Maldives CAA
Republic of Maldives

The Republic of Maldives

State Safety Programme

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Table of Contents

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Distribution List

The State Safety Programme document and any changes to it shall be distributed preferably by email to the following entities within 10 working days of approval.

Entity	Type
Ministry of Transport and Civil Aviation	PDF
Ministry of Defence	PDF
Maldives Civil Aviation Authority	Paper Copy / PDF
Accident Investigation Coordinating Committee	PDF
Coast Guard, Maldives National Defence Force	PDF
Maldives Meteorological Service	PDF
Public	PDF (Website)

Executive Summary

Aviation is an industry of national strategic importance to the Maldives. The wide dispersion of the population, coupled with our remote location means air transport is *the* link that connects our people with each other and the rest of the world. It is also vital to our economy with the direct, indirect and induced effects of aviation accounting for 37% of the national GDP.

Needless to say we must adopt proactive strategies to strengthen aviation in the Maldives. These strategies must embrace both the safety and economics of this sector as it continues to expand at a rapid pace.

The State Safety Programme initiative developed by the International Civil Aviation Organisation, provides a robust framework to effectively and efficiently manage aviation safety. The Maldives is required to implement such a programme as a signatory to the Convention on International Civil Aviation.

The State Safety Programme described in this document is the national-level description of our safety management system. It maps out how we intend to enhance aviation safety in the Maldives and maintain the confidence of our flying public.

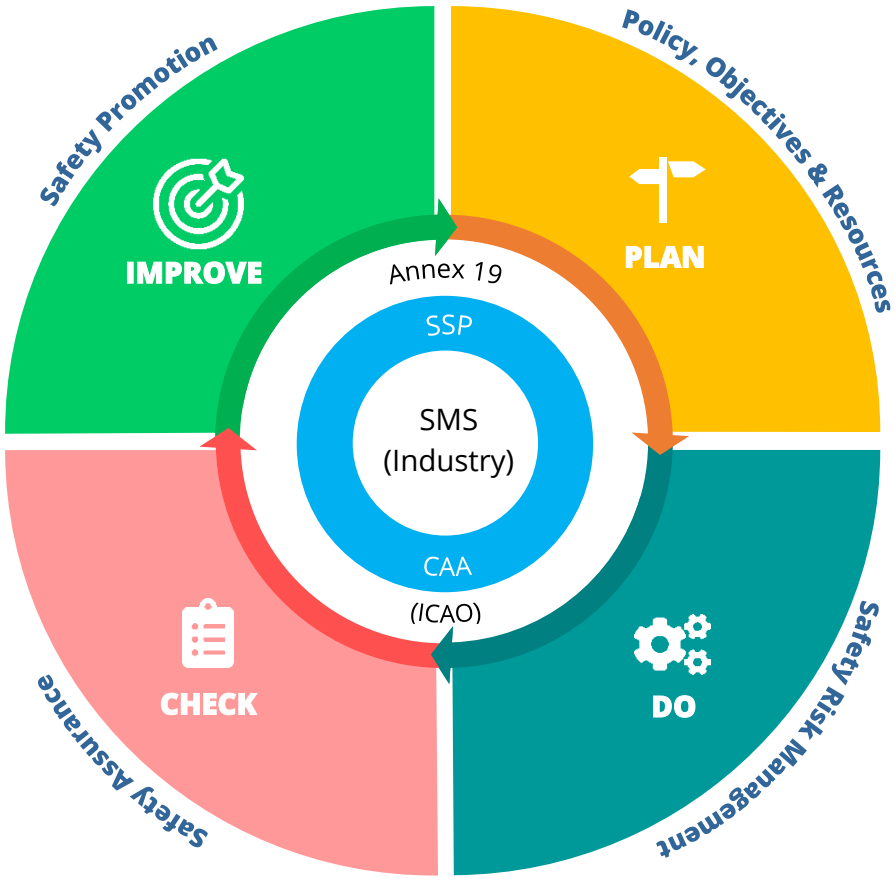
Hussain Jaleel
Chief Executive of the Maldives Civil Aviation Authority and
Accountable Executive of the State Safety Programme

Integrated Safety Management

Annex 19 para 3.1, Doc 9859 para 8.1.4

The Maldivian Aviation Safety Programme (our State Safety Programme) document is structured to reflect the integrated safety management responsibilities envisaged in the second edition of ICAO Annex 19. It combines safety management with safety oversight and embraces performance- and risk- based approaches of safety management while strengthening the traditional prescriptive approaches.

This overall safety philosophy is further structured and organised under the well-known “plan » do » check » improve” (PDCI) system[1] as shown in the diagram below. Each of the four chapters of this document correspond to a quadrant of this model.



Each chapter is further broken down under the PDCI system to create multiple, repetitive feedback loops.

[1] Alan J. Stolzer, Safety Management Systems in Aviation, p. 236, 2nd Ed., 2016

1 Policy, Objectives and Resources

PLAN » DO » CHECK » IMPROVE » Annex 19 para 3.2, Doc 9859 para 8.3

1.1 Policies

PLAN» Annex 19 para 3.2.3.3- 3.2.1.2, Doc 9859 para 8.3.6.9- 1.3- 8.3.4.3

Our Safety Policy, Enforcement Policy and Training Policy guide us on achieving the broad safety objectives set by the State. The principles in our primary legislation and ICAO Annex 19 form the basis of these policies.

Our Safety Policy and Enforcement Policy are publicly available on the Maldives Civil Aviation Authority's (CAA) website (www.caa.gov.mv/policies) and are subject to periodic review. The policies are binding on all CAA staff and those entrusted with specific functions within the Maldivian aviation system.

1.1.1 State Safety Policy of the Maldives

PLAN» Annex 19 para 3.2.3.3, Doc 9859 para 8.3.6.9

The Maldives promotes and regulates aviation to *connect our people with each other and the rest of the world in a safe and economically sustainable manner that is kind on the environment.*

To achieve this overarching goal, the Maldives, through its agencies, will:

1. set national standards that are in line with the Standards, Recommended Practices and Procedures of the International Civil Aviation Organization;

2. adopt innovative technologies, where appropriate;

3. adopt a data-driven and performance-based approach to safety regulation and industry oversight activities where appropriate;

4. identify safety trends within the aviation industry and adopt a risk-based approach to address areas of greater safety concern or need;

5. monitor and measure the safety performance of our aviation system continuously through the State's aggregate safety indicators as well as service providers' safety performance indicators;

6. collaborate and consult with the aviation industry to address safety matters and continuously enhance aviation safety;

7. promote good safety practices and a positive organization safety culture within the industry based on sound safety management principles;

8. encourage safety information collection, analysis and exchange amongst all relevant industry organizations and service providers, with the intent that such information is to be used for safety management purposes only;

9. allocate sufficient financial and human resources for safety management and oversight; and

10. equip staff with the proper skills and expertise to discharge their safety oversight and management responsibilities competently.

Hussain Jaleel
Chief Executive of Civil Aviation Authority and
State Safety Programme Accountable Executive

1.1.2 Enforcement Policy

PLAN» Annex 19 para 3.2.1.2, Doc 9859 para 1.3- 8.3.4.3

The CAA Enforcement Policy reflects how the CAA intends to develop a positive safety culture, protect safety data and resolve safety deviations in an effective manner.

1.1.3 Training Policy

PLAN» Doc 9859 para 8.3.7.6

The CAA training policy reflects our commitment to provide an environment where staff are able maximize their performance, commitment and contribution to the broader safety goals of the CAA.

1.2 Safety Objectives

PLAN » Annex 19 para 3.2.3, Doc 9859 para 8.3.6.8

The overarching goal of aviation is to *connect our people with each other and the rest of the world in a safe and economically sustainable manner that is kind on the environment*.

Safety forms the cornerstone of this goal and will continue to be our highest priority. We intend to achieve the safety aspects by the series of safety objectives below.

