk accident occurrence categories:

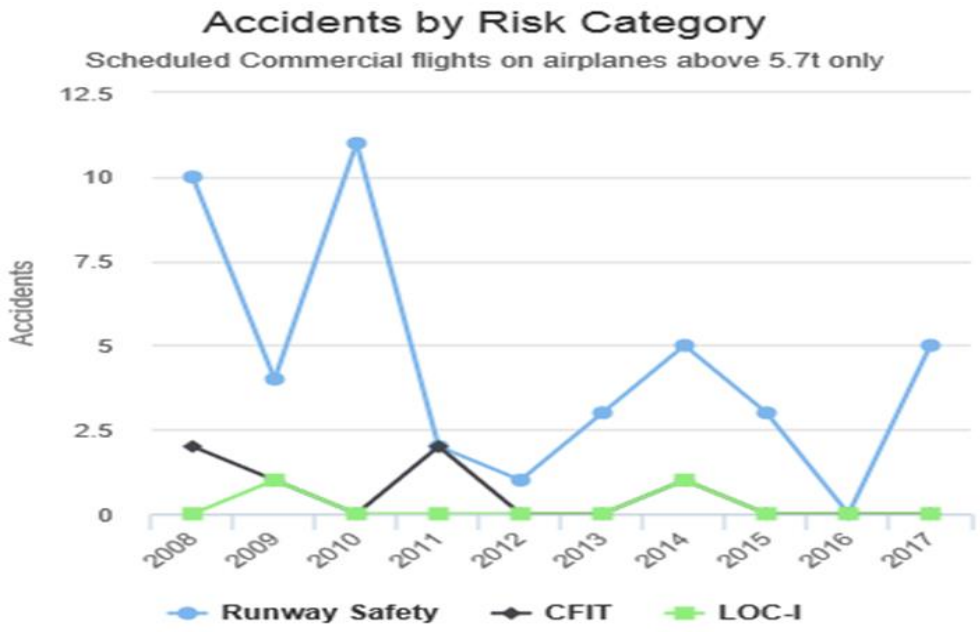
- Runway Safety-related events
- Loss of Control In-flight (LOC-I)
- Controlled Flight into Terrain (CFIT)
- Aircraft Proximity (AIRPROX) Occurrences

As indicated in Figure 5, these three categories represented about 69%of the total number of accidents, 66% of fatal accidents and 98% of all fatalities between 2013 and 2017 for aircraft with maximum take-off weight (MTOW) above 5700kg engaged in scheduled commercial lights.

The Figure shows that in these high-risk categories, 62% of those accidents were Runway Safety related, and the highest number of fatalities were related to Loss of Control In-flight accidents (LOC-I), which constituted 93% of fatalities. This is due to the high energy involved in such accidents.

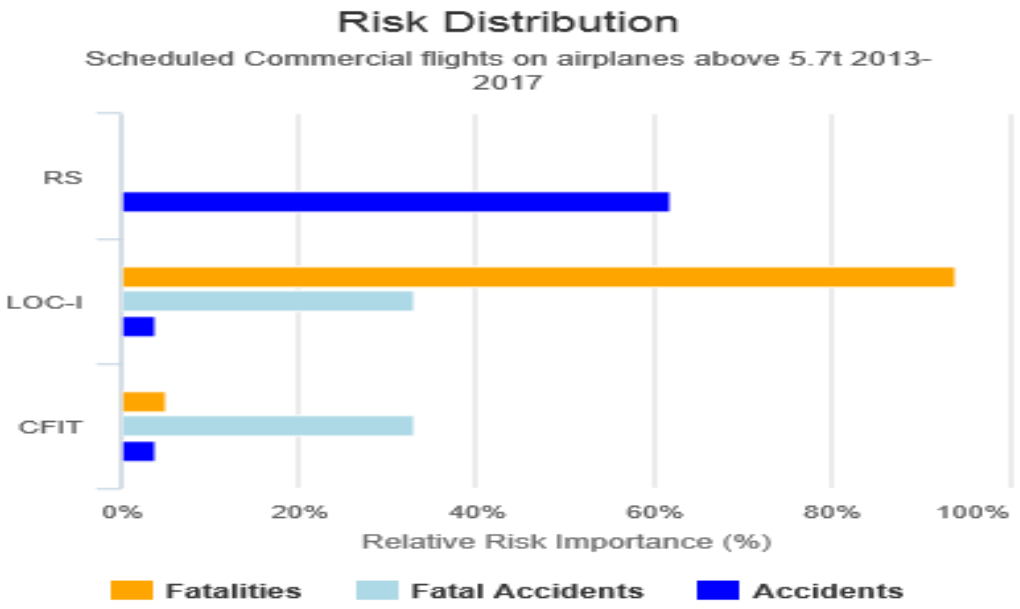
Figure 5: Distribution of High-Risk Accidents for the period 2008 – 2017

Figure 5a: Accidents by Risk Category



Source: ICAO iSTARS

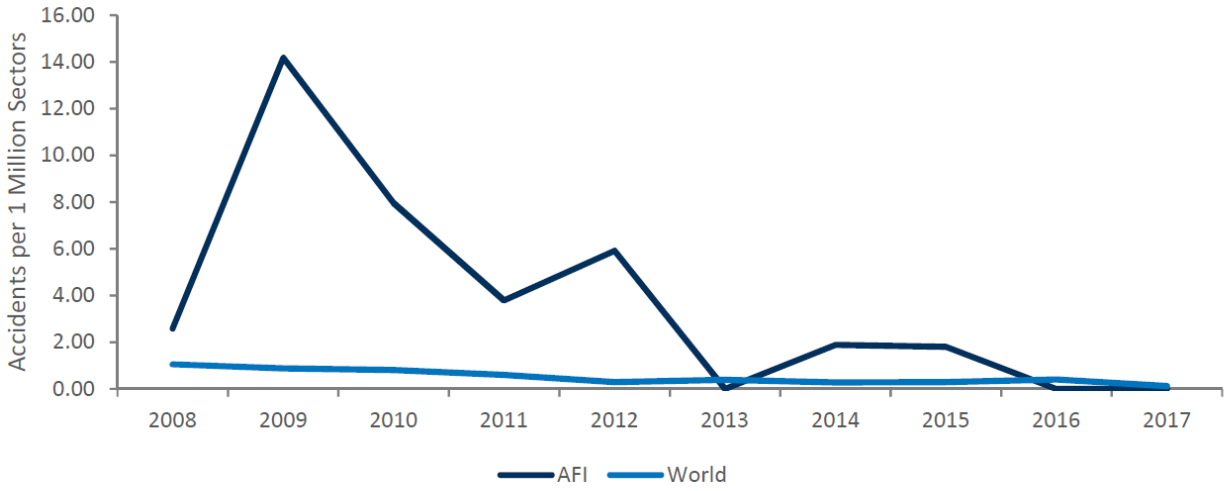
Figure 5b: Accidents by Risk Category



Source: ICAO iSTARS

Figure 6: Jet Damage Type (Hull Loss) RASG AFI vs World (2008- 2017)

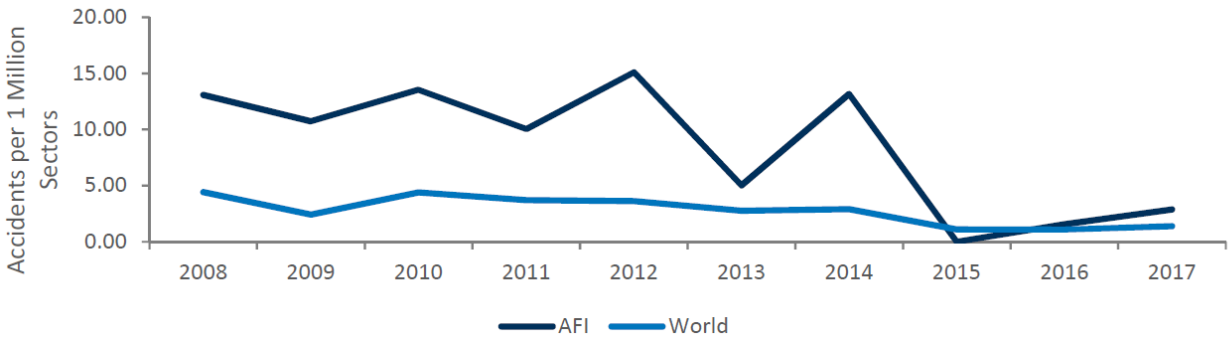
The graph below shows the accident rate according to the Jet damage type (hull loss) for RASG-AFI versus the world for the period 2008 - 2017.



