



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Eighth Meeting of the Africa-Indian Ocean Regional Aviation Safety Group (RASG-AFI/8)

Kigali, Rwanda, 10 November 2022

Agenda Item 3: 3.2. Safety enhancement initiatives (SEIs) linked to the associated GASP targets and indicators.

(Presented by Secretariat)

SUMMARY

This working paper reports on the Safety Enhancement Initiatives (SEIs) that have been implemented in the RASG-AFI region, the consequential achievements and challenges and the priorities to adopt in order to improve aviation safety in the region.

The action by the Meeting is in **paragraph 3**

REFERENCE(S):

Global Aviation Safety Plan (GASP), 2020-2022 Edition

Global Aviation Safety Plan (GASP), 2023-2025 Edition

Related ICAO Strategic Objective:

This working paper relates to the Strategic Objectives on Safety.

1 INTRODUCTION

1.1 The ICAO *Global Aviation Safety Plan (GASP)* (Doc.10004) is the global strategy for the continuous improvement of aviation safety and its purpose is to continually reduce fatalities, and the risk of fatalities. The GASP lays down a series of goals, targets and indicators.

1.2 The GASP also identifies global high-risk categories of occurrences (G-HRCs) to assist States, regions and industry in their respective safety planning and implementation. The G-HRCs are five in number: controlled flight into terrain; loss of control in-flight; mid-air collisions; runway excursions and runway incursions.

1.3 In addition, the GASP provides for a global aviation safety roadmap, which is an action plan to assist the aviation community in achieving the GASP goals. The roadmap outlines a structured, common frame of reference and presents a series of SEIs linked to the GASP goals and targets.

2 DISCUSSION

GASP goals, targets and indicators

2.1 The GASP aspirational safety goal is to achieve and maintain zero fatalities in commercial operations by 2030 and beyond. A series of goals to support this aspirational safety goal are:

Goal 1 is to achieve a continuous reduction of operational safety risks.

Goal 2 calls for all States to strengthen their safety oversight capabilities.

Goal 3 calls for the implementation of effective State safety programmes.

Goal 4 calls for States to increase collaboration at the regional level to enhance safety.

Goal 5 aims to expand the use of industry programmes and safety information-sharing networks.

Goal 6 focuses on the appropriate infrastructure needed to support safe operations.

2.2 The GASP goals, targets and examples of indicators are illustrated in Appendix A.

Structure of the Roadmap and SEIs

2.3 The roadmap includes specific SEIs targeted to three different stakeholders: States; Regions (refers to a group of States within a region, as well as RASGs, regional organizations, RSOOs, RAIOS and other regional entities); and Industry.

2.4 The roadmap is composed of two elements:

- a). *organizational challenges (ORG)* — provides SEIs related to States' safety oversight capabilities, the implementation of SSPs, and the industry's implementation of SMS. It contains two distinct components:
 - 1). State safety oversight system; and
 - 2). SSP, including service providers' SMS.
- b). *operational safety risks (OPS)* — provides SEIs related to a continuous reduction of operational safety risks and regional and industry safety risk management activities to address the five HRCs.

2.5 The SEIs for ORG and OPS are illustrated in Appendices B and C respectively.

Achievements, Challenges and Priorities

2.6 The RASG-AFI States have achieved significant progress in implementing SEIs. However, more efforts are needed to improve further.

2.7 In terms of ORG-related SEIs, specifically State safety oversight system, the current average USOAP score for RASG-AFI States is 56.95%, which is below the world average of 69.32%. Moreover, only 21% of the States have achieved the GASP target of 75% EI.

2.8 In terms of ORG-related SEIs, specifically SSP, including service providers' SMS, only 67.13% of the States have implemented the foundation of an SSP, contrary to the GASP target of 100% of the States by 2022. In addition, except for one State, no RASG-AFI State has reported having implemented an effective SSP. The target for this goal is by the year 2025.

2.9 The CEs with the lowest group EIs are:

- a) CE-8, *Resolution of safety issues*, at 31.50 per cent;
- b) CE-7, *Surveillance obligations*, at 41.33 per cent; and
- c) CE-6, *Licensing, certification, authorization and approval obligations*, at 54.40 per cent; and

2.10 The audit areas with the lowest group EIs are:

- a) *aircraft accident and incident investigation (AIG)*, at 42.32 per cent;
- b) *aerodromes and ground aids (AGA)*, at 48.01 per cent; and
- c) *air navigation services (ANS)*, at 55.79 per cent.