#	SAFETY OBJECTIVE	SPIs[2]
1	Continuous reduction of operational safety risks	OPS-01 to OPS-82
2	Strengthening of safety oversight capabilities	SO-01 to SO-04
3	Implementation of an effective State Safety Programme	SM-01 to SM-04
4	Ensuring appropriate infrastructure is available for safe operations	INF-01 to INF-03

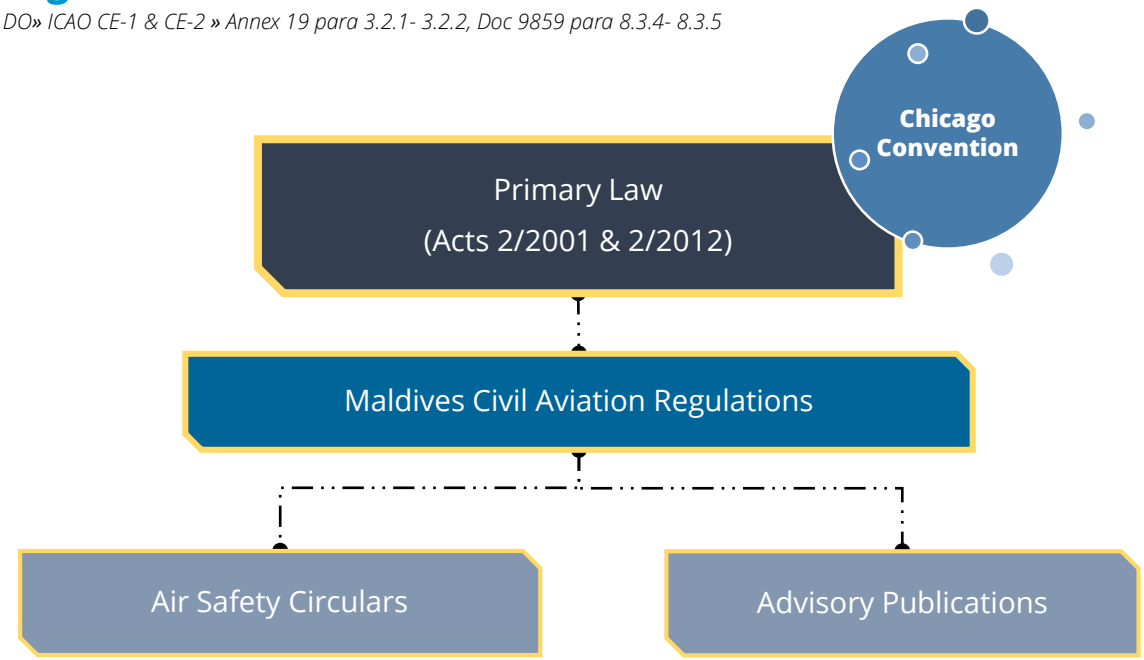
Our safety objectives stem from the State Safety Policy and evolves based on the Acceptable Level of Safety Performance (ALoSP) set by the Maldives.

Each safety objective is measured using Safety Performance Indicators (SPI) and the corresponding Safety Performance Targets (SPTs) as applicable. Refer to section 3.2 of this document for further details.

[2] Refer to Appendix 1 for details of the SPIs

1.3 Legislative Framework

DO» ICAO CE-1 & CE-2 » Annex 19 para 3.2.1- 3.2.2, Doc 9859 para 8.3.4- 8.3.5



1.3.1 International Obligations

DO» Doc 7300, Act 2/2001, Act 2/2012

The Maldives signed the Convention on International Civil Aviation on 12 March 1974. We are committed to our international obligations arising as a signatory to this Convention.

The Convention and the Annexes to it are implemented in the Maldives through an Act of Parliament or regulations made by the CAA.

1.3.2 Primary Law

DO » ICAO CE-1 » Annex 19 para 3.2.1, Doc 9859 para 8.3.4

The main Acts that deal with air safety regulation are Act 2/2001 (the Civil Aviation Act) and Act 2/2012 (the Maldives Civil Aviation Authority Act). The Civil Aviation Act governs the safety of civil aviation in the Maldives while the Authority Act provided for the establishment, funding and governance of the CAA.

1.3.3 Specific Operating Regulations

DO » ICAO CE-2 » Annex 19 para 3.2.2, Doc 9859 para 8.3.5

Compliance with the Standards and Recommended Practices (SARPs) annexed to the Chicago Convention is a pre-requisite for an efficient and safe oversight system. Section 17 of Act 2/2001 and Section 6 of Act 2/2012 requires and gives the CAA the power to make regulations and give effect to the SARPs that are annexed to the Convention.

The CAA has established a rule making process to ensure changes to the SARPs (or any new SARPs) are reviewed and adapted in a timely manner. These are not the only rules the CAA makes. The CAA also uses the same rule making process to regulate on matters that are not subject to our international obligations.

The regulations and guidance material that result from the rule making process are published on the CAA website (www.caa.gov.mv) and the Official Gazette (www.gazette.gov.mv) as appropriate.

The CAA reviews the relevance and adequacy of existing specific regulations as part of its oversight activities and while preparing the annual Rule Making Plan. The regulations are also subjected to review when the AICC conducts its safety investigations.

1.3.4 Enforcement of national law

DO » ICAO CE-1 » Annex 19 para 3.2.1.2

The CAA has a variety of penalties and sanctions at its disposal for enforcing the legal requirements, including administrative and penal measures. These stem primarily from s.24 of Act 2/2001.

1.4 Oversight System

DO » ICAO CE-3 » Annex 19 para 3.2.3.1, Doc 9734 Part A, Doc 9859 para 8.3.6

This section describes the safety oversight authorities in place within the Maldives as an ICAO contracting state. It also explains the relationships between these entities.

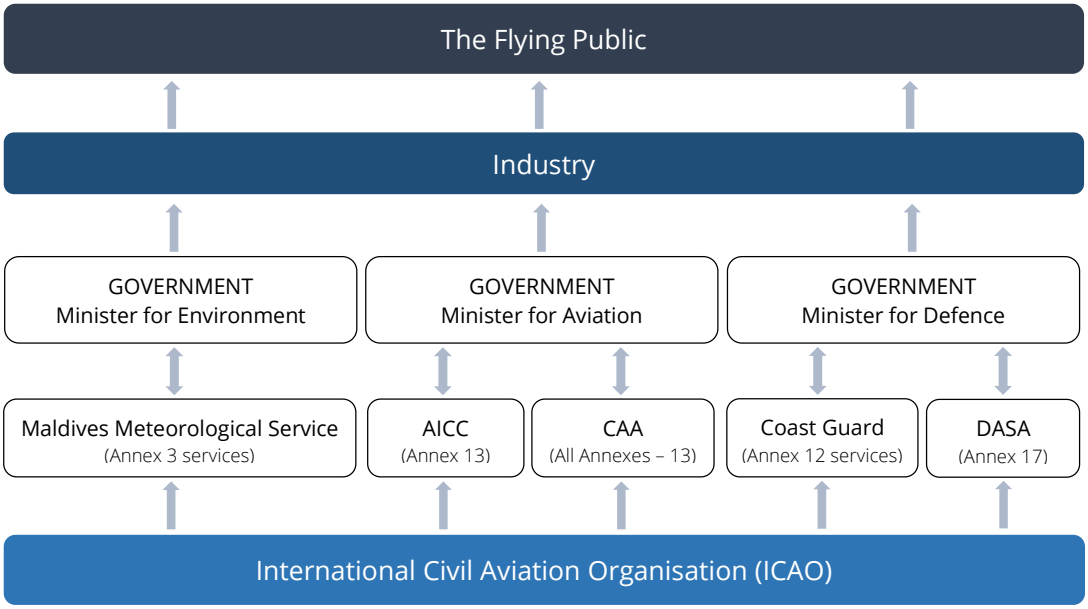
1.4.1 Oversight authorities

DO » Doc 9859 1.3.2

The Maldivian government, through the Minister for Transport and Civil Aviation, sets the overall aviation policy direction.

The main entities responsible for safety oversight in the Maldives are the Maldives Civil Aviation Authority and the Accident Investigation Coordinating Committee. The main entity responsible for security oversight is the Directorate of Aviation Security Administration (DASA).

The Maldivian Coast Guard, the Maldives Meteorological Service and Maldives Airports Company Limited are key service providers essential for the management of aviation safety in the Maldives. They provide search and rescue services, meteorological services and air traffic services within the Maldives. Aviation Security Command of the Ministry of Defence provides aviation security services.



1.4.2 The Minister for Transport and Civil Aviation

DO » ICAO CE-3 » Act 2/2012

The CAA is managed under the supervision of a Minister appointed by the President (Article 2(d) of Act 2/2012). The primary responsibilities of the Minister are to determine the civil aviation policy for the Maldives; make the CAA accountable; answer to the President and the Parliament on all matters related to the Authority; and review of decisions made by the CAA (Articles 9 & 49 of Act 2/2012).

The Accident Investigation & Coordinating Committee (refer 1.4.4 Accident Investigation) is also managed under the supervision of the Minister.

1.4.3 The CAA

DO » ICAO CE-3 » Act 2/2012, Annex 19 para 3.2.3.1, Doc 9734 Part A, Doc 9859 para 8.3.6

The CAA is an independent agency established by the Parliament under the Maldives Civil Aviation Authority Act (Act 2/2012). Key functions mandated by the Act include sustainable development and advancement of the Maldivian aviation system; issue of regulations that give effect to the Act; grant licences and permits; and establishing a fair and competitive aviation industry. Refer to Articles 5 and 6 of the Act for a detailed list of responsibilities and powers of the CAA.

The CAA has been delegated responsibility for the Chicago Conventions and its Annexes 1, 2, 3 (safety oversight functions only), 4, 5, 6, 7, 8, 9, 10, 11, 12 (safety oversight functions only), 13, 14, 15, 16, 18 and 19.

1.4.4 Accident Investigation

DO » ICAO CE-3 » Act 2/2001, Annex 13, Annex 19 para 3.3.3- 3.2.2

The Accident Investigation and Coordinating Committee (AICC) is a part of the CAA but is a functionally separate and independent entity for the purposes of investigation of accidents and serious incidents. The AICC reports directly to the Minister for the CAA and is responsible for ICAO Annex 13.

1.4.5 Meteorology

DO » ICAO CE-3 » Annex 19 para 3.2.2, Annex 3

The Maldives Meteorological Service, an office of the Ministry of Environment, is responsible for provision of meteorological services for international air navigation on behalf of the Maldives as required under ICAO Annex 3. The CAA remains responsible for safety oversight of these functions.