Source: IATA GADM

Figure 7: Turboprop Damage Type (Hull Loss) RASG-AFI vs World (2008-2017)

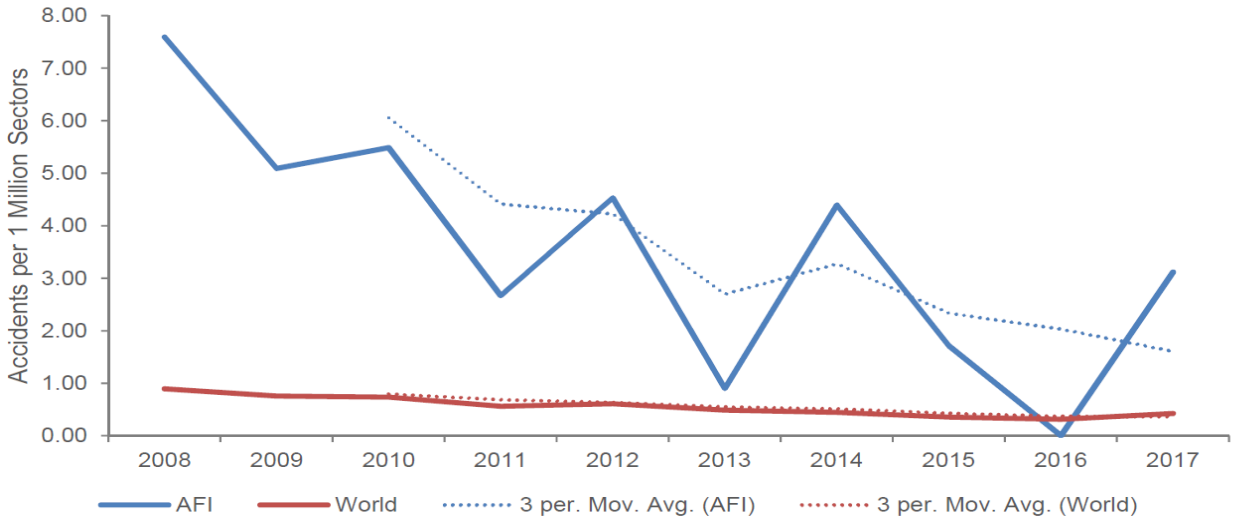
The graph below shows the accident rate according to the Turboprop damage type (hull loss) for RASG-AFI versus the world for the period 2008 - 2017.



Source: IATA GADM

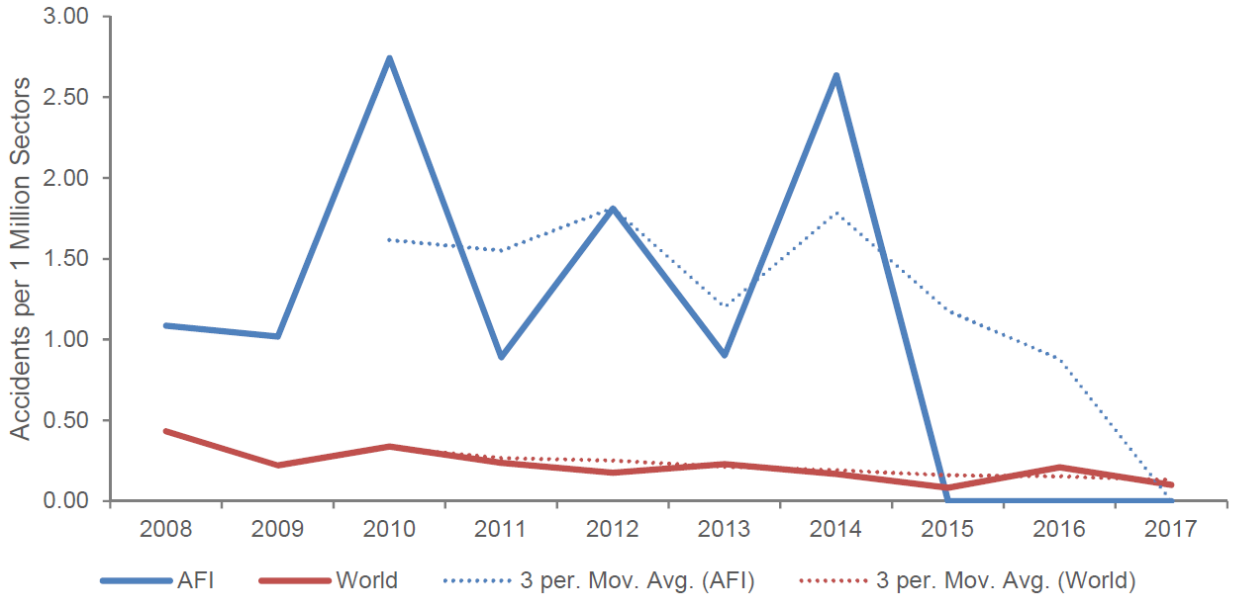
Figure 8: RASG-AFI Region High-Risk Accident Trend (2008– 2017)

7a. Runway Safety Related Accidents (Jet & Turboprop, 2008 – 2017)



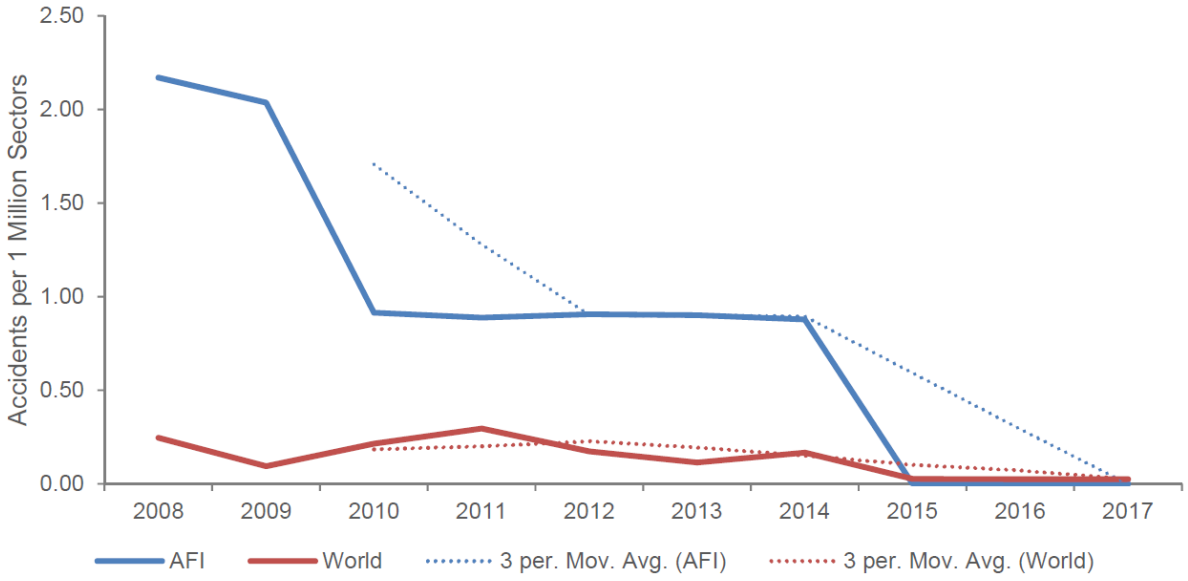
Source: IATA GADM

7b. LOC-I Accidents (Jet & Turboprop, 2008 – 2017)



Source: IATA GADM

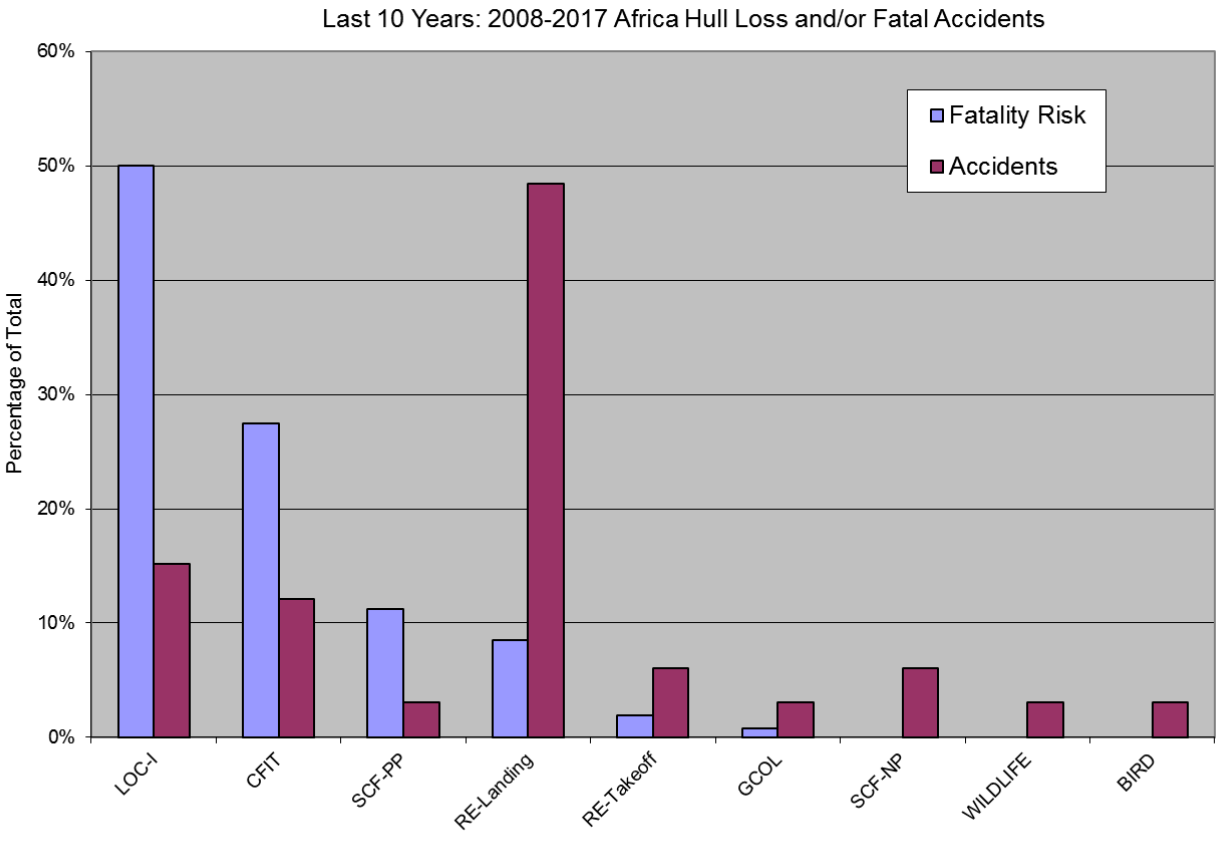
7b. CFIT Accidents (Jet & Turboprop, 2008 – 2017)