- 2.11 Key ORG SEIs-related implementation challenges include:
- a) inability to attract, recruit, train and retain qualified and sufficient technical personnel;
 - b) inadequate independent accident and incident investigation processes;
 - c) insufficient allocation of resources to enable effective safety oversight;
 - d) ineffective safety risk management at the national level;
 - e) inadequate development and implementation of Corrective Action Plans (CAPs), including to SSP Foundation PQs and posting results thereof on the USOAP CMA OLF; and
 - f) inadequate conduct of SSP Gap Analysis and development and implementation of SSP Implementation Plans and posting thereof on the ICAO iSTARs web portal.
- 2.12 In terms of OPS-related SEIs, statistics show that accident rate within the RASG for scheduled commercial flights on aeroplanes above 5700Kg MTOW is trending up and above world average. In the last ten years, no accidents nor fatalities have occurred and attributed to three of the G-HRCs: controlled flight into terrain; loss of control in-flight; mid-air collisions. During the same period under review, one accident with no fatalities has occurred and attributed to runway safety, one of the G-HRCs. Consequently, runway safety accounts for the highest risk distribution.
- 2.13 Key OPS SEIs-related implementation challenges include inadequate measures to mitigate contributing factors to G-HRC accidents and incidents, including controlled flight into terrain; loss of control in-flight; mid-air collisions; runway excursions; and runway incursions.
- 2.14 The achievements, challenges and priorities related to the implementation of SEIs are illustrated in Appendices D and E.

3 ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) Encourage aviation stakeholders, including States; Regions (refers to a group of States within a region, as well as RASGs, regional organizations, RSOOs, RAIOS and other regional entities); and Industry to cooperate, collaborate and communicate in a bid to fully implement Safety Enhancement Initiatives (SEIs);
 - b) Urge States to:
 - 1) allocate sufficient resources to enable effective safety oversight;
 - 2) enhance ability to attract, recruit, train and retain qualified and sufficient technical personnel;
 - 3) ensure independent accident and incident investigation processes; and
 - 4) enhance measures to mitigate contributing factors to G-HRC accidents and incidents.

APPENDIX A: GASP goals, targets and indicators

| <i>ICAO ASPIRATIONAL SAFETY GOAL "ZERO FATALITIES BY 2030 AND BEYOND"</i> | | |
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| <i>Goal</i> | <i>Target</i> | <i>Examples of Indicators</i> |
| <p>Goal 1: Achieve a continuous reduction of operational safety risks</p> | <p>1.1 Maintain a decreasing trend of global accident rate.</p> | <ul style="list-style-type: none"> • Number of accidents • Number of accidents per million departures (accident rate) • Number of fatal accidents • Number of fatal accidents per million departures (fatal accident rate) • Number of fatalities • Number of fatalities per passengers carried (fatality rate) • Percentage of occurrences related to high-risk categories (HRCs) |
| <p>Goal 2: Strengthen States' safety oversight capabilities</p> | <p>2.1 All States to improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows:</p> <ul style="list-style-type: none"> a) by 2024 – 75 per cent EI score b) by 2026 – 85 per cent EI score c) by 2030 – 95 per cent EI score | <ul style="list-style-type: none"> • Number of States that met the EI score as per the timelines • Number of States that have fully implemented the priority PQs • Percentage of required corrective action plans (CAPs) submitted by States (using OLF) • Percentage of completed CAPs per State (using OLF) |
| <p>Goal 3: Implement effective State safety programmes (SSPs)</p> | <p>3.1 By 2023, all States to implement the foundation of an SSP.</p> | <ul style="list-style-type: none"> • Number of States having implemented the SSP foundation PQs • Percentage of required CAPs related to the SSP foundation PQs submitted by States (using OLF) • Percentage of required CAPs related to the SSP foundation PQs completed per State (using OLF) |
| | <p>3.2 By 2024, all States to publish a national aviation safety plan (NASP).</p> | <ul style="list-style-type: none"> • Number of States having published their NASP |