1.4.6 Search and Rescue

DO » ICAO CE-3 » Annex 19 para 3.2.2, Annex 12

Maldivian Coast Guard, the naval arm of the Maldives National Defence Force, is responsible for the aviation related search and rescue obligations of the Maldives as required under ICAO Annex 12. The CAA remains responsible for safety oversight of these functions.

1.4.7 Aviation Security

DO » ICAO CE-3

Directorate of Aviation Security Administration (DASA) of the Ministry of Defence is responsible for the oversight functions specified under ICAO Annex 17. Security service provision is performed by Aviation Security Command of the Ministry of Defence.

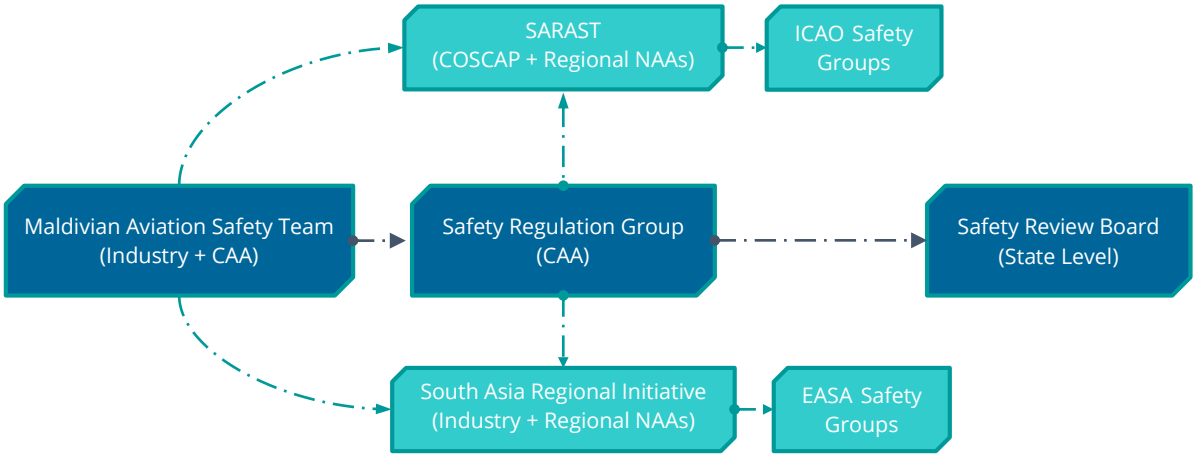
1.5 Coordination – Safety Groups

DO » ICAO CE-3 » Doc 9858 para 8.3.6

A cohesive and collaborative approach is required to deliver an effective state safety programme and maintain an acceptable level of safety performance.

There are several safety groups that draw together the agencies responsible for policy, oversight and service provision. These groups enhance coordination across the different agencies on safety, capacity and environmental protection.

Coordination at the national level happens in three main safety groups. These are the Maldivian Aviation Safety Team, the Safety Regulation Group and the Safety Review Board. Coordination at the international level is mainly through South Asia Regional Aviation Safety Team (SARAST) a part of COSCAP-SA and South Asia Regional Initiative (SARI).



1.5.1 Maldives Aviation Safety Team (MAST)

Maldives Aviation Safety Team is composed of service providers with secretariat services provided by the CAA. It is instrumental in bringing industry wide concerns to the CAA in a coordinated manner. The main aims of the team are to measure safety performance of the Maldivian aviation system, identify specific deficiencies and propose corrective measures.

This team contains additional subgroups that tackle specific issues. These are the Airspace Working Group, Runway Safety Working Group, and the National Wildlife Hazard Management Committee.

The aims, composition and working procedures of the Maldives Aviation Safety Team are contained in its terms of reference.

1.5.2 Safety Regulation Group (SRG)

Safety Regulation Group is an Authority level committee composed of managers and operational staff that meet on a monthly basis to review the safety activities of the CAA and the Industry.

It will also implement the strategic directions put forward by the Safety Review Board in a rational, co-coordinated and cost-effective manner. It coordinates its activities and recommendations with the appropriate operational groups likely to implement such recommendations, as required.

1.5.3 Safety Review Board (SRB)

DO » ICAO CE-3 » Doc 9858 para 8.3.6.3

The Safety Review Board consists of the Minister for the CAA, Directors of the CAA Board, Chairman of the AICC and a representative from the Maldivian Coast Guard. The Board is assisted by technical experts from the CAA.

The Committee meets twice every year and sets the strategic direction of the State in terms of safety management. In addition it will monitor the implementation of State Safety Programme and guide its development.

1.5.4 South Asia Regional Aviation Safety Team (SARAST)

SARAST, a part of COSCAP-South Asia, recommends interventions which will reduce aviation risks within the South Asian region. Composed of Inspectors from the National Aviation Authorities and COCSAP-South Asia staff, it is a forum where countries can put forward safety concerns that could be managed at a regional level.

SARAST makes recommendations to the Steering Committee of COSCAP-South Asia which is composed of the Directors General of Civil Aviation of the region. The recommendations, once approved by the Steering Committee, are implemented through the coordinated efforts of the national aviation authorities and industry.

Safety concerns which require intervention at a global level are forwarded to the ICAO safety groups such as Asia Pacific Regional Aviation Safety Team (APRAST) and the Regional Aviation Safety Groups (RASG).

NOTE:
COSCAP-South Asia, under the aegis of ICAO, is a joint programme of seven SAARC countries, namely Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The programme is aimed in assisting the participant States in developing regulations and standards and to improve their independent oversight capabilities.

1.5.5 South Asia Regional Initiative (SARI)

South Asia Regional Initiative is a grouping of authorities from South Asia that was created during the EU-South Asia Civil Aviation cooperation programme sponsored by the European Commission and the European Aerospace industry that ended in 2006. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka form SARI.

The overall objective of SARI is to create a forum for the National Aviation Authorities and the civil aviation industry from South Asia to foster aviation safety regulation harmonization and enhance aviation safety in the region.

SARI progress is monitored by a Steering Committee composed of Directors General of the SARI Member State Civil Aviation Authorities.

1.6 Qualification of technical personnel

DO » ICAO CE-4 » Doc 9734, Doc 9859 para 8.3.7

The CAA places great emphasis on maintaining a strong team of competent inspectors to meet its international and national safety obligations. This is achieved at two levels, during initial recruitment and with continuous training.

1.6.1 Recruitment

DO » ICAO CE-4 » Annex 19 APP 1-2 para 4.1

The CAA has developed job profiles for each safety role based on the international requirements of ICAO. These specify the competencies, educational background and the experience requirement for each role. These profiles serve as the basis for job descriptions and advertisements for any new vacancies.

1.6.2 Continuous Training

DO » ICAO CE-4 » Annex 19 APP 1-2 para 4.1

The CAA has also developed training profiles for each safety role based on international best practices. These include basic qualification requirements each inspector must fulfil and specialist qualifications that are role specific.

The CAA provides the required training courses periodically to all inspectors and aero medical examiners based on their role and level of authorisation. Each Inspector is only authorised to independently perform safety functions when the competence requirements have been fulfilled.

The CAA also provides staff to participate in international and regional workshops and seminars for special competences that require narrower fields of specialisation.

1.6.3 Performance Appraisal

The training status and the need for further development of each staff is assessed annually by the immediate supervisor in conjunction with Administration section. Results of the assessments are collated by the Administration section and necessary changes brought to the job profiles and/or the training profiles.

1.6.4 Training Records

DO » ICAO CE-4 » Annex 19 APP 1-2 para 4.2

Training records of all staff are placed on our safety management software for record keeping and tracking of training currency.

1.7 Technical Guidance, Tools and Information

DO » ICAO CE-5 » Annex 19 para 3.2.5, Doc 9734 para 3.6

1.7.1 Technical Guidance

DO » ICAO CE-5 » Annex 19 para 3.2.5, Doc 9734 para 3.6

Inspectors work on two streams of technical guidance. The first stream includes guidance produced by ICAO, EASA, FAA, Transport Canada and OEMs such as Airbus and Boeing. The first stream of documents are controlled through the CAA Library. The second stream includes procedures developed by the CAA to ensure Inspectors work in a standardised manner. The CAA developed procedures are published as the Standard Operating Procedures of the CAA. This is issued under the authority of the Chief Executive.

Access to current version of these documents is via the CAA local area network.

Inspectors are required to adhere to the processes described in the Standard Operating Procedures. They must also use any corresponding instructions and tools. This is the only way in which quality can be controlled and any errors minimised.

1.7.2 Tools

DO » ICAO CE-5 » Annex 19 para 3.2.5, Doc 9734 para 3.6

The main tools used by staff, in addition to the shared folders on the local network and office packages, are the Google G Suite platform and the safety management software Centrik.

The G Suite platform is used for email, chat, shared documents and web based video conferencing.

The CAA also has introduced a safety management software to manage safety occurrences, audits, staff training and safety documents. This software is aimed at transitioning to a risk-based and data-driven safety oversight system. It also aims to transition from a paper based to a web based system where each staff has a broad set of tools at their fingertips.