Source: IATA GADM

Figure 9: RASG AFI Hull Loss & Fatality Risk for 2008 - 2017

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: LOC-I, CFIT and RE-Landing with LOC-I showing the highest fatality risk. The ten (10) year period gives good visibility on trend as to where efforts should be directed.



*Western built airplanes, Part 121 equivalent operations: 33 accidents; 8.9 Full Loss Equivalents

Source: Boeing

2.1.4 Revised Abuja Safety Targets; Incorporating AFI Air Navigation Services Performance Indicators (ANS PIs)

Re-formulated Abuja Safety Target	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
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.	**Targets met**: Runway Related Accidents & serious incidents had a rate of 6.8 accidents per million sectors in 2012 and 2.8 by end of 2015 **i.e. 59% reduction**. (Source: IATA) CFIT related Accidents & serious Incidents had a rate of 1.2 per million sectors in 2012 and went down to 0 in 2015 **i.e. 100% reduction.** (Source: IATA) LOC-I related accidents & serious incidents had a rate of 2.25 per million sectors in 2012 and went down to 0.80 by end of 2015 **i.e. 64% reduction.** (Source: IATA)	Sustain achievement and call for further reduction by 50% as applicable Include target on Fatal accidents to reflect NCLB aspirational goal.	**GASP:** Near-term Objective 2022 **NCLB:** No fatal accidents in commercial scheduled flights by 2025	By end of 2022
2. All States establish and strengthen autonomous Civil Aviation Authorities with independent	Comprehensive data on status of CAAs not available. However, at least the twenty-	Maintain target as it is still relevant as an enabler for SARPs implementation and	**NCLB:** No country without an autonomous and effective CAA by	By end of 2022

Re-formulated Abuja Safety Target	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
regulatory 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.	seven (27) CAAs of States that have attained the 60% EI Target, amongst the fifty-two (52) audited African States, are effectively autonomous.	effective oversight. Autonomy and Delegation of functions to RSOOs as separate targets to avoid inference that autonomous CAAs are not to use RSOOs.	2025	
3. States resolve: ▪ Existing SSCs by June 2018; ▪ Newly identified SSCs within 6 months from the date of its official publication by ICAO.	**Target not met** 2012 - 2017: ▪ 20 SSCs found in 13 States; ▪ 18 resolved	Sustain achievement. Explore all possible means to resolve SSCs (i.e. RSOOs platform, AFI-CIS, Third party intervention, etc.). Although 12 month	**NCLB:** No country with significant safety concerns	By end of June 2018

Re-formulated Abuja Safety Target	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
	in 11 States. ▪ 2 SSCs still exist in 2 States. ▪ Most exceeded 12 month deadline	deadline was not met in most cases, lessons have been learnt to allow for tighter deadline (3 months) given the gravity of such occurrences.		
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.	Thirty-five (35) States have accepted ICAO Plans of Action and are at different stages of implementation (Source: AFI Plan)	Require that all States have tailored ICAO Plans of Action and implement them accordingly, in order to reflect the NCLB initiative.		By end of 2019 By end of 2022
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;	**Target not met** ▪ **2012:** 14 States with EI above 60% (27% of States) ▪ **Oct 2017:** 27 States or 52% of	Reformulation of target to cover States below as well as those above 60% EI	**NCLB:** No country below 40% EI in any operational or air navigation related field. **DGCA/6:** by end of 2017	By end of 2022

Re-formulated Abuja Safety Target	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
70% < EI attain 95% by 2028.	the Audited states achieved EI above 60%			
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	**Target not met** ▪ Eleven (11) States have initiated SSP implement tation with level 2 being the highest attained. ▪ However, none of the forty eight (48) States has attained level 4 SSP implementati on	For SSP implementation, all States above 60% EI to use the iSTARS Gap Analysis tool to perform the following: • Gap Analysis; • Developing implementatio n plan; and • Benchmark progress.	**GASP:** Mid-term Objective by end of 2022. **NCLB:** No country without relevant data and tools to drive aviation development by end of 2025. **DGCA/6:** end of 2017	By end of 2022 By end of 2025 By end of 2022 By end of 2022 By end of 2020

Re-formulated Abuja Safety Target	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
harmonized SPIs as part of their SMS.				
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.	**Target not met** As of Oct 2017, • 37 International Aerodromes certified i.e. 28% of the total number of 133within AFI. • 8 International aerodromes certified i.e 57 % of the total No. of 14 in MID (Egypt, Libya and Sudan) • 10 International Aerodromes Certified i.e. 31% out of 32 in EUR/ NAT (Morocco, Algeria , Tunisia)	Retain the target and reformulate it to capture the NCLB aspiration on State capacity for certification	**NCLB:** No country without aerodrome certification capabilities. **DGCA/6:** end of 2017	By end of 2022
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	From a total of 20 airlines on the IOSA Registry in 2012 there were 32 airlines on the Registry by end of December 2016. **NB two (2) airlines went out of operation**	Target to be retained and improved by separating the regulatory Requirement for IOSA and the registry		By end of 2022

Re-formulated Abuja Safety Target	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
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.	**along the way** However, no State had yet incorporated the IOSA requirement in the regulatory standards. (Source : IATA)			

Re-formulated Target ANS TARGET	Status of Implementation	Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)	References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)	Revised Deadline
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	• 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		**GANP:**	By end of 2019

SAR exercises to test SAR systems in place involving as many SAR units as practicable by end of 2019.	agreements or formalised cooperation where this has been lacking. • 8 States have developed National SAR Plans and 2 States have draft National SAR Plans in place.			
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% of States have fully completed Phase 1 Consolidation ; • 44% have partially accomplished Phase 2 Going Digital			By end of 2020
ANS TARGET	**Status of Implementation**	**Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)**	**References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)**	**Revised Deadline**
11. All States to implement PBN procedures for all instrument runways.	Available information indicate the overall average of over 75%	No instrument runway without a PBN approach	**NCLB:** Aspirational Goals	By end of 2025

• 75% of Instrument Runways to have PBN procedures by end of 2020; • 100% of Instrument Runways to have PBN Procedures by end of 2025.	in AFI Region which is below the Global target of 100%			
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%)	In order to achieve this target, prevalence of the top 5 contributory factors are to be reduced by 50 % year on year from 2017 to 2023; starting from a base line of 30 from December, 2017 (i.e. past 10 year average): • Contribution of Controller Proficiency (15.7); • Contribution of Co-ordination between ATS Units (8.5); • Contribution of Airspace Organization and ATC Procedures (7.5); • Contribution of Mobile Communications (7.5); • Contribution of Poor Crew			By end of 2023

	Discipline on board aircraft (6.5).			
ANS TARGET	**Status of Implementation**	**Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)**	**References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)**	**Revised Deadline**
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 ANSPs within the AFI Region to be harmonized.	• Various initiatives ongoing in AFI Region under RECs and or ANSPs. • Activities towards integration of the arrangements programs is anticipated in near future through RECs			By end of 2024
14. All States to implement ASBU B0 Modules: • All States to develop	Accurate information on current Status of ASBU implementation in AFI Region is not		**GANP:**	By end of 2020

National ASBU Plan by end of 2018.	available. IATA ASBU Tracker indicate that: • Total % RNAV GNSS APRRCH as 59% for ESAF and 75% for WACAF; • Total % RNAV SID as 40% for ESAF and 20% for WACAF; • Total % RNAV STAR as 40% ESAF and WACAF 46%.			
ANS TARGET	**Status of Implementation**	**Recommended Action (Revision of deadline/Target Re-Formulation/Sustain achievement)**	**References (GASP/GANP/NCLB/RANP/APIRG/RASG-AFI/AFI DGCA, etc)**	**Revised Deadline**
15. All States to develop and implement a National Plan for the reduction of CO_2 emissions due to	18 States in AFI Region have developed and submitted to ICAO			By end of 2022

international civil aviation: • develop a National Plan for CO_2 reduction by end of 2020; • full implementation of the National Plan by 2022.	National Plan for the reduction of CO_2 emissions due to international civil aviation			
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 18 ASECNA States, South Africa, 3 Robert FIR States, Uganda, Mozambique, Zambia, Algeria etc)			By end of 2019

2.2 Proactive Safety Information

2.2.1 ICAO USOAP Audits

In an effort to establish and implement an effective safety oversight system that reflects the shared responsibility of the State and the broader aviation community, each ICAO Member State should address all of the eight Critical Elements (CE-1: Legislation; CE-2: Regulations; CE-3: Organization; CE-4: Technical Staff Qualification & Training; CE-5: Technical Guidance & Tools; CE-6: Licensing, Certification, Approvals & Authorizations; CE-7: Continuous Surveillance; CE-8:Resolution of Safety Issues). These eight categories address the entire spectrum of a State's civil aviation oversight activities.