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|--|------------|--|---|
| | 3.3 | All States to work towards an effective SSP as follows: a) by 2025 – Present ² b) by 2028 – Present and effective | <ul style="list-style-type: none"> • Number of States having an SSP that is present and effective • Number of States having an SSP that is present and effective • Number of States that require applicable service providers under their authority to implement an SMS |
| Goal 4: Increase collaboration at the regional level | 4.1 | By 2023, States that do not expect to meet GASP Goals 2 and 3 to seek assistance to strengthen their safety oversight capabilities or facilitate SSP implementation. | <ul style="list-style-type: none"> • Number of States seeking assistance, by using a regional safety oversight mechanism, another State's or other safety oversight organization's ICAO-recognized functions • Number of States that submitted a draft NASP to an ICAO Regional Office • Number of States registered in the NASP Online Community |
| | 4.2 | By 2023, all regions to publish an updated regional aviation safety plan (RASP), in line with the 2023–2025 edition of GASP. | <ul style="list-style-type: none"> • Number of regions having published an updated RASP |
| | 4.3 | By 2025, all States to contribute information on operational safety risks, including SSP safety performance indicators (SPIs), and emerging issues, to their respective regional aviation safety group (RASG). | <ul style="list-style-type: none"> • Number of States registered to the Secure Portal on Operational Safety Risks and Emerging Issues • Number of States that are sharing their SSP SPIs with RASGs • Number of reports received via the Secure Portal on Operational Safety Risks and Emerging Issues and validated • Number of studies/analyses conducted by RASGs based on reports received via Secure Portal on Operational Safety Risks and Emerging Issues • Percentage of safety enhancement initiatives completed by RASGs on safety risk management • Number of regions having a mechanism to collect and process data on operational safety risks and emerging issues |

1. The terms “present” and “present and effective” are based on the maturity levels established in the ICAO SSP Implementation Assessment (SSPIA).

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|--|-------------------|---|--|
| <p>Goal 5: Expand the use of industry programmes and safety information sharing networks by service providers</p> | <p>5.1</p> | <p>Maintain an increasing trend in industry's contribution in, the implementation of SSPs, and information-sharing information-sharing safety information sharing networks to States and regions to assist in the development of NASPs and RASPs.</p> | <ul style="list-style-type: none"> • Number of service providers using globally harmonized metrics for their SPIs • Percentage of service providers participating in the corresponding ICAO-recognized industry assessment programmes • Number of States and regions reporting increased and improved provision of safety information by industry to assist in the development of NASPs and RASPs • Number of RASPs developed in consultation with industry • Number of States having established safety data collection and processing systems (SDCPS) to facilitate participation in a safety information-sharing network • Number of service providers contributing to an SDCPS or a safety information sharing network |
| <p>Goal 6: Ensure the appropriate infrastructure is available to support safe operations</p> | <p>6.1</p> | <p>By 2025, maintain an increasing trend of States with air navigation and aerodrome infrastructure that meet relevant ICAO Standards.</p> | <ul style="list-style-type: none"> • Number or percentage of infrastructure-related air navigation deficiencies by State, against the regional air navigation plans • Number or percentage of States having implemented infrastructure-related PQs linked to the basic building blocks |

Appendix B: Safety enhancement initiative—ORGANIZATIONAL CHALLENGES (ORG) ROADMAP

1. STATES

1.1 Component 1— State safety oversight system

1.1.1 Phase 1—Establishment of a safety oversight framework (CE-1 to CE-5)

- SEI-1 — Consistent implementation of ICAO SARPs at the national level
- SEI-2 — Development of a comprehensive regulatory oversight framework
- SEI-3 — Establishment of an independent accident and incident investigation authority
- SEI-4 — Strategic allocation of resources to enable effective safety oversight
- SEI-5 — Qualified technical personnel to support effective safety oversight
- SEI-6 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
- SEI-7 — Provision of the primary source of safety information to ICAO by completing, submitting and updating all relevant documents and records

1.1.2 Phase 2—Implementation of a safety oversight system (CE-6 to CE-8)

- SEI-8 — Consistent implementation of ICAO SARPs at the national level
- SEI-9 — Continued implementation of and compliance with ICAO SARPs at the national level
- SEI-10 — Strategic allocation of resources to enable effective safety oversight
- SEI-11 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
- SEI-12 — Continued provision of the primary source of safety information to ICAO by updating all relevant documents and records as progress is made