Access to both G Suite and Centrik is web based and can be done at any location on any device with a modern web browser. Staff can also access shared network resources via a VPN from any location.

1.7.3 Information

DO » ICAO CE-5 » Annex 19 para 3.2.5, Doc 9734 para 3.6

The CAA provides a range of guidance material other than the regulatory material it issues. These are published on the CAA website. Further information can be found in Chapter 4.

1.8 State Safety Programme

DO » ICAO CE-3 » Annex 19 para 3.1, Doc 9858 para 8.3.6

1.8.1 ICAO Requirements

DO » ICAO CE-3 » Annex 19 para 3.1, Doc 9858 para 8.3.6, GASP 2020-2022

ICAO, through Annex 19 (Safety Management) to the Chicago Convention, obliges us to establish and maintain a State Safety Programme that is commensurate with the size and complexity of aviation in the Maldives.

The Global Aviation Safety Plan (GASP) 2020-2022 indicates the compliance timeframes expected by ICAO. The Maldives has set the following compliance timeframes based on the GASP and taking into account both safety management and safety oversight.

PHASE	DEADLINE
Phase 1 – Implement 75% of ICAO Critical Elements	2022
Phase 2 – Implement the foundation of an SSP	2022
Phase 3 – Implement an effective SSP	2025
Phase 4 – Implement 85% of ICAO Critical Elements	2026
Phase 5 – Implement 95% of ICAO Critical Elements	2030

Our State Safety Programme is designed considering approximately 2 million international passenger movements, 1.8 million domestic passenger movements and a fleet of 100 aircraft which are expected to grow at approximately 10% each year.

Complexity of aviation ranges from international commercial air transport operations using large aircraft to general aviation activities and recreational aviation activities. Maldives is not a State of Design or Manufacture.

1.8.2 Responsibilities and Resources

DO » ICAO CE-3 » Annex 19 para 3.1, Doc 9858 para 8.3.6

A summary of the main responsibilities related the State Safety Programme are given in the table below:

SSP ROLE	RESPONSIBLE ENTITY / PERSON
Placeholder organisation (Doc 9859 para 8.3.6.2)	Maldives Civil Aviation Authority
Key Stakeholder organisations (Doc 9859 para 8.3.6.2)	Ministry of Transport and Civil Aviation Ministry of Defence Maldives Civil Aviation Authority Accident Investigation Coordinating Committee Coast Guard, Maldives National Defence Force Maldives Meteorological Service
Accountable Executive (Doc 9859 para 8.3.6.2)	Hussain Jaleel Chief Executive, CAA

SSP ROLE	RESPONSIBLE ENTITY / PERSON
Coordination Group (Doc 9859 para 8.3.6.3)	Safety Review Board
Oversee Operational Safety	Safety Regulation Group
Day-to-day Management (Doc 9859 para 8.3.6.4)	Abdulla Mohamed Director Airworthiness, CAA
SMS Acceptance & Monitoring (Doc 9859 para 8.3.6.4)	Domain Managers CAA

The CAA is the Maldivian agency responsible for coordinating the implementation and maintenance of the State Safety Programme. The Chief Executive of the CAA is the accountable executive and has authority on financial / human resource issues and ensures all necessary resources are available.

The inter-agency Safety Review Board (refer 1.5.3) is used to ensure the functions of the SSP are effective by monitoring the implementation and guiding future direction.

The Safety Regulation Group (refer 1.5.2) is responsible to oversee operational safety and resolve identified risks.

Director Airworthiness of the CAA ensures the daily operation of the programme and reports directly to the Chief Executive of the CAA.

The detailed tasks of implementing the Programme, including the acceptance of SMS, are shared among the different management levels of the CAA. The detailed functions and responsibilities are specified in Standard Operating Procedures of the CAA.

Implementation of the processes described in the programme is the responsibility of the relevant authorities, the aviation industry and individual participants.

Employees are responsible for identifying hazards and reporting them.

1.8.3 Development of the Programme Document

DO » ICAO CE-3 » Doc 9858 para 8.3.6

The CAA is responsible for preparing and publishing the State Safety Programme document. The programme document and its appendices are updated, at least once year, to ensure any necessary changes are reflected.

The CAA then, coordinates with all stakeholders using the formal SSP coordination group as well as regular communication channels to ensure their input is received and incorporated.

Amendments to the SSP document must be approved by the Chief Executive.

1.8.4 Documentation and Records

DO » ICAO CE-3 » Doc 9858 para 8.3.6.24

The SSP gap analysis of 2011 and 2013 led to the creation of objectives and implementation plans. A number of safety related activities have been conducted as the SSP evolved through the implementation plan activities. Some of the results were published under the Preliminary Management Manual of 1 June 2014, the CAA website and under different Standard Operating Procedures adopted by the CAA.

The essential information contained in the Preliminary Management Manual, the CAA website and the Standard Operating Procedures has been now subsumed into this document.

This SSP document therefore contains most of the high level SSP documentation and this document, along with previous Preliminary Management Manual, provides a record of the SSP activity.

1.9 Journey Log

CHECK » Annex 19 Chapter 3.5.2/5.4, Doc 9859 para 7.9

The CAA currently does not issue an annual safety report. The CAA intends to issue an annual safety report ('Journey Log') that addresses two main areas. Firstly to identify key areas of risk and proposed improvements that can increase the level of safety within the Maldivian aviation system. Secondly, it should provide an overview of the safety recommendations addressed to the CAA and present the replies made by the CAA.

This report is important as it will allow the setting of safety actions and priorities for not only the CAA but all the stakeholders in the industry. These safety actions and priorities then can flow into our Flight Plan for course correction.

1.10 Flight Plan

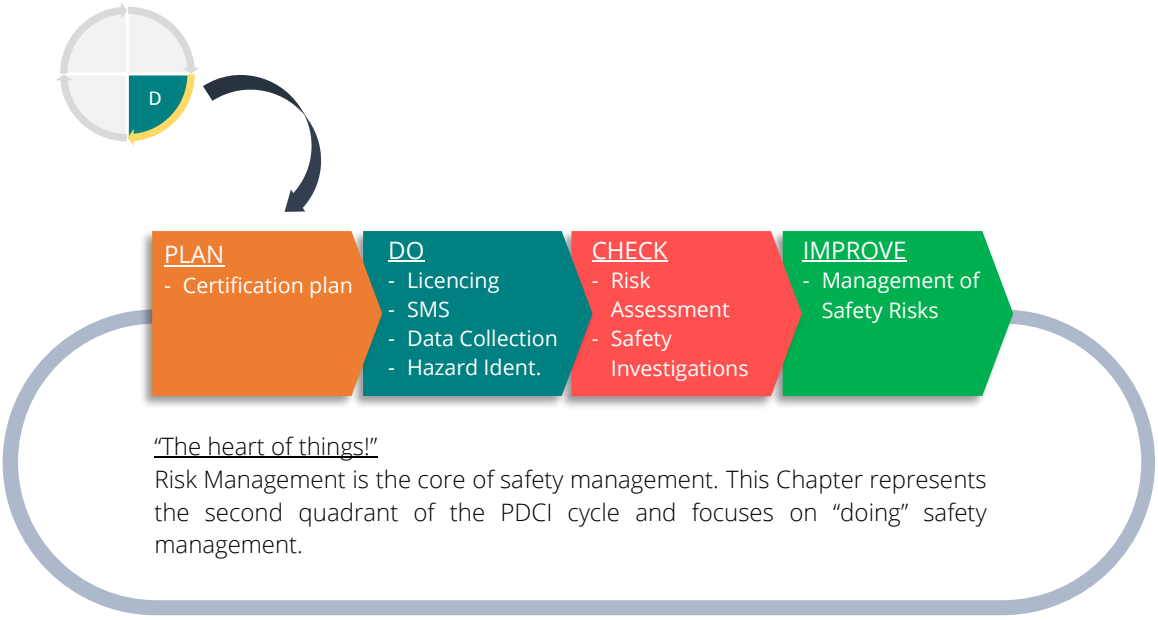
IMPROVE » Act 2/2012 Art 5(d) and 8, Doc 9859 para 8.3.6.20, Doc 10004

'Flight Plan' is our strategic plan for aviation in the Maldives. This 'Flight Plan' sets out, the Government's long term policy objectives for the aviation industry. It allows the CAA to communicate clearly the strategic direction for the management of aviation safety over a five year period. It also communicates where resources of the safety agencies would be concentrated.

The Flight Plan is created considering our legal obligation under the Primary Acts and with input from the Global Aviation Safety Plan (GASP), the Government Strategic Action Plan (SAP) and, in the future, the 'Journey Log' – our Annual Safety Report. The CAA takes this national plan and creates detailed (safety) action plans as necessary.

2 Safety Risk Management

PLAN » **DO** » CHECK » IMPROVE » Doc 9859 para 8.4



The Maldives is in the process of moving from a risk management approach that is based on a system of legislation and regulatory oversight to a system that embraces a systems based approach with risk based surveillance. This shift is placing more safety responsibility on approved organisation and changing the way we perform oversight. The processes described in the part are key to, and accelerates, this transition.