2.2.1.1 Regional Audit Results

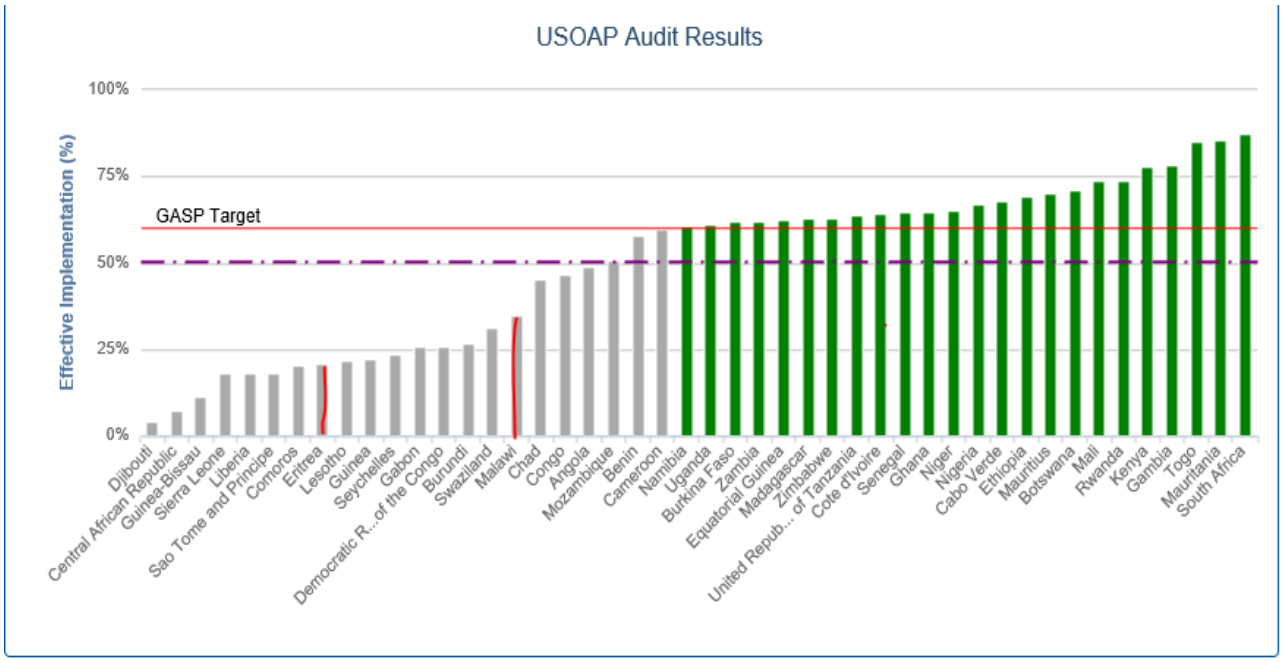
The audit results of the RASG-AFI States by the end of year 2017 (to which the ICAO ESAF and WACAF Regional Offices are accredited) have indicated that two of the Four (4) SSCs that existed in Four (4) States have been resolved. Two remained unresolved in two States (Eritrea and Malawi); both SSCs were in the area of aircraft operations and in the ESAF region. Efforts were being made to address these SSCs as soon as possible. The number of States with EI ≥ 60% in the RASG-AFI Region improved from Twenty-two (22) at the

end of 2016 to Twenty-four (24) at the end of 2017 and potential SSCs were avoided in some States through ROST Assistance Missions (e.g. Burkina Faso, Guinea,).

New targets set by the ICAO Regional Offices within RASG-AFI Region for the end of 2018 is that four (4) States with less than 30% EI attain at least 60% EI; and all SSCs resolved and new ones avoided.

Figure 10: Status of RASG-AFI States' Safety Oversight – %EI at the end of 2017.

This Figure depicts the status of the 46 audited (out of the 48) RASG-AFI States. Two States (Somalia and South Sudan) have not yet received a USOAP audit. The current average USOAP score for States in RASG-AFI is 50.06%, which although showed a slight improvement from 47.91% in 2016, is below the world average of 65.65%. 52.17% of the States in RASG-AFI have achieved the target of 60% EI, as suggested by the Global Aviation Safety Plan (GASP).

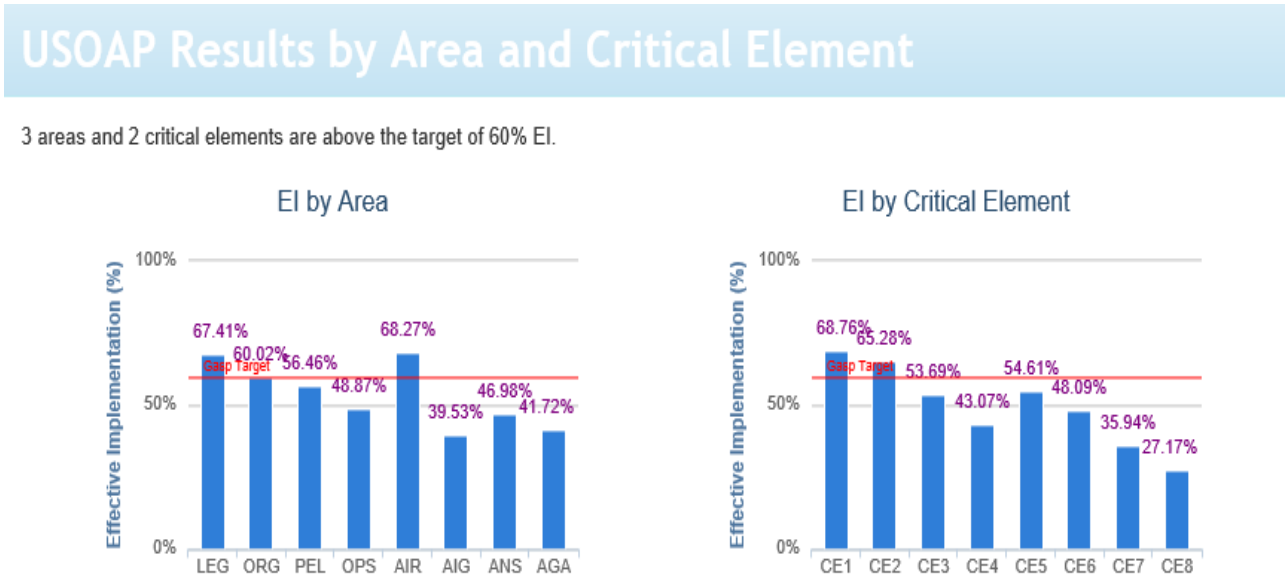


24 RASG-AFI States attained EI≥60%

2 RASG-AFI States with SSCs

Source: ICAO iSTARS

Figure 11: Effective Implementation of Safety Oversight Systems within RASG-AFI States by Audit Area and Critical Elements



In the RASG-AFI region, the average Effective Implementation in the area of AIR is highest at 68.27% at the end of 2017, which has increased from 66.27% at the end of 2016; and lowest in the area of AIG at 39.53%. (see Figure 10 above). Effective Implementation by Critical Element (CE) indicates lowest score in CE-8 (Resolution of Safety Issues) at 27.17% followed by CE-7 (Continued Surveillance) at 35.94%. There was a slight improvement in CE-4 (Technical Personnel Qualification and Training) from 37.99% to 43.07%. See Figure 10 above.

(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 fundamental safety oversight as well as aircraft accident and incident investigation systems. The Safety Support Teams of the RASG-AFI have identified these deficiencies and have developed project documents intended to improve capacities in these areas. Although the comprehensive implementation plan for aviation safety in Africa (AFI Plan) has funded some of the projects, there is still an urgent need for RASG-AFI and its partners to devise means of funding for the identified projects, in a timely manner, if the desired safety targets are to be met.

2.2.2.1 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 in the Region. At least three workshops have been conducted in the region over the last three years. These workshops have taken advantage of the availability of specialized flight simulators for this purpose; and indications are that they are impacting positively on mitigating this High Risk Category. States are also establishing the relevant regulatory framework and ensuring its implementation by the industry.

2.2.2.2 Performance Based Navigation (PBN) Operations Approval

Under the African Flight Procedures Programme (AFPP), African States are being assisted in developing PBN procedures at their international airports. This safety initiative is intended to mitigate CFIT related accidents and serious incidents, as well as CO2 Emissions and its related environmental impact.