1.2 Component 2— State safety programme

- SEI-13 — Start of SSP implementation at the national level
- SEI-14 — Strategic allocation of resources to start SSP implementation
- SEI-16 — Strategic collaboration with key aviation stakeholders to complete SSP implementation
- SEI-17 — Establishment of safety risk management at the national level (step 1)
- SEI-18 — Establishment of safety risk management at the national level (step 2)
- SEI-19 — Acquisition of resources to increase the proactive use of risk modelling capabilities
- SEI-20 — Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities
- SEI-21 — Advancement of safety risk management at the national level

2. REGIONS

2.1 Component 1 — State safety oversight system

2.1.1 Phase 1 — Establishment of a safety oversight framework (CE-1 to CE-5)

- SEI-1 — Consistent implementation of ICAO SARPs at the regional level
- SEI-2 — Establishment of an independent regional accident and incident investigation process, consistent with Annex 13 — Aircraft Accident and Incident Investigation
- SEI-3 — Regional safety enhancement initiatives to support consistent coordination of regional programmes in establishing adequate safety oversight capabilities
- SEI-4 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
- SEI-5 — Provision of the regional safety information to ICAO by asking States to complete, submit and update all relevant documents and records

2.1.2 Phase 2 — Implementation of a safety oversight system (CE-6 to CE-8)

- SEI-6 — Continued implementation of and compliance with ICAO SARPs at the regional level
- SEI-7 — Regional safety enhancement initiatives to support consistent coordination of regional programmes in implementing adequate safety oversight capabilities
- SEI-8 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
- SEI-9 — Continued provision of the primary source of regional safety information to ICAO by asking States to update all relevant documents and records as progress is made

2.2 Component 2 — State safety programme

- SEI-10 — Start of promotion of SSP implementation at the regional level
- SEI-11 — Regional safety enhancement initiatives to support consistent coordination of regional programmes for SSP implementation
- SEI-12 — Strategic collaboration with key aviation stakeholders to support SSP implementation
- SEI-13 — Establishment of safety risk management at the regional level
- SEI-14 — Regional allocation of resources to support continued development of the proactive use of risk modelling capabilities
- SEI-15 — Regional collaboration with key aviation stakeholders to support the proactive use of risk modelling
- SEI-16 — Advancement of safety risk management at the regional level

3. INDUSTRY

3.1 Component 1 — STATE SAFETY OVERSIGHT SYSTEM

3.1.1 Phase 1 — Establishment of a safety oversight framework (CE-1 to CE-5)

- SEI-1 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner

3.1.2 Phase 2 — Implementation of a safety oversight system (CE-6 to CE-8)

- SEI-2 — Improvement of industry compliance with applicable regulations

SEI-3 — Allocation of industry resources to enable effective safety oversight

SEI-4 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner

3.2 Component 2 — State safety programme

SEI-5 — Improvement of industry compliance with applicable SMS requirements

SEI-6 — Resources for service providers to effectively implement SMS

SEI-7 — Strategic collaboration with key aviation stakeholders to complete SSP implementation

SEI-8 — Establishment of safety risk management at the service provider level (step 1)

SEI-9 — Establishment of safety risk management at the service provider level (step 2)

SEI-10 — Allocation of industry resources to support continuous improvement of SSP and SMS

SEI-11 — Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities

SEI-12 — Advancement of safety risk management at the service provider level

Appendix C: OPERATIONAL SAFETY RISKS (OPS) ROADMAP

1. CONTROLLED FLIGHT INTO TERRAIN (CFIT)

- States:** Mitigate contributing factors to the risk of CFIT
- Regions:** Mitigate contributing factors to CFIT accidents and incidents
- Industry:** Mitigate contributing factors to CFIT accidents and incidents

2. LOSS OF CONTROL IN-FLIGHT (LOC-I)

- States:** Mitigate contributing factors to LOC-I accidents and incidents
- Regions:** Mitigate contributing factors to LOC-I accidents and incidents
- Industry:** Mitigate contributing factors to LOC-I accidents and incidents

3. MID-AIR COLLISION (MAC)

- States:** Mitigate contributing factors to MAC accidents and incidents
- Regions:** Mitigate contributing factors to MAC accidents and incidents
- Industry:** Mitigate contributing factors to MAC accidents and incidents