2.1 Licencing and Certification

DO » ICAO CE-6 » Annex 19 para 3.3.1, Doc 9859 para 8.4.6, Doc 9734 Part A

Licencing and certification still continue to be at the heart of the safety risk management methodology. They provide us and you the assurance that approved organisations and licenced staff meet the required standards to operate safely within the aviation system.

The major areas where the CAA issues a licence, approval certificate are described below. The CAA mainly uses a regime of audits and inspections to ensure individuals

and organisations meet the specified requirements. Some of these include time based re-certification and re-licencing criteria.

CATEGORY	APPLICABLE REGULATION	TYPE
Certification of Air Operations	MCAR-Air Operations	Certificate
Carriage of Dangerous Goods	MCAR-Air Operations	Certificate
Aircrew licencing	MCAR-Air Crew	Licence
Aircraft Engineer licencing	MCAR-66	Licence
Air traffic controller licencing	MCAR-65	Licence
Training Organisations	MCAR-Aircrew, MCAR-147	Certificate
Air Traffic Services	MCAR-11	Certificate
Airport operators	MCAR-139	Certificate
Aircraft Maintenance Organisations	MCAR-145, MCAR-M	Certificate
Continuing Airworthiness Management	MCAR-M	Certificate
Certification of Aircraft	MCAR-21	Certificate

2.2 Safety Management Systems

DO » Annex 19 para 3.3.2- Chapter 4, Doc 9859 para 8.4.7- Chapter 9

The full scope of our safety management obligations are a mix of safety oversight and safety management principles. The safety management systems we approve as part of the certification process are central to achieve these obligations. This is especially true as we transition from prescriptive to a performance based regime where greater safety responsibilities are placed on approved organisations.

We, therefore, place the highest priority, during certification, to approve management systems that meet the required standards and can further our collective safety management obligations.

2.2.1 Target Organisations

DO » Annex 19 para 3.3.2- Chapter 4, Doc 9859 para 8.4.7

We require the following categories of organisations to implement a safety management system. New organisations are required to meet the *initial* management system requirements at the time of certification. This is in recognition of the fact all elements of the safety management system may not be available at approval and is subject to a robust implementation plan.

Organisations that were approved prior to the implementation of SMS regulations are undergoing full approval under a phased approach.

CATEGORY	APPLICABLE REGULATION
Air Operators	MCAR-Air Operations
Air Traffic Service Providers	MCAR-11
Airport Operators	MCAR-139
Maintenance Providers	ASC 00-2
Flight Training Organisations	MCAR-Aircrew

2.2.2 Approval of the Safety Management System

DO » Doc 9859 para 8.4.7

The CAA considers the safety management system an integral part of the approvals described in section 2.2.1. There is no separate acceptance of the management system for any new approval. It is a necessary requirement for the initial certification and the maintenance of such an approval.

2.2.3 Safety "Contracts"

DO » Doc 9859 para 8.4.7

The safety management manuals of approved organisations contain safety performance indicators and targets that are agreed with the CAA. These form important safety 'contracts' with the industry. These performance indicators are in line with the state safety performance indicators.

The performance indicators and targets are reviewed under the periodic audits performed by the CAA.

2.2.4 Implementation Support

DO » Doc 9859 para 8.3.8.2

The CAA provides a range of guidance material and training courses to the industry to support the implementation of safety management systems. Refer section 4.

2.3 Safety Information – Collection, Analysis and Exchange

DO » Annex 19 Chapter 5, MCAR-13B, State Enforcement Policy, Doc 9859 Chapter 5

Safety information makes risk management possible. It is therefore necessary to collect, analyse and exchange such data. It is also important to protect the collected information from misuse to ensure data providers continue to provide adequate intelligence on the Maldivian aviation system.

2.3.1 Reporting Culture

DO » Annex 19 para 3.2.3.3, MCAR-13B, State Enforcement Policy, Doc 9859 Chapter 3

Reporting of safety information greatly assists us with identifying the precursors of accidents. Consequently, we encourage a positive reporting culture where industry and staff performing safety critical functions are willing to disclose any incident or mistake they make.

This is firmly embedded in our Enforcement Policy which reflects a 'just culture' policy.

2.3.2 Safety Reports

DO » Annex 19 Chapter 5, MCAR-13B, Doc 9859 Chapter 5

Safety reporting is one of the most important sources of safety information. The CAA has established two safety reporting systems to ensure we are able to collect relevant safety intelligence in a timely manner.

CATEGORY	DETAILS
Mandatory Reporting	Reporting scheme established under MCAR-13B to gather information on occurrences which endanger or could endanger aviation safety. These reports represent and actual or potential safety hazard. MCAR-13B provides a list of reportable occurrences that fall under this category. Data is normally submitted directly to the CAA safety management software through the CAA website or a data bridge for bulk reporters.
Voluntary / Confidential Reporting	The CAA also has established a system to submit safety reports that do not fall within the mandatory classification or where the reporter wishes to protect his/her identity. These are submitted directly to the CAA safety management software through the CAA website. Voluntary reports, submitted as confidential, will be access restricted.

The CAA safety management software is designed such that it meets the Reduced Interface Taxonomy, a subset of the ICAO ADREP taxonomy[3]. Each report must also receive a risk score based on ERC methodology.

Further information on safety reporting can be found in MCAR-13B and on the CAA webpage for safety reporting (https://www.caa.gov.mv/reporting).

2.3.3 Additional Safety Data

DO » Annex 19 Chapter 5, Doc 9859 Chapter 5

The CAA collects safety information from various additional sources. Some of these are detailed below:

CATEGORY	SOURCE
Audit and inspection findings	CAA audits
FDM analyses	Approved organisations
Fleet Reliability	Approved organisations
Safety Investigation Reports	AICC / CAA / Approved organisations
Financial Monitoring	CAA
Ramp Inspection	CAA, Other oversight authorities
Global Safety Data	ICAO USOAP and iSTARS websites
Research and safety reports	International investigations / oversight authorities
Medical data	CAA
Air transport statistics	CAA

2.3.4 Safety Management Software

DO » Annex 19 Chapter 5, Doc 9859 Chapter 5

The CAA has established a safety management software that enables the collection of safety reports and audit data. It is also possible to perform risk assessments on the software.

The system facilitates the analysis of such data and the production of aggregate reports on individual organisations, specific sectors at the state level with minimal configuration at the user level. The results can be based on “number of events”, “rate of events” or ERC score with the latter being more meaningful as it puts the spotlight on the (potential) severity. This allows safety staff to react quickly and take action. Further the risk picture provided by the system is a key enabler of data-driven, risk based oversight.

The system is also able to export data in the ECCAIRS E5X format for exchange of data with ICAO and other safety stakeholders.

[3] https://www.icao.int/safety/airnavigation/AIG/Pages/ADREP-Taxonomies.aspx

2.3.5 Data Exchange

DO » Annex 19 para 5.4, Doc 9859 Chapter 5

The results of the safety information analysis are made available to both internal and external parties. The key forms of data exchange are given below:

CATEGORY	RECIPIENTS
Accident Reports	ICAO, Industry and Public
"Journey Log" - Annual Safety Report[4]	Public
Monthly safety performance	SRG
Bi-annual safety performance	SRB
Quarterly safety performance	MAST
Audit & Incident data	Industry (within safety promotion activities)

[4] Pending publication

2.4 Hazard Identification and risk assessment

DO » CHECK » Annex 19 para 3.3.4, Doc 9858 para 8.4.9, Chapter 2.5

The most fundamental aim of safety risk management is to identify and control the potential consequences of hazards using safety information. Hazard identification and risk assessment (HI/RA) are the central processes of this exercise.

2.4.1 Triggers

DO » Annex 19 para 3.3.4.1, Doc 9858 para 8.4.9.11- 2.5.2.10- 8.5.6.5

The scope of hazards within the aviation system is very wide. The following events trigger the hazard identification and risk assessment process.

TRIGGER	TYPE
Negative trends or an unacceptable risk identified from Safety Reports	Reactive
Deficiencies identified in safety investigation reports	Reactive
Negative trends identified from safety audits	Proactive
Negative trends identified from safety performance monitoring	Proactive
Major changes to existing operations or organisation (ref 3.3)	Predictive
Introduction of major changes (ref 3.3)	Predictive

2.4.2 Hazard Identification

DO » Annex 19 para 3.3.4.1, Doc 9858 para 8.4.9- 2.5

Domain managers are responsible to continuously monitor for any adverse trends or triggering events that necessitates hazard identification and raise a hazard report.

Operational staff are also responsible to raise a hazard report if they discover a potential hazard.

The Safety Regulation Group meets on a monthly basis and one of its key roles is to monitor safety risks arising within the Maldivian aviation system. Once a triggering event occurs, the Group will make a preliminary review and any potential hazard is escalated to a hazard report. It is also possible for operational staff and domain managers to raise a hazard report.

The “Safety” module of the safety management software includes the hazard reporting form.

Hazard Reports will be reviewed and actioned by the Manager responsible for the specific domain.

Consult the Safety Management International Group (SM ICG) "Hazard Identification Taxonomy" (https://www.skybrary.aero/index.php/Hazard_Taxonomy_Examples) to align identified hazards with a common taxonomy. This facilitates better understanding and data analysis.