The African Flight Procedure Programme (AFPP) was launched by ICAO in 2013. Its operations started in June 2014 in premises located in Dakar, Senegal, with the initial support of ASECNA, French DGAC and AIRBUS. By 31 December 2017, Thirty-two (32) African States were members of the AFPP.

In 2017, activities conducted by the AFPP team (composed of experts in the domain of the PBN and seconded by African States and Organizations) registered the following results:

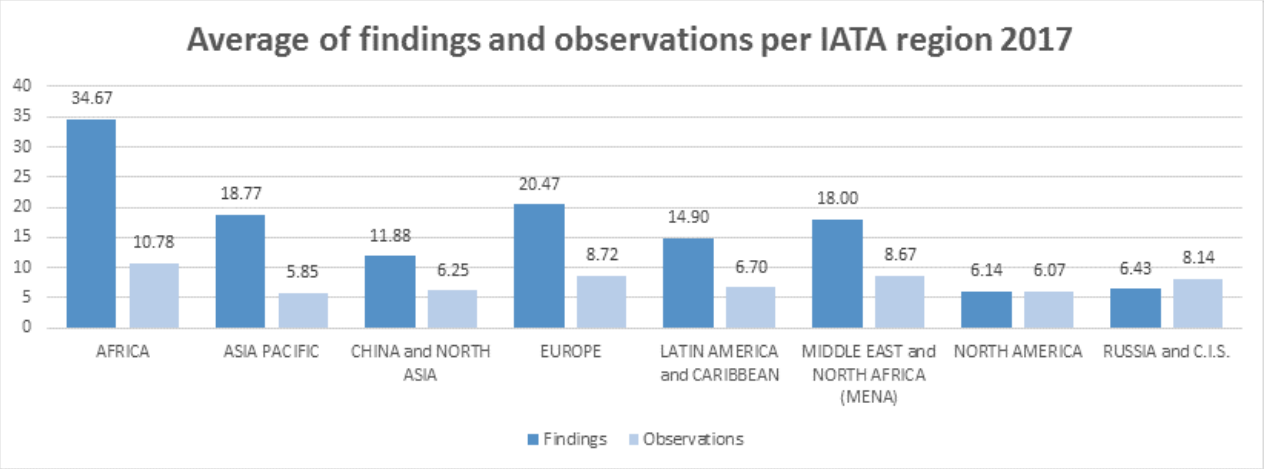
- National PBN Implementation Plan: Four (4) AFI States (ESAF and WACAF Regions) finalized and submitted their National Plans to the concerned ICAO Regional Offices. So far in total, thirty-seven (37) AFI States have finalized the required actions;
- Use of PBN in airspace design: Thirty-two (32) representatives from Fourteen (14) States attended a workshop held in Entebbe, Uganda, in order to review their national airspace organization;
- Quality Assurance process and Safety Assessment: Assistance related to Quality Assurance process and Safety Assessment for instrument flight procedures implementation were conducted for two (2) AFI States;
- Reduction of CO2 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 CO2 emissions by aircraft taking-off and landing from these airports;
- Conventional and PBN instrument flight procedures: Projects were launched to implement PBN flight procedures at fifteen (15) different airports in seven (7) AFI States;
- Internal PANS OPS flight procedures design capability: Thirty-four (34) flight procedures designers from Twenty-one (21) States/Organizations were trained by the AFPP Instructors, including OJT when requested.

2.2.3 IATA Operational Safety Audit (IOSA) Audits

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 12: Trend in IOSA Findings & Observations per Region

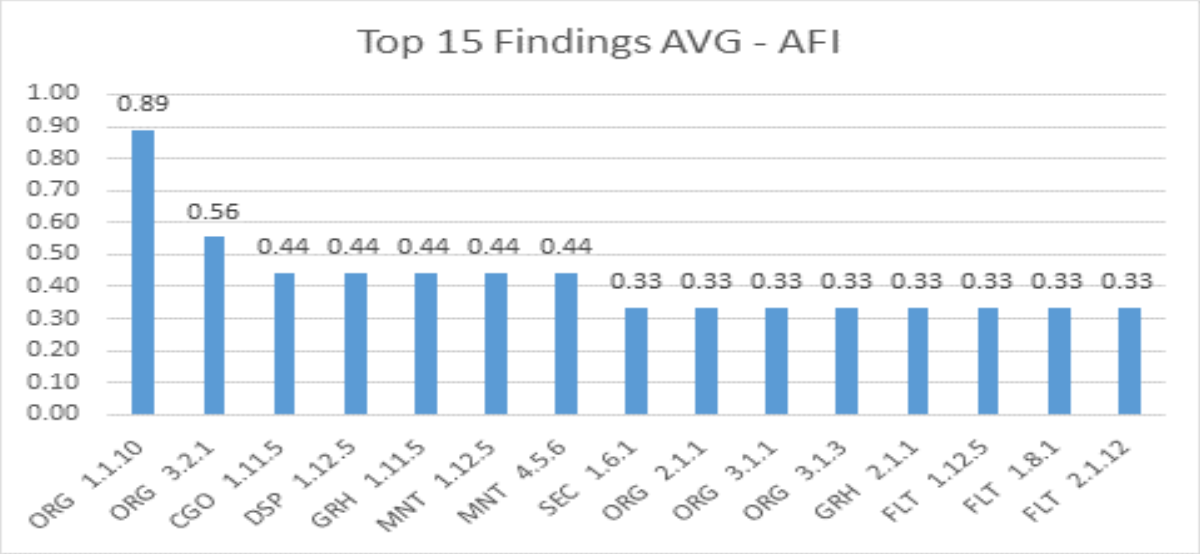


Source: IATA

The above pattern in findings and observations relates to IOSA audits conducted during the year 2017.

Figure 13: RASG-AFI Region Trend in IOSA Top Findings per Audit Area

The following graph shows the AFI trend in 2017 IOSA top findings per audit area where issues in Organisation featured the most followed by Flight Operations and Maintenance. The pattern remains unique for each region.



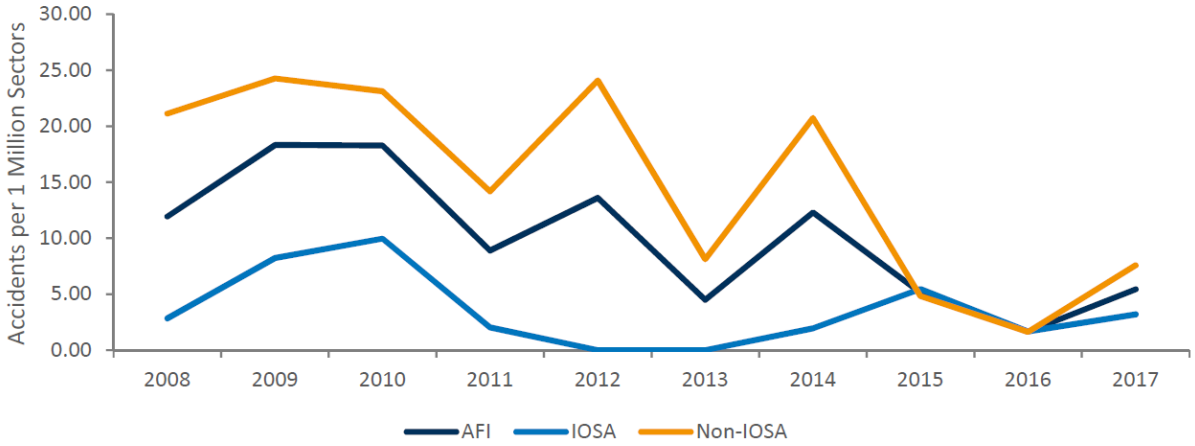
Source: IATA

Key: FLT1.12.5. =Safety Management; **FLT 1.8.1**= Flight Records System; **FLT 2.1.12**=Training and Evaluation Program; **MNT 1.12.5**= Safety Management; **MNT 4.5.6**=Initial and continuation training for outsourced maintenance; **Org 1.6.5**=Program for training personnel; **Org 3.4.13**=Organization's qualification of internal auditors; **Sec 1.6.1**= Documentation SystemGRH 1.11.5 =Safety Management; GRH 2.1.1=Training Program; **DSP 1.12.5**=Safety Management; **CGO 1.11.5**=Safety Management

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.

Figure 14: 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 2008-2017, per million flight sectors for RASG-AFI registered operators (dark blue) versus RASG-AFI IOSA- registered operators (light blue) and RASG-AFI non-IOSA-registered operators (orange). 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)

In September 2017, IATA implemented the ISAGO new operational audit model; all audits to be conducted from January 2018 would be in conformity with this model, which includes:

- the establishment of the "IATA Charter of Professional Auditors" (CoPA) – a membership scheme for all auditors who have successfully completed the IATA-managed recruitment, training and qualification process and are able to perform an ISAGO Audit;
- continuous oversight of audit and auditor performance by IATA.

The third ISAGO performance report of 2016 GDDB data analyzed 4500 reports, and confirmed the significant difference in reporting aircraft ground damage between ISAGO and Non-ISAGO participants. ISAGO GSP reporting culture improved by 8% compared to 2015. In addition the severity of aircraft ground damage was found to be less for ISAGO registered GSPs. However, data comparing 2016-2017 was not available at the time of writing this report.