4. RUNWAY EXCURSION (RE)

- States:** Mitigate contributing factors to RE accidents and incidents
- Regions:** Mitigate contributing factors to RE accidents and incidents
- Industry:** Mitigate contributing factors to RE accidents and incidents

5. RUNWAY INCURSION (RI)

- States:** Mitigate contributing factors to RI accidents and incidents
- Regions:** Mitigate contributing factors to RI accidents and incidents
- Industry:** Mitigate contributing factors to RI accidents and incidents

Appendix D: RASG-AFI USOAP Results

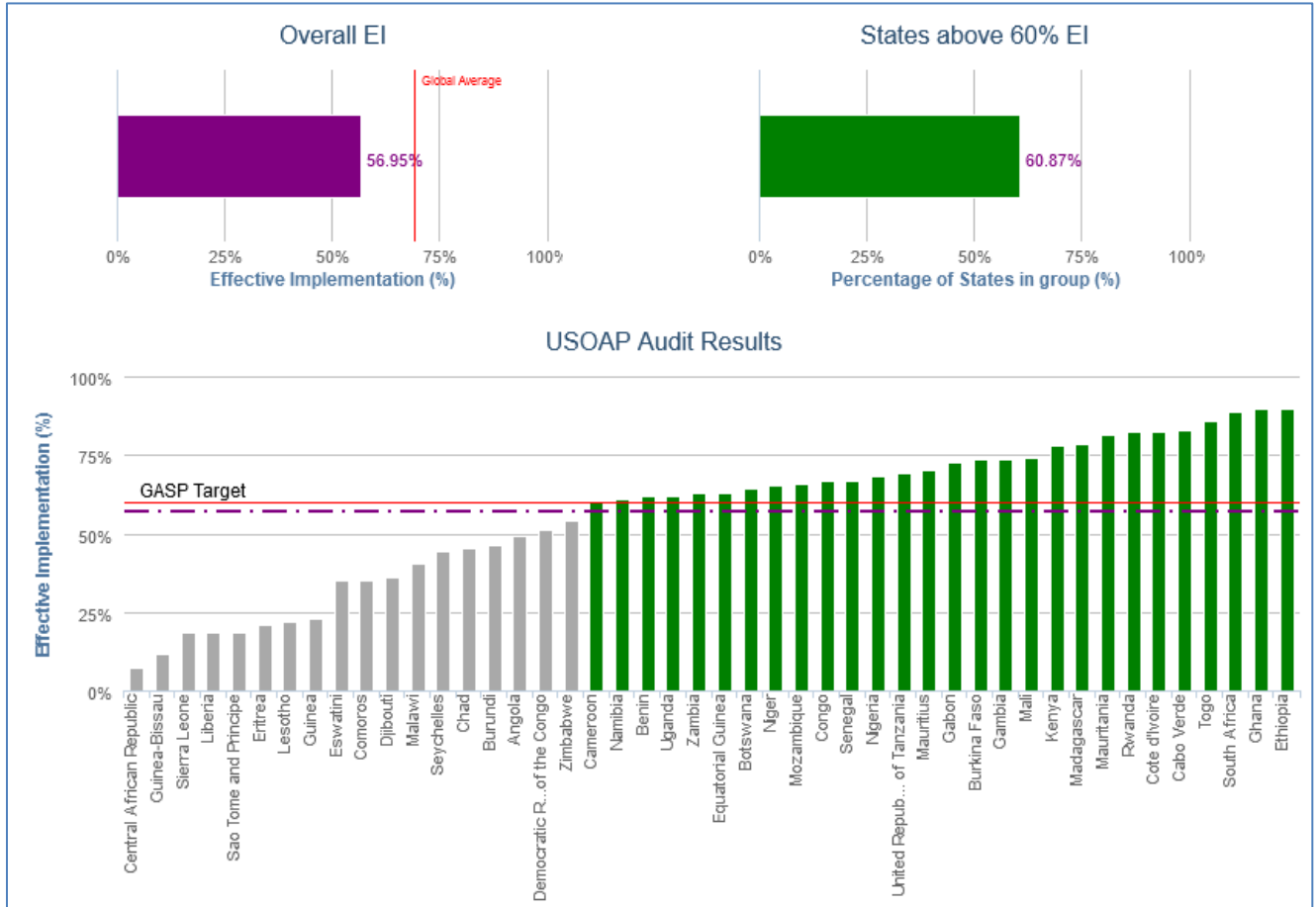


Figure 1: RASG-AFI USOAP Results

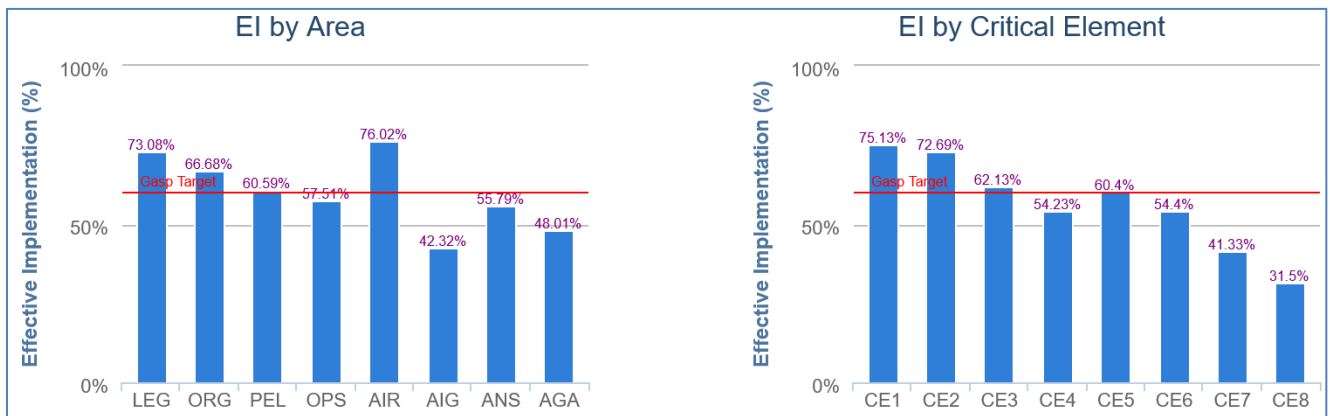


Figure 2: RASG-AFI USOAP Results by Area and Critical Element

Appendix E: RASG-AFI Accident Statistics

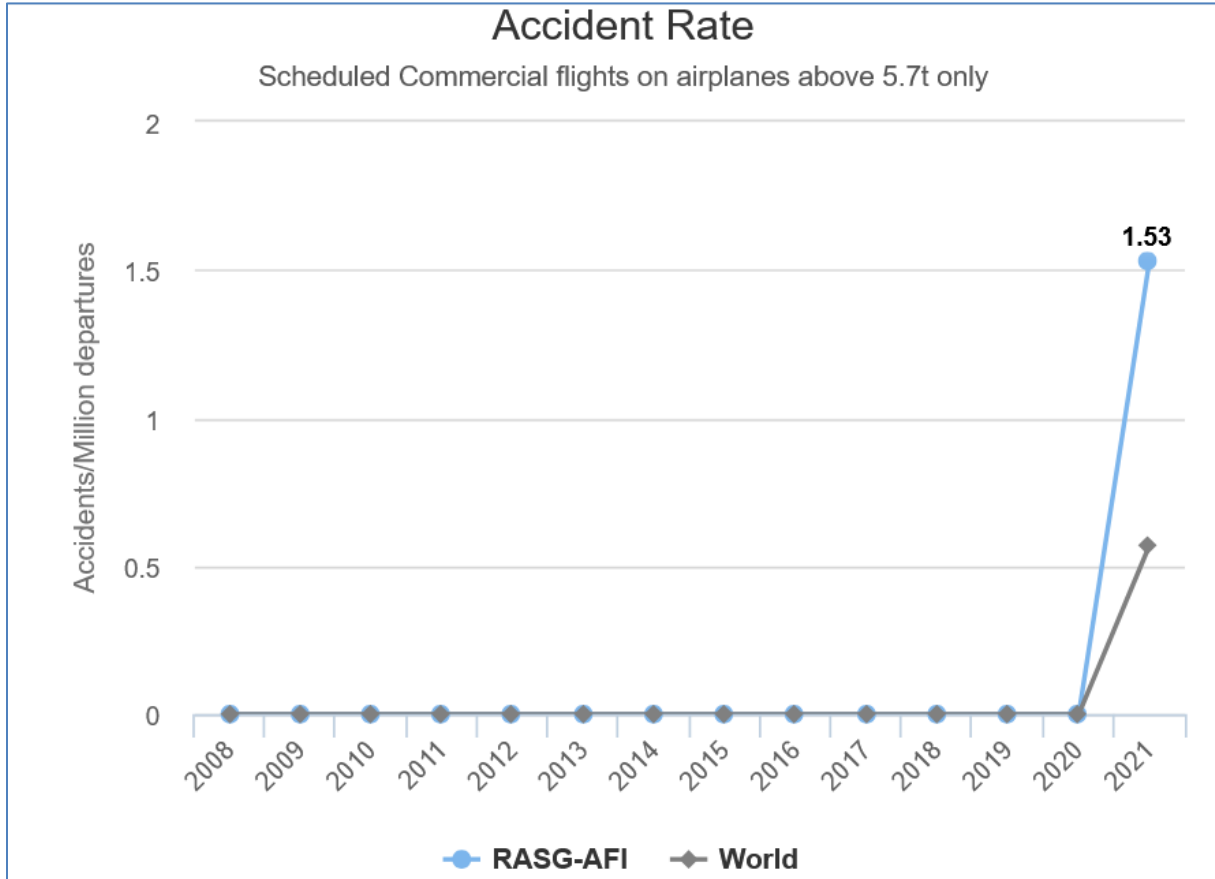