2.4.3 Risk Assessment

CHECK » Annex 19 para 3.3.4.2, Doc 9859 para 2.5

Domain managers are responsible to assess the magnitude of risk posed by the hazards identified in the hazard reports. The CAA uses the ARMS SIRA methodology[5] for risk assessments and this is built into the safety management software.

The risk assessment produces five levels of results. Depending on the result, actions (as per section 2.6) must be taken to resolve and manage the safety deficiencies within an acceptable level.

RESULT	LEVEL OF RISK	REMARKS
Stop	Unacceptable	Halt operations immediately
Improve	Unacceptable	Tolerable for a short period with mitigation actions
Secure	Acceptable	Requires frequent monitoring
Monitor	Acceptable	Monitor through routine database analysis
Accept	Acceptable	No specific action required

[5] https://skybrary.aero/bookshelf/books/1141.pdf

2.5 Safety Investigations

CHECK » Art 26 Chicago Convention, Art 20 Act 2/2001, Annex 13, MCAR-12, Doc 9756, Annex 19 para 3.3.3

We put in place many risk management measures to reduce the risk of aviation to an acceptable level and to prevent incidents and accidents. The fact that adverse events still occur suggest that the existing risk control measures are inadequate.

Safety investigations provide, an unwelcome yet important, opportunity to identify possible failures within the aviation system and countermeasures that could prevent recurrence.

Safety investigations are performed by different entities based on the risk posed by a particular event. We use ICAO Annex 13 and the Event Risk Classification (ERC)[6] score to determine who should investigate.

CATEGORY	INVESTIGATOR
Accident	Accident Investigation Coordinating Committee
Serious incident (MTOW > 2250 kg)	Accident Investigation Coordinating Committee
Serious incident (MTOW < 2250 kg)	CAA
Incidents (ERC Score = 2500)	CAA
Incidents (ERC Score <= 502)	Approved Organisations

2.5.1 Safety Investigation Authority

CHECK » Art 26 Chicago Convention, Art 20 Act 2/2001, Annex 13 para 3.2, Annex 19 para 3.3.3

In the Maldives, the State entity responsible for safety investigation authority is the Accident Investigation Coordinating Committee. It performs investigations related to serious incidents and accidents. It functions independently of the CAA and reports directly to the Minister for Transport and Civil Aviation.

The Committee derives the power to perform investigations from Article 20 of Act 2/2001 (the Maldives Civil Aviation Act).

2.5.2 Investigations

CHECK » Art 26 Chicago Convention, Art 20 Act 2/2001, Annex 13, MCAR-12, Doc 9756

Investigations performed by the Committee are solely intended to obtain information that can be used for preventing the occurrence of such accidents and hazardous situations in the future, and thus enhancing safety. They are not intended to apportion blame or liability.

To this end, the Committee uses ICAO Annex 13 standards and a procedure manual approved by the Chairman of the Committee to perform investigations.

[6] https://www.skybrary.aero/bookshelf/books/1141.pdf

2.5.3 Safety Recommendations

CHECK » Annex 13 Chapter 6, MCAR-12.6.8-10, Doc 9756 P4 Chapter 1; Doc 9962 Chapter 10

Safety Investigation Authorities do not have the power to implement measures to enhance safety but only propose them due to the separation of powers between investigation authority and the oversight authorities.

The investigation authority – in this case the Accident Investigation Coordinating Committee – reports on existing safety deficits to the relevant authorities in an interim or final report together with the corresponding recommendations. It is the function of the relevant authorities, together with the industry, to decide on how the safety recommendations can be implemented.

2.5.4 Roles and responsibilities of the CAA

CHECK » Annex 13

The primary responsibility of the CAA in this area is take measures to implement the recommendations aimed at it and those entities that are under the CAA's oversight responsibility.

The CAA also has a significant role communicating between the many entities involved in an investigation and the implementation of any recommendations resulting from the investigations.

The CAA also may perform studies and analyses of accidents and incidents independently of the Committee and take pre-emptive oversight actions intended to ensure safety is not compromised. This is however done in close collaboration with the Committee. The Committee also informs the CAA of any emerging matters that require immediate action.

2.6 Resolution of Safety Issues

IMPROVE » ICAO CE-8 » Annex 19 para 3.3.5, Doc 9859 para 8.4.10, 2.5.7-2.5.9, Doc 9734 Part A

A hazard identification or a risk assessment as such does not reduce risk. Actions must be taken to mitigate this risk and resolve the safety concerns. These actions broadly fall into acceptance, mitigation, avoidance or transfer. Domain managers consider aspects such as cost, effectiveness when determining actions that will keep the risk "as low as reasonably practicable".

2.6.1 Tools

IMPROVE » ICAO CE-8 » Doc 9859 para 8.4.9.6, Doc 9734 Part A

Domain managers have a range of tools available at their disposable. These include rapid response items such issue of an airworthiness directive or longer term response such as rule making. It is also possible to revise the oversight actions, carryout safety promotion activities or take enforcement action.

2.6.2 Recording and Monitoring

IMPROVE » ICAO CE-8 » Doc 9859 para 2.5.8, Doc 9734 Part A

All actions taken to mitigate risks are documented on the safety management software. Actions must ideally meet the "SMART" criteria.

The safety management software has a monitoring function that permits tracking of the hazards, related risk assessments and any action items related to them.

3 Safety Assurance

PLAN » DO » **CHECK »** IMPROVE » Doc 9859 para 8.5

"You cannot manage what you can't measure"
Safety Assurance is about measuring the safety of operations conducted within the Maldives. This Chapter represents the third quadrant of the PDCI cycle and focuses on "checking" our performance.

3.1 Safety Oversight

DO » ICAO CE-7, Doc 9859 para 8.5.3, Doc 9734 Part A

Safety oversight is one of the two key process used to determine the safety of operations conducted under the Maldivian aviation system.

The safety oversight of the Maldivian aviation system is primarily the responsibility of the CAA. Oversight is managed through a series of planned (and unplanned) audits, inspections and assessments to ensure organisations and persons approved by the CAA continue to meet their regulatory obligations.

Our oversight management is also moving towards risk based controls as we move from a prescriptive to a performance based regime. This requires us to ensure organisations implement the safety management requirements.

3.1.1 Planning

PLAN » ICAO CE-7

The CAA conducts oversight activities according to an oversight plan. The oversight plan is prepared on annual basis but subject to continuous improvement throughout the current year.

Domain managers are responsible for creating the oversight plan taking into account, the oversight policies, available resources, risk profiles of the subject organisations and focus areas identified in the previous audits cycles and performance monitoring.

3.1.2 Risk Profiles

DO » ICAO CE-7, Doc 9859 para 8.5.3.8, 8.5.4 Doc 9734 Part A

The size and complexity of operations determine the baseline audit policy. This a risk-based criterion and dictates the minimum frequency and scope of oversight activities that may be performed on a class of organisations.

The risk profile may be modified based on the outcomes of ongoing surveillance activities and safety performance.

Safety performance indicators and targets are reviewed in the monthly safety review group meeting and domain managers may use this data to modify the risk profiles.

Should the risk profile change, the frequency and scope of oversight activities may change but never below the minimums determined for the baseline.

3.1.3 Data-Driven Prioritisation

DO » ICAO CE-7, Doc 9859 para 8.5.3.2-7

We are in the process of leveraging the data insights provided by the management system to influence our oversight and activities and better manage emerging safety issues.

The safety management software provides valuable data from the safety reporting systems and the audit management systems. It is expected that this will be fully implemented by 2021 with organisations that require greater assistance being highlighted and transposed to the oversight plan.

3.1.3 Resolution of safety deficiencies

DO » ICAO CE-8, Annex 19 para 3.3.5, Doc 9859 para 8.4.10, Doc 9734 Part A

Most regulatory shortcomings are subject to corrective action through the raising of findings.

Most audit findings are non-compliances with an applicable requirement that could lower the safety standard and may hazard flight safety. The corrective action timescale for these are normally up to 90 days and is agreed based on the associated potential hazard.

Some findings are significant non-compliances with the applicable requirement that lowers safety standards and hazards seriously the flight safety. These require urgent (less than 7 days) and satisfactory corrective action to mitigate the hazard. It may require an immediate suspension, or variation of any approval or certificate.

The findings may be escalated in accordance with the Enforcement Policy should appropriate results do not materialise.