Work is progressing within the ICAO Ground Handling Task Force (GHTF) to support recognition of ISAGO as a ground operation safety tool.

2.3 Predictive Safety Information

This section contains predictive safety information, which includes the analysis of 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 service 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 high risk safety categories (RS, LOC-I, CFIT, Traffic Collision, etc.) and trends appropriately monitored and analyzed.

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 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); 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 have been registered in this respect, availability of a reliable predictive safety information within the RASG-AFI region continues to pose challenges.

In order to address this challenge, ROST missions under the AFI Plan now incorporate rendering assistance to States with EI ≥ 60% in support of implementing SSP by phases as well as sharing experiences and best practices.

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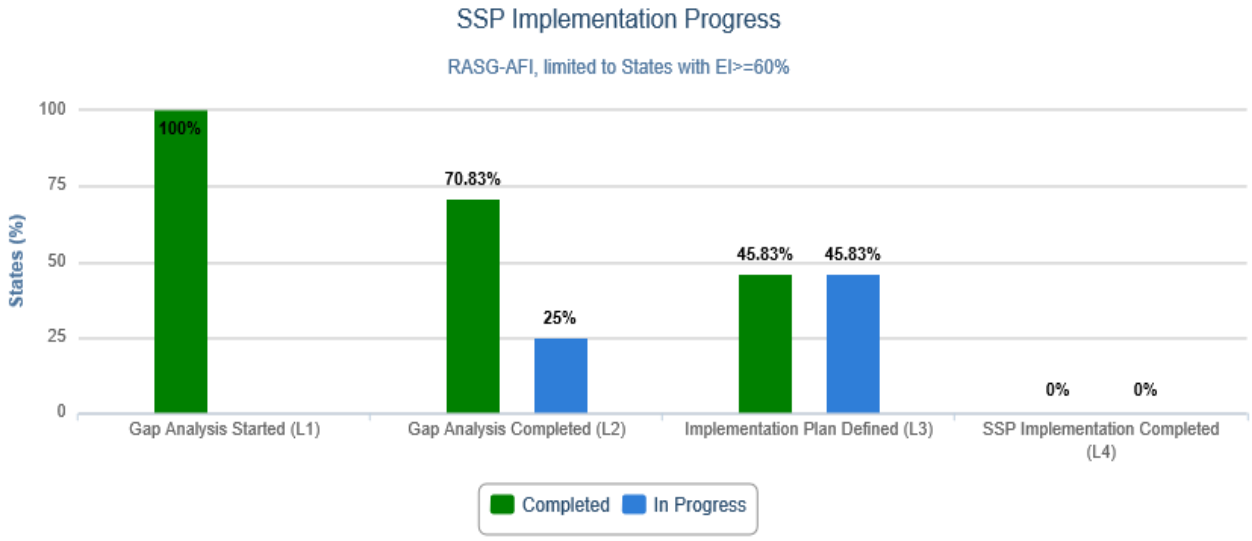
SSP is a framework that allows the State safety oversight authority and service providers to interact more effectively in the resolution of safety concerns. The SSP statistics release high level information about each Gap Analysis project. SSP implementation project has been measured for each State using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

A State having reviewed all Gap Analysis Questionnaire (GAQ) has reached **Level 2**. A State having reviewed AND defined actions for all GAQs has reached **Level 3.**

A State having completed all actions has reached **Level 4**.

Figure 15: RASG-AFI States' Safety Programme Implementation (SSP) Progress.



Source: ICAO iSTARS

Table 3: RASG-AFI States that have initiated the implementation of SSP.

Out of the 48 RASG-AFI States, none had so far attained Level 4 of SSP implementation. However, at the end of 2017, considerable progress had been registered in the implementation of SSP within the RASG-AFI Region: Eleven (11) 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 Seven (7) attained Level 1 and at various stages of attaining Level 2.

Code	State Name	Progress	Level (Up %)
BWA	Botswana	Gap Analysis Completed	L2 / 96.4% L3
BFA	Burkina Faso	Gap Analysis Completed	L2 / 85.5% L3
CPV	Cabo Verde	Implementation Plan Defined	L3 / 21.8% L4
CIV	Cote d'Ivoire	Gap Analysis Completed	L2 / 96.4% L3
GNQ	Equatorial Guinea	Gap Analysis Started	L1 / 01.8% L2
ETH	Ethiopia	Gap Analysis Completed	L2 / 90.9% L3
GMB	Gambia	Gap Analysis Completed	L2 / 96.4% L3
GHA	Ghana	Gap Analysis Started	L1 / 23.6% L2
KEN	Kenya	Implementation Plan Defined	L3 / 41.8% L4
MDG	Madagascar	Implementation Plan Defined	L3 / 52.7% L4
MLI	Mali	Implementation Plan Defined	L3 / 38.2% L4
MRT	Mauritania	Implementation Plan Defined	L3 / 20% L4
MUS	Mauritius	Implementation Plan Defined	L3 / 52.7% L4
NAM	Namibia	Gap Analysis Started	L1 / 07.3% L2
NER	Niger	Gap Analysis Started	L1 / 94.5% L2
NGA	Nigeria	Implementation Plan Defined	L3 / 43.6% L4
RWA	Rwanda	Gap Analysis Started	L1 / 81.8% L2
SEN	Senegal	Gap Analysis Started	L1 / 50.9% L2
ZAF	South Africa	Implementation Plan Defined	L3 / 63.6% L4
TGO	Togo	Implementation Plan Defined	L3 / 14.5% L4
UGA	Uganda	Gap Analysis Started	L1 / 47.3% L2
TZA	United Republic of Tanzania	Implementation Plan Defined	L3 / 32.7% L4
ZMB	Zambia	Implementation Plan Defined	L3 / 40% L4
ZWE	Zimbabwe	Gap Analysis Completed	L2 / 98.2% L3

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 RASG-AFI ATS Incidents Analysis Group (AIAG)/Air Nav. Infrastructure Safety

The RASG-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 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.

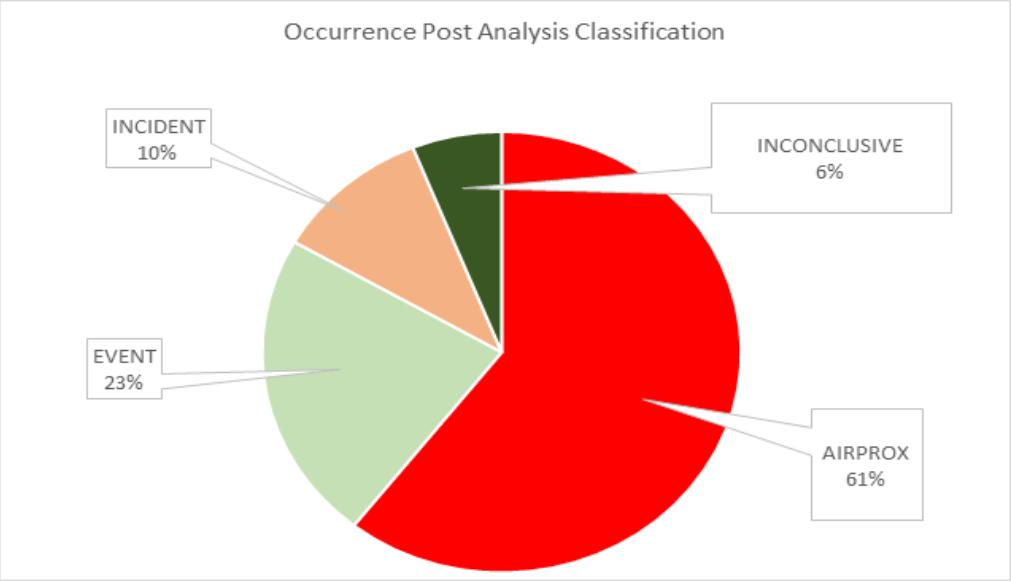
2.4.1 Fifteenth Meeting of AIAG (AIAG/15 - March 14 to 15, 2018)

The meeting which was convened by IATA was held at Holiday Inn in Sandton, Johannesburg and in attendance were: eighty-one (81) participants from eight (8) Airlines, eight (8) Air Navigation Service Providers (ANSPs), AFI Regional Monitoring Agency (ARMA), International Civil Aviation Organization (ICAO), International Federation of Airline Pilots Association (IFALPA), International Federation of Air Traffic Controllers Association (IFATCA), Federal Aviation Administration (FAA) and International Air Transport Association (IATA). The 15th AIAG meeting analyzed a total of sixty -eight (68) reports that were submitted either by operators or ANSPs for the year 2017.

Breakdown of the Analyzed 2017 Incidents was as follows:

Figure 16: Distribution of UCRs by Category after Analysis

The graph below shows the distribution by category after analysis of the sixty-six (66) UCRs by AIAG.