Figure 1: Accident Rate

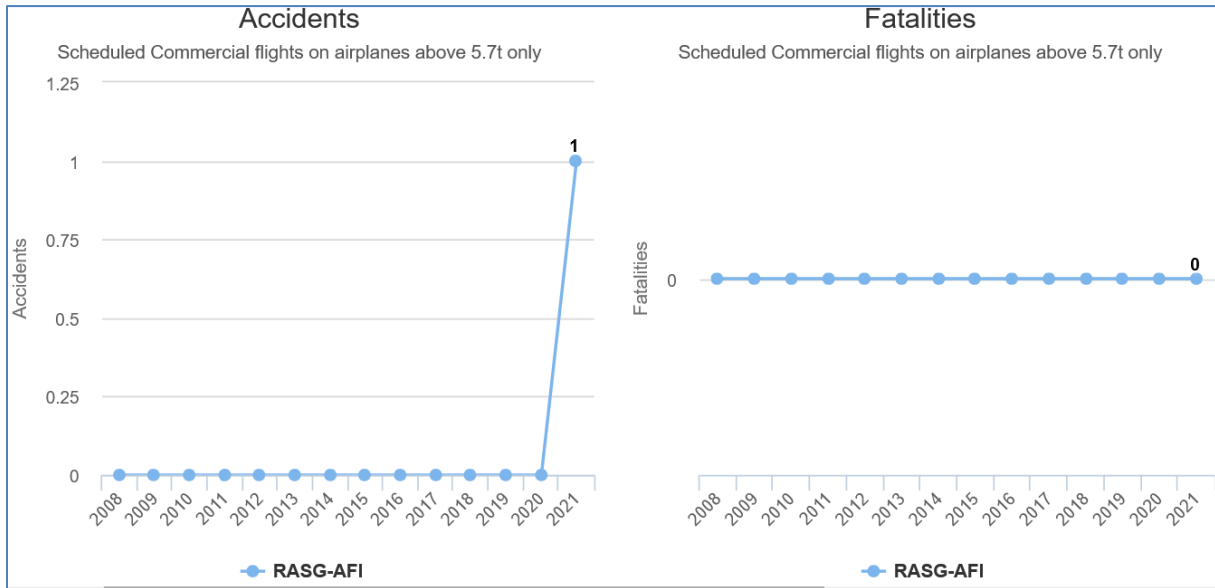


Figure 2: Accidents and Fatalities

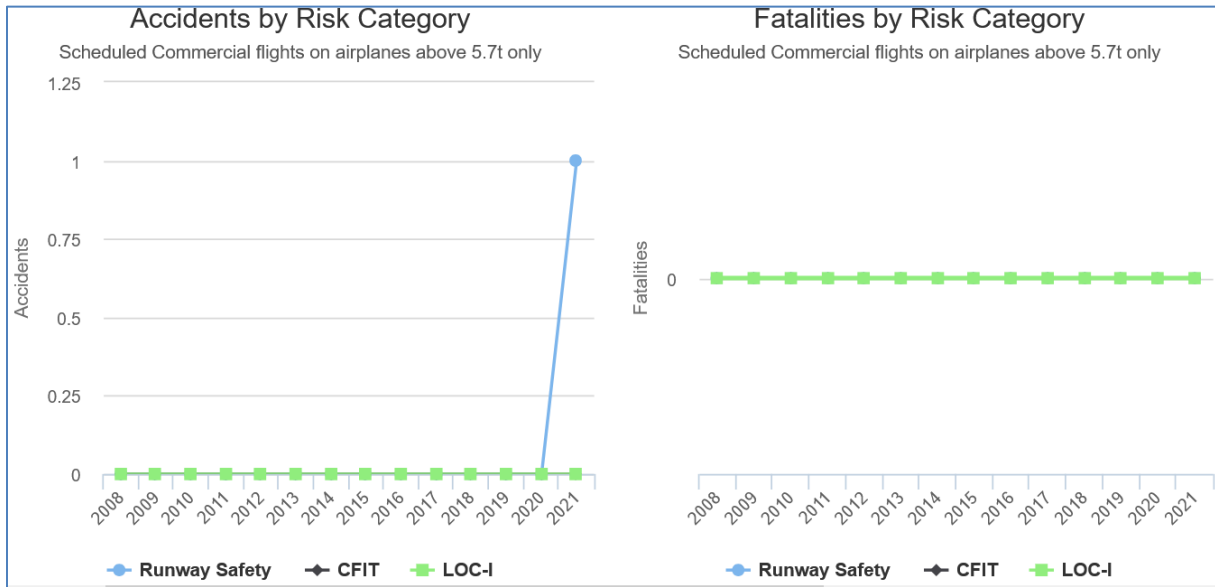


Figure 3: Risk Category

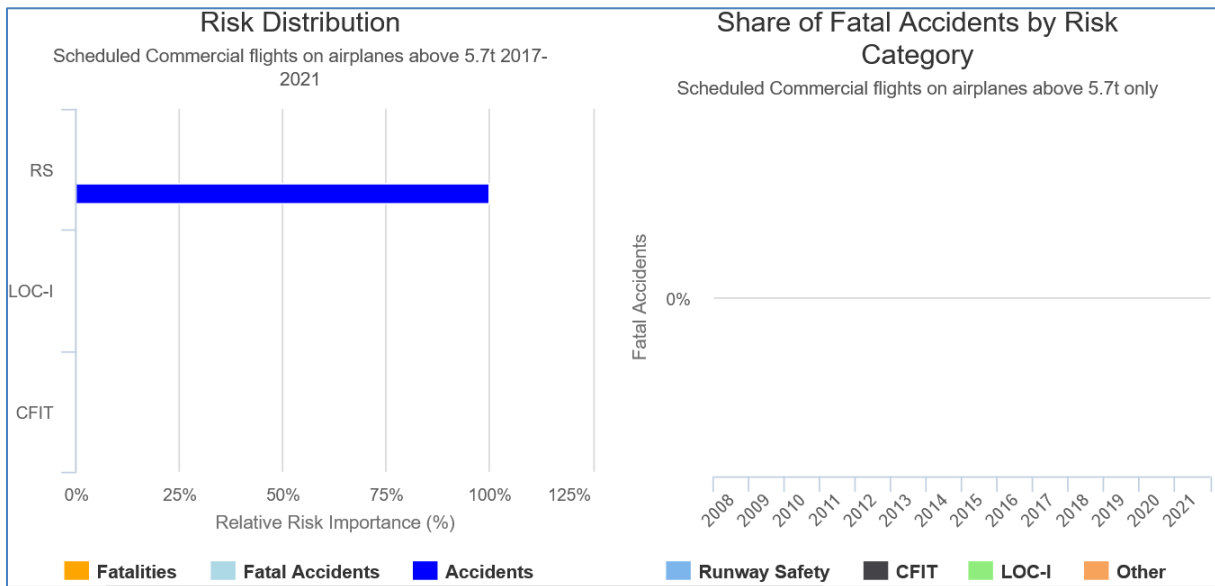


Figure 4: Risk Category Risk