3.2 Safety Performance Management

DO » Annex 19 para 3.4.2, Doc 9859 para 8.5.5, Chapter 4

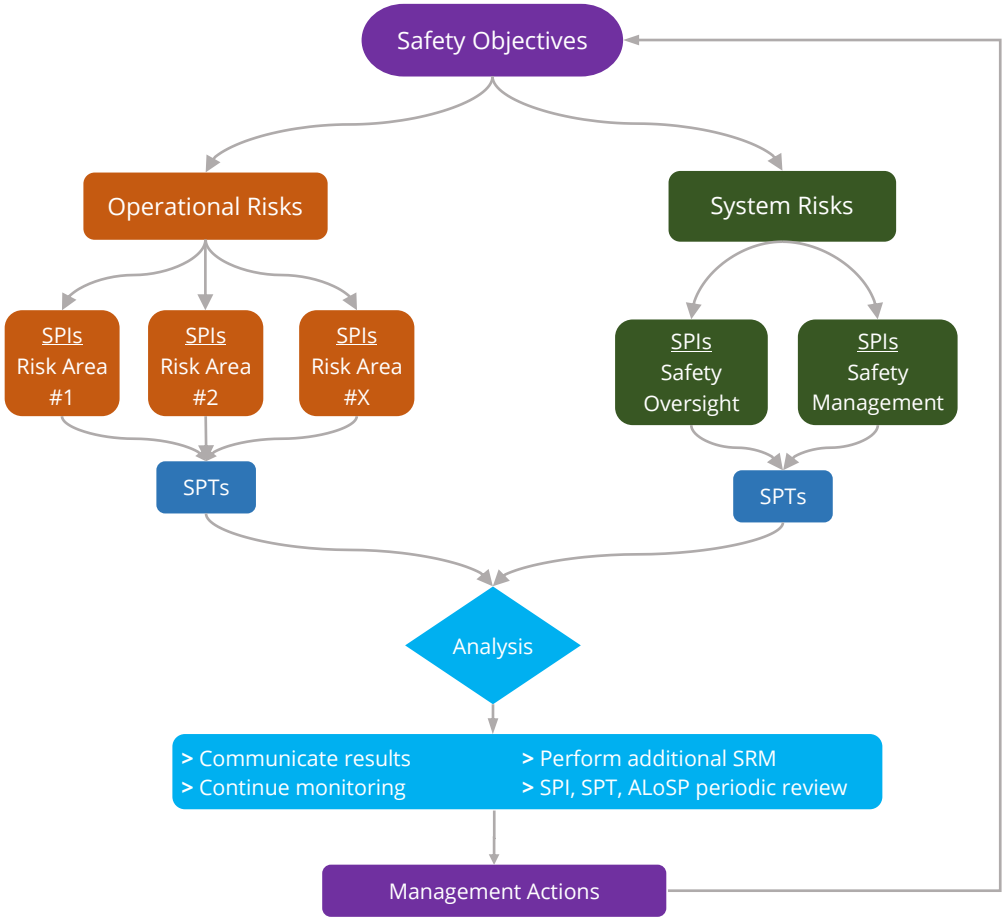
A prime consideration of safety management is to create a "bigger bang for the buck". Or, to put your resources where it matters most – i.e. at areas of greatest risk. Safety performance management is central to this goal.

Performance management informs us what our biggest risks are, what we want to do about them, what progress we make and what more we need.

3.2.1 Acceptable Level of Safety Performance (ALoSP)

DO » Annex 19 para 3.4.2, Doc 9859 para 8.5.5, Chapter 4

We cannot manage what is not measured. ALoSP is the mechanism used to measure the operational performance of our state safety programme. It stems from our safety objectives (section 1.2) and is the aggregate of our safety performance indicators (SPIs) and the corresponding safety performance targets (SPTs).



3.2.2 SPIs and SPTs

DO » Annex 19 para 3.4.2, Doc 9859 para 8.5.5

SPIs are the short term, measurable safety outcomes while SPTs are the long term, strategic outcomes. The CAA established a set of SPIs in April 2018 to measure our safety performance.

The initial set of SPIs has been amended with the issue of this programme document, to align it with the Global Aviation Safety Plan.

We have not assigned targets for individual SPIs. The CAA expects to set targets to most of the SPIs by 2021 when sufficient data on the SPIs have been gathered. Consequently, the CAA has set a single target for all indicators monitored by certificated organisations. This is to *Incorporate the threats identified in this SPI package in the safety management process.*

The current SPI package contains 23 SPIs monitored by the CAA at a State level and 33 SPIs monitored by certificated organisations. For details refer to Appendix 1.

3.2.3 SPI Development and Redevelopment

DO » Annex 19 para 3.4.2, Doc 9859 para 8.5.5

Director Airworthiness is responsible for the development and redevelopment process of the SPIs and SPTs.

The first step is an analysis of our aviation system as a whole, to determine systematic issues and main operational risks. SPI workshops are then held with each domain within the CAA. Once a preliminary set of SPIs has been developed these will be forwarded to the Safety Regulation Group and the Maldivian Aviation Safety Team for consultation. Involvement by these three groups help each group to identify well with the SPIs and understand the rationale.

Once the concurrence has been achieved at the operational levels described above, the SPIs are approved by the Chief Executive.

The CAA collects data continuously on the selected SPI package and performs analysis on them to determine the initial SPTs.

The process remains the same for redevelopment of SPIs and SPTs but backed with the analysis of the data collected with the current SPI package.

3.2.4 Analysis & Safety Actions

DO » Annex 19 para 3.4.2, Doc 9859 para 8.5.5

The CAA collects data continuously on the selected SPI package and performs analysis on them. These are routinely reports shared with the Maldivian Aviation Safety Team, SRG and the SRB. The SRB is responsible for strategic safety actions should performance not be within the expectations.

The results are fed-back into the SPI loop and a new ALoSP is determined.

3.3 Management of Change

DO » Annex 19 para 3.4.2, Doc 9859 para 8.5.6

The following changes are subject to management of change procedures. The management of change process for these activities is undertaken by the CAA and detailed in its Standard Operating Procedures.

CATEGORY	TYPE
Reorganisation of oversight authorities	Organisational
Changes to the SSP Processes	Organisational / Operational
Major changes to ICAO Annexes or CAA regulations	Organisational / Operational
Major changes to the operational environment	Organisational / Operational

3.4 Quality Control of CAA Operations

The CAA's Standard Operating Procedures contain process descriptions and instructions to be followed in approval, certification, oversight and safety management activities.

The CAA is subject to periodic formal audits by ICAO under the Universal Safety Oversight Audit Programme to measure how the Maldives complies with the ICAO Annexes. The CAA is also subject to informal standardisation audits under the SARI umbrella where the specific domains are audited against European standards adapted by the SARI countries.

4 Safety Promotion

PLAN » DO » CHECK » **IMPROVE »** Annex 19 para 3.5, Doc 9859 para 8.6

4.1 Internal Communication

DO » Annex 19 para 3.5.1, Doc 9859 para 8.6.8

4.1.1 Training

The CAA has established a robust training programme to ensure it has the necessary competencies to undertake its legal obligations. Refer section 1.5 for details on the training programme.

All new employees receive training on safety management systems. Further CAA holds training sessions on specific safety management issues that focuses on thorny issues that both the CAA and industry face.

4.1.2 Sharing of Safety Information

Informal information sharing is an important aspect of safety promotion within the CAA as it is made of a small team within an open office. The proximity of inspectors from different domains facilitate cross-domain internal communications. This informal "grapevine" supplements the more formal communication channels[7] and can transmit information quite rapidly and efficiently.

The weekly meeting of domain managers and the Chief Executive provides a semi-formal information sharing platform to share the most recent regulatory activities and emerging safety risks.

[7] James T. Tweedy, Healthcare Hazard Control and Safety Management pp. 57-58, 3rd Ed., 2014

The formal information sharing platforms include the monthly meetings of the Safety Review Group. The monthly meeting of the Safety Review Group is dedicated to safety topics as specified in its terms of reference. The minutes of these meetings, action items and supporting safety information is available on the Safety Management Software.

The Safety Management Software is also a key platform to share safety information. Safety reports under section 2.3 are made available, based on access rights, to all CAA Inspectors through the safety management software. The progress of these reports and any final reports/actions are also available to the staff. The platform also contains information on audits carried out by the CAA. Further heat maps and other trend analysis tools are made available through the software.

Annual Reports and other safety-relevant information are made available to staff through the shared network drives.

4.1.3 Communication between State Entities

The day-to-day formal communication channel between state entities is GEMS, the Government E-Letter Management System. This is a secure web portal maintained by the National Center for Information Technology that can be used to send letters and memos together with any attachments.

The second formal platform for communication between State entities on safety is the Safety Review Board. The Safety Review Board provides strategic direction to the different oversight entities and ensures resources are allocated to achieve the desired safety performance. It also reviews the safety promotion activities and provides strategic direction to improve safety promotion activities. The minutes of these meetings, action items and supporting safety information will be made available on the Safety Management Software.

State entities also use other semi-formal communication channels such as e-mail and informal communication channel such as WhatsApp and Viber to communicate on matters of safety.

4.2 External Communication

DO » Annex 19 para 3.5.2, Doc 9859 para 8.6.9

Education and awareness of key safety issues is made through various channels such as email, the CAA website, meetings, training courses, publications and safety reports.

4.2.1 Website

The CAA website is one of the primary means we share safety information with the industry, the public and our international partners. It hosts specific information concerning safety management as well topical information on aviation and the work the CAA does. It also hosts all the safety investigation reports issued by the Accident Investigation Coordinating Committee.

4.2.2 Joint Training

Each year the CAA hosts a wide variety of courses including ones on safety management. Some of these are dedicated to the CAA. Some are facilitated by the CAA for the full benefit of the Industry. But in most training courses, free slots are provided to members of the industry and the Accident Investigation Coordinating Committee.

The side-by-side training provides a critical opportunity for operational staff of both the CAA and industry to share safety information in an informal setting and suggest various improvements. This allows all staff to share information that could not be shared otherwise, improving communication, collaboration and cooperation not only between the CAA and Industry but also across different industry participants.