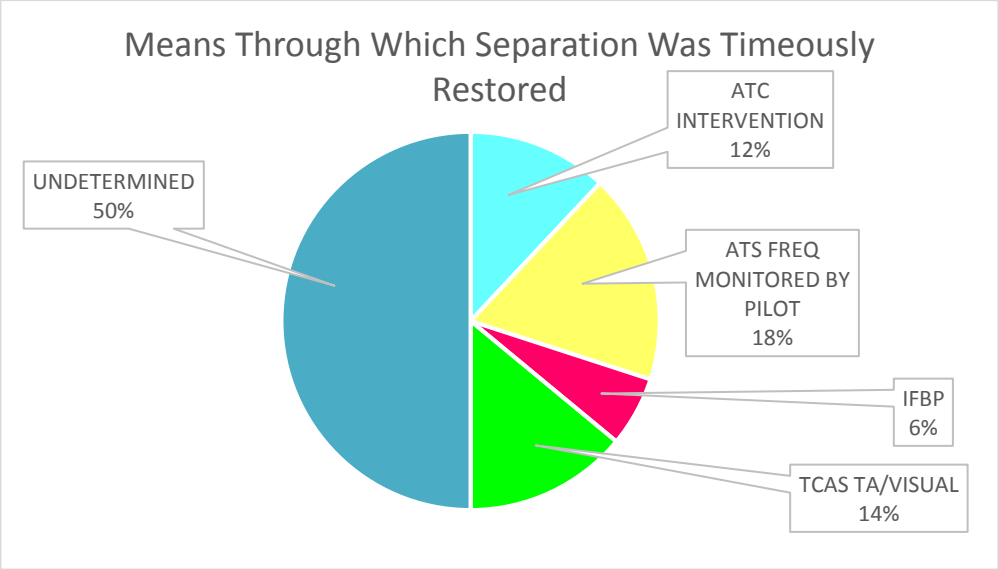


Source: IATA

In order to enhance the analysis process, it is vital that timely feedback is received from the ANSPs.

Figure 17: Means through which Separation Minima was timely restored

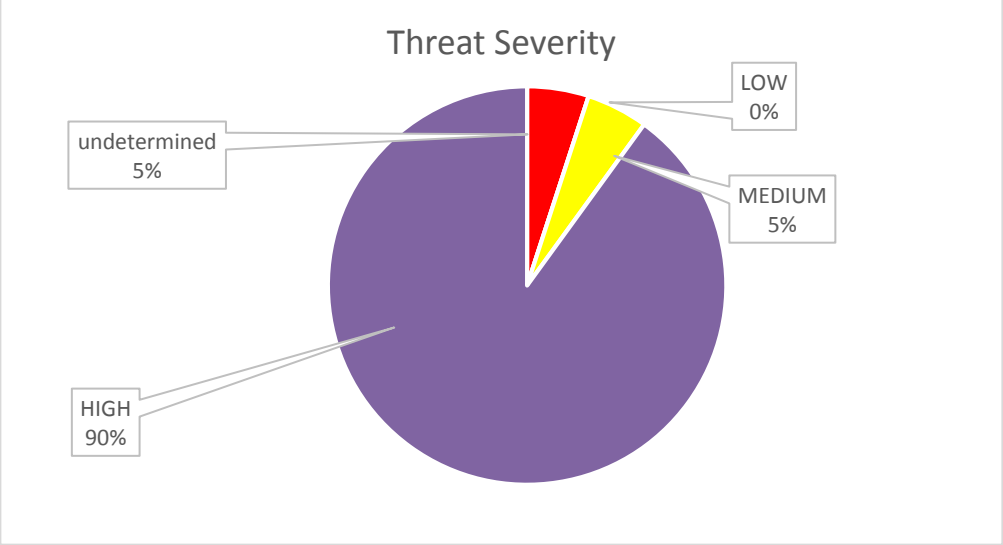
This graph below shows that 14% of separation among conflicting traffic was restored by use of TCAS; 6% by use of In-Flight Broadcast Procedure (IFBP); 18% by monitoring of ATS frequency by pilots; and 12% by ATC intervention.



Source: IATA

Figure 18: Threat Severity Levels

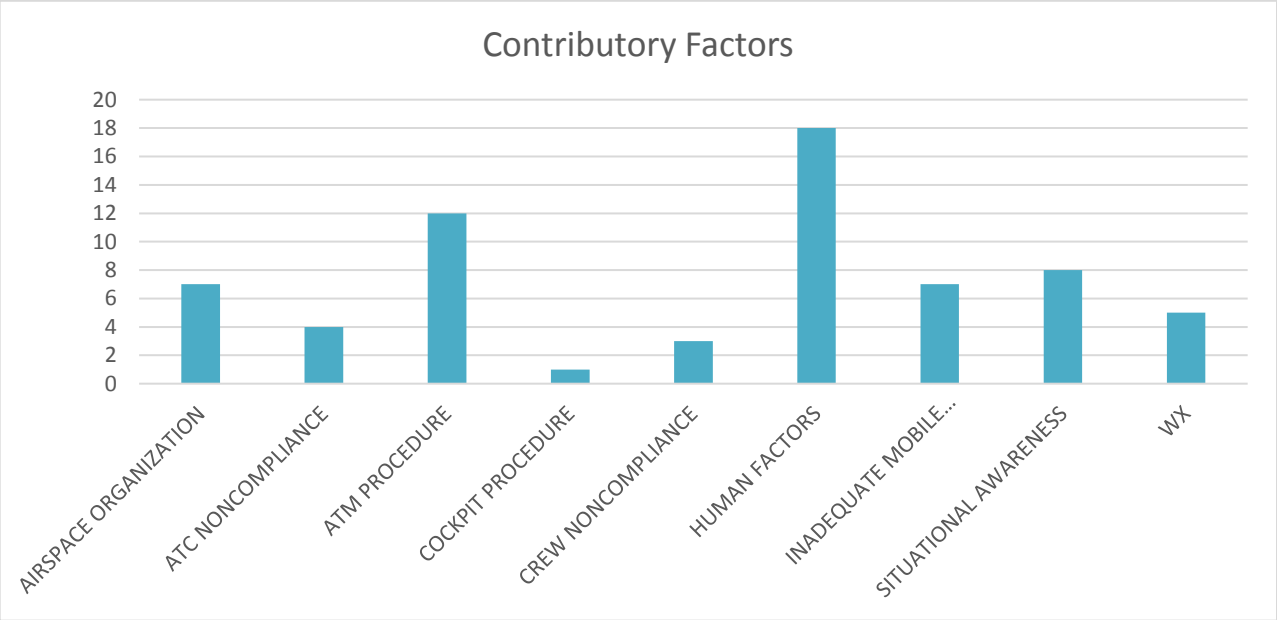
For those UCRs classified as AIRPROX, the threat levels of severity were as indicated in the graph below.



Source: IATA

Figure 19: UCRs within RASG AFI - Contributing Factors

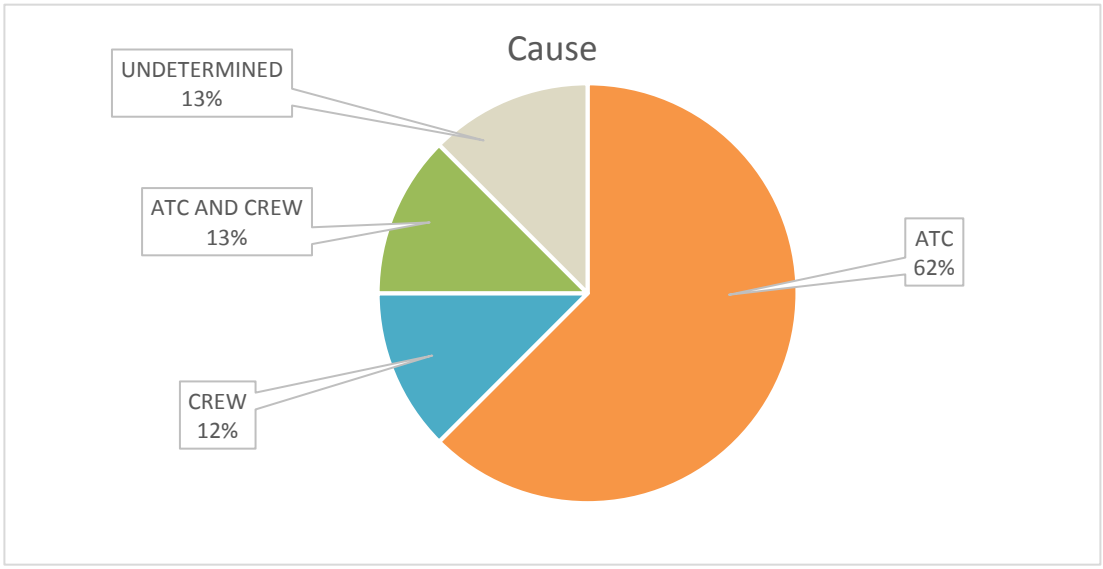
According to AIAG analysis the following graph shows the factors that contributed to the UCRs and the highest two (2) factors at eighteen (18) and twelve (12) count were Human factors and ATM Procedure.



Source: IATA

Figure 20: Causes of Incidents

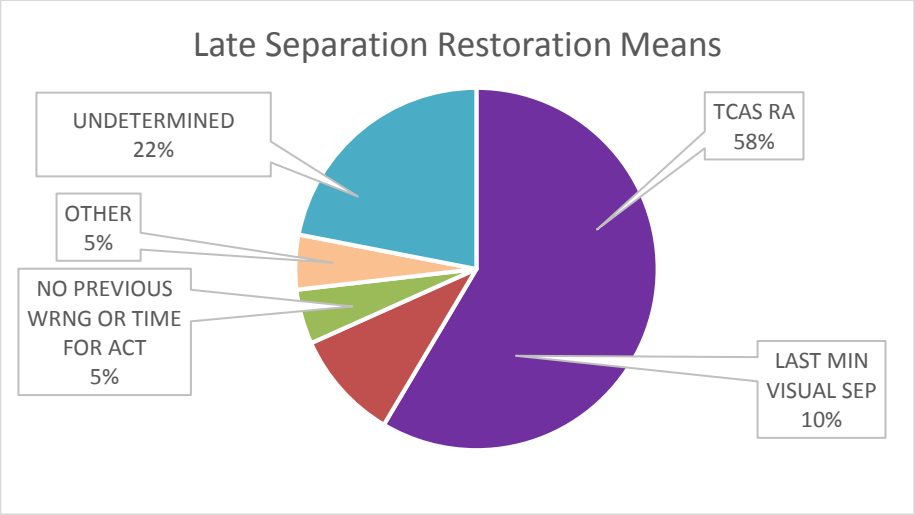
The graph below shows the percentage (%) of the party responsible for causing the occurrence with ATC responsible for 62%; Undetermined 13%, combination of ATC and Crew at 13% and Crew alone 12%.



Source: IATA

Figure 21:: Late Separation Restoration Means

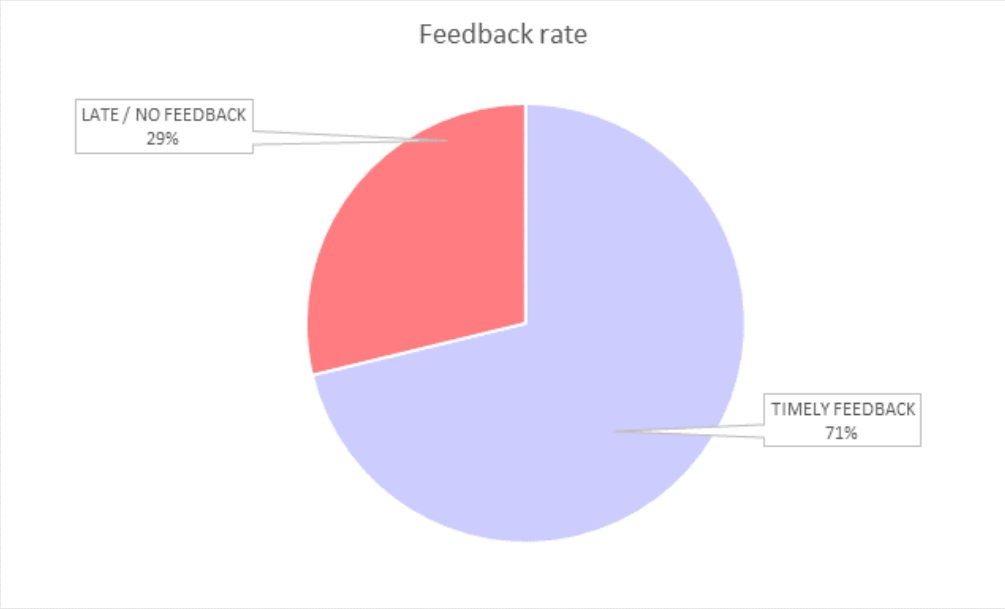
The graph shows the means used for late restoration of separation in cases where minima was compromised.



Source: IATA

Figure 22: UCR Feedback Rate

This graph shows percentage of timely feedback (71%) and late or no feedback (29)



Source: IATA

3 Conclusions and Recommendations

3.1 Conclusions

Based on the analyses, the following conclusions are drawn:

- On a positive note, the 2017 activities of RASG-AFI resulted in,
  - "Zero SSC" status in the WACAF Region maintained; and two (2) of the four (4) in the ESAF Region resolved. ;
  - Designation of States' focal points for the implementation of SSP within the AFI Region
  - The status of zero CFIT and LOC-I related accidents maintained. There were zero fatalities

- Continuing Challenges:
  - Runway Safety (RE) related accidents still remained the most predominant and should continue to be a main priority for Safety Enhancement Indicators (SEI) in the RASG-AFI Region;
  - Although zero CFIT and |LOC-I related accidents were reported they continue to be under the high risk category;
  - Establishment and strengthening of autonomous Civil Aviation Authorities with independent regulatory oversight, sustainable sources of funding and resources to carry out effective safety oversight and regulation of the aviation industry continue to be a challenge;
  - Securing of required funding for the implementation of the identified projects to assist States improve EI score and resolve SSCs;
  - Constraints in conducting 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 for recognition of IOSA and ISSA as effective safety mechanisms and airlines to obtain certification as appropriate;
  - RASG-AFI (Only thirty-seven (37) out of one hundred and thirty three133 certified);
  - 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 maturity.

3.2 Recommendations

- The two remaining States with significant safety concerns (SSCs) should address these concerns as a priority;
- The Offices of ICAO President/Secretary General should continue to rigorously pursue the engagement of Heads of States/Government Ministers responsible for aviation in a bid to establish autonomous CAAs and enhancing State commitment in implementing the Abuja Safety Targets;
- RASC should formulate strategies for the effective implementation of the revised Abuja Safety Targets, which incorporate the ANS targets and indicators;
- As an outcome of the RSOO Forum in Swaziland in March 2017, 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 and provide feedback on progress made towards certification of International Aerodromes;
- AFCAC to review the effectiveness of the AFI-CIS Programme and vigorously pursue its implementation, particularly with the resolution of the two remaining SSCs;
- ROST Assistance Missions should include ASRT recommendations to be part of the issues that require follow-up with States for their effective implementation.

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 the Congo
Djibouti
Equatorial Guinea
Eritrea
Ethiopia
Gabon
Gambia
Ghana
Guinea-Conakry
Guinea-Bissau
Kenya
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania
Mauritius
Mozambique
Namibia
Niger
Nigeria
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia
South Africa
South Sudan
Swaziland
Togo
Uganda
United Republic of Tanzania
Zambia
Zimbabwe

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 2017

Botswana

Burkina Faso

Cape Verde

Cote d'Ivoire

Eq. Guinea

Ethiopia

Gambia

Ghana

Kenya

Madagascar

Mali

Mauritania

Mauritius

Namibia

Niger

Nigeria

Rwanda

Senegal

South Africa

Tanzania

Togo

Uganda

Zambia

Zimbabwe

Appendix 4 –Certified International Aerodromes within the RASG-AFI Region

In the spirit of "No Country Left Behind" initiative, the AFI Plan has implemented a project for aerodromes certification. The set target is that at least 45% of States should develop capacity to certify their international aerodromes by the end of 2016. In this regard and based on objective established criteria, sixteen priority States of the AFI region were identified for assistance in the certification of one international aerodrome. The following States/aerodromes constitute the scope of this project:

- WACAF Region: Burkina Faso/Ouagadougou, Cameroon/Yaoundé, Côte d'Ivoire/Abidjan, The Gambia/Banjul, Mali/Bamako, Niger/Niamey, Nigeria/Abuja and Senegal/Dakar.
- ESAF Region: Angola/Luanda, Botswana/Gaborone, Mozambique/Maputo, Namibia/Windhoek, Seychelles/Victoria, Swaziland/Mbabane, Uganda/Kampala, Zambia/Lusaka for the
- Four other airports were added to the Project at the States' request (Gabon/Libreville under the ongoing SAFE Project, Nigeria/Lagos, Rwanda/Kigali and Senegal/Diass), knowing that they will support the related costs.

The Project uses experience and expertise from States that have already certified at least one international aerodrome; and Regional Organizations (RSOOs).

Launching meetings were followed by familiarization workshops from which States submitted their action plan for the implementation including the resolution of deficiencies found by the APEX reviews of these airports.

Appendix 5: 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:

From Right to Left:

Papa Atoumane FALL……..…….AFCAC

Maury SECK…….……..AIRBUS

Kebba Lamin JAMMEH ……ICAO (Secretariat)

Blessing KAVAI ……..……...IATA (Chairman)

Chamsou D. ANDJORIN…….…..BOEING

James DANGA ……..…..……..AFCAC

ABBREVIATIONS

ACC – Area Control Centre

ACI – Airports Council International

AFI – Africa and Indian Ocean

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

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 Operation 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

SSP – State Safety Programme

SST – Safety Support Team

TWY – Taxiway

UCR-Unsatisfactory Condition Report

UNK - Unknown

USOAP – Universal Safety Oversight Audit Programme

WACAF – Western and Central Africa

3 per. Mov. Avg. (AFI) – 3 Year Moving Average (takes average rate over 3 years)


AFCAC • CAFAC


IATA


ACI
AFRICA


canso
civil air navigation services organisation


IFATCA


FLIGHT
SAFETY
FOUNDATION


IFALPA
The Global Voice of Pilots


AIRBUS


BOEING


ATNS


ASECNA


ICAO