The joint training courses also provide an opportunity to “mediate” thorny issues as most courses are facilitated by extremely competent trainers from organisation such as ICAO, EASA and well established training organisations.

4.2.3 Advisory Services

The CAA offers industry advisory services and information, in its legal capacity as the oversight authority, through various channels such as email and face-to-face meetings.

4.2.4 Maldivian Aviation Safety Team meetings

The Maldivian Aviation Safety Team meetings provide a formal opportunity to share safety information within industry and between the CAA. Review of safety management implementation across the country, identification and mitigation of operational risks are key aims of this team. Refer 1.4.1 for further information.

The CAA is working on a “lessons learned” session in these meetings so that Operators could share their experiences related specific occurrences in a safe space.

4.2.5 International Cooperation

The CAA actively participates in ICAO meetings, COSCAP-SA and SARI to improve aviation safety within the SAARC region. The SARI working groups on rulemaking bring the industry, the CAA and other regional CAAs to make new rules to improve safety. This

platform provides an excellent opportunity to share information across the spectrum of aviation.

The Maldives has also signed a memorandum of understanding with EASA to enhance safety cooperation between Maldives and EASA.

4.2.6 Safety Information Monitoring System

The CAA has initiated the joining process to become part of the ICAO Safety Information Monitoring System to enhance our capability to analyse date pertinent to the monitoring of safety performance. This system is based on sharing of data.

Appendices

Appendix 1 – Safety Performance Indicators and Targets

AP1.1 Introduction

A clear acceptable level of safety performance (ALoSP) is necessary for a performance-based operating environment. This acceptable level is determined by setting safety objectives (section 1.2) and the safety performance indicators and targets (section 3.2) that inform us if our objectives have been met.

The safety performance indicators and the targets set in this Appendix specify the acceptable level of safety performance which the CAA and service providers must achieve in their daily operations.

AP1.2 Targets

We are aware the transition to risk and performance-based operations will not take place overnight. It will require sustained work and continuous joint development. It will also require clear targets – missing at this time for each indicator. We have therefore set a single target for all indicators.

Incorporate the threats identified in this SPI package in the safety management process.

This requires a review of your operations, definition of your acceptable level of safety, identification of implementation actions and monitoring the efficiency of these actions. This provides you with the freedom to assess the risk level in your operations and determine your acceptable level of safety and determine your own actions necessary to reach that level of safety.

AP1.2 Structure

This Appendix contains two sets of SPIs – State level SPIs monitored by the CAA and State level SPIs monitored by service providers. Each set is structured under two broad categories – System Risks and Operational Risks. These are then linked to the safety objectives set in section 1.2.

The SPIs that measure system risks focus on three categories – safety oversight (or compliance for organisations), safety management and infrastructure. These are mainly based on legal obligations applicable to the entity. For example, for the CAA, these arise as a Contracting State to the Chicago Convention.

The SPIs that measure operational risks focus on seven High Risk Categories[8] – Controlled Flight into Terrain (CFIT), Loss of Control In-flight (LOC-I), Mid Air Collisions (MAC), Runway Excursions (RE), Runway Incursions (RI), Ground Collisions (GCOL) and Fire.

[8] High Risk Category of Occurrences is a term used by ICAO to describe an occurrence type with actual fatalities, high fatality risk per accident or has a number of accidents and incidents

Two of these – ground collisions and fire are not in the Global Aviation Safety Plan (GASP) but are included based on our occurrence data. Conversely, while a GASP category may not be High Risk Category within the Maldives, all GASP categories are included as sufficient data to justify the exclusion of a category is not available at this time. For example, even though the Asia-Pacific Regional Aviation Safety Plan 2020-2022 excludes MAC as a High Risk Category, this is included.

The operational SPIs are broken down to three tiers – Tier 1, Tier 2 and Tier 3. Tier 1 refers to indicator such as number of accidents which provide little support to daily operations. Tier 2 targets key operational threats identified as the most common direct factors leading to accidents. Tier 3 targets contributing factors of Tier 2 threats.

AP1.3 Instructions for Use

You must go through the SPI summary table applicable to service providers and assess the suitability of the indicators based on your operations and operating environment. You must then, integrate the SPIs applicable to your activities in the safety management process. You must also introduce any additional SPIs relevant to your operation.

You must be able to justify why a particular SPI in the SPI summary table is not applicable to you.

AP1.4 SPI Summary Table 1 – SPIs monitored by the CAA

State level safety performance indicators and targets monitored by the CAA. The performance at State level is monitored by the Safety Review Board and ICAO (through the USOAP audits).

RISK	OBJECTIVE	#	SPI	TARGET	SOURCE
SYS	Strengthening of safety oversight capabilities	SO-01	ICAO USOAP Effective Implementation. [ICAO SPI 1.001]		ICAO USOAP
		SO-02	Implementation of ICAO SARPS applicable to the Maldives on schedule. [Percentage]		ICAO
		SO-03	Availability of oversight personnel. [Percentage]		CAA
		SO-04	USOAP findings corrected on time. [Percentage]		ICAO USOAP
SYS	Implementation of an effective State Safety Programme	SM-01	Effectiveness of the State Safety Programme. [Levels A to E]		CAA, ICAO
		SM-02	Implementation of the Safety Action Plan. [Percentage]		CAA
		SM-03	Industry adoption of safety management systems. [Percentage]		CAA
		SM-04	Safety Investigations completed on schedule. [Percentage].		CAA, AICC
SYS	Ensuring appropriate infrastructure is available for safe operations	INF-01	Implementation of core ANS infrastructure as defined in the Global Air Navigation Plan. [Percentage]		ANSP
		INF-02	Implementation of core aerodrome infrastructure as defined in the Global Air Navigation Plan. [Percentage]		AD
		INF-03	Expenditure on the development “soft infrastructure” (i.e. aviation professionals). [Percentage of CAA annual budget]		CAA
OPS	Continuous reduction of operational safety risks	OPS-01	Accidents by operation type, occurrence category, risk category and injury level. [ICAO SPI 1.102]		Safety Reports
		OPS-02	Fatalities by operation type and risk category. [ICAO SPI 1.104]		Safety Reports

RISK	OBJECTIVE	#	SPI	TARGET	SOURCE
OPS	Continuous reduction of operational safety risks	OPS-03	Serious incidents by operation type, occurrence category, risk category and injury level. [Number]		Safety Reports
		OPS-10	Occurrences related to controlled flight into terrain. [Number – sum of CFIT, TAWS warning and TAWS alert events]		Safety Reports
		OPS-20	Loss of control occurrences due to weather, human performance and technical failure. [Number]		Safety Reports
		OPS-30	Mid-air collisions and near misses. [Number – sum of MAC, TCAS alerts, level "busts", airprox events and airspace infringement events]		Safety Reports
		OPS-40	Runway excursions. [Number per 100,000 aircraft movements]		Safety Reports
		OPS-50	Runway incursions (as defined in Doc 4444). [Number per 100,000 aircraft movements]		Safety Reports
		OPS-60	Fire, smoke and fumes occurrences. [Number]		Safety Reports
		OPS-70	Ground collision occurrences. [Number]		Safety Reports
		OPS-81	In-flight incapacitation events and medical findings [Number – sum of in-flight crew incapacitation events and medical findings during medical assessments]		Safety Reports / Medical Portal
		OPS-82	Occurrences related to VFR operations outside VFR limits [Number]		Safety Reports

AP1.5 SPI Summary Table 2 – SPIs monitored by Service Providers

This table contains State level safety performance indicators and targets monitored by Service Providers. The performance at organisation level is monitored by the CAA.

The column marked "ORGS." Indicates the SPIs are applicable to different categories of service providers. "All" indicates that the SPI is applicable to all the organisations that require a safety management system.

RISK	OBJECTIVE	#	SPI	TARGET	ORGS.
SYS	Strengthening of compliance management capabilities	SP-SO-01	Internal and external findings, by domain, corrected on time. [Percentage]		All
SYS	Implementation of an effective Safety Management System	SP-SM-01	Effectiveness of the Safety Management System. [Levels A to E]		All
		SP-SM-02	Implementation of the organisation's Safety Action Plan [Percentage]		All
		SP-SM-03	Safety Investigations completed on schedule. [Percentage]		All
SYS	Ensuring appropriate infrastructure is available for safe operations	SP-INF-01	Implementation of core ANS infrastructure as defined in the Global Air Navigation Plan. [Percentage]		ANSP
		SP-INF-02	Implementation of core aerodrome infrastructure as defined in the Global Air Navigation Plan. [Percentage]		AD
OPS	Continuous reduction of operational safety risks	SP-O-10	Occurrences related to controlled flight into terrain. [Number – Sum of CFIT and CFIT Tier 3 items, CFIT - Tier 2]		AOC, ANSP, ADR
		SP-O-11	Incorrect altimeter pressure setting events. [Number, CFIT, MAC - Tier 3]		AOC, ANSP
		SP-O-12	TAWS warning and alert events. [Number, CFIT - Tier 3]		AOC
		SP-O-13	Errors, omissions and inconsistencies in Charts. [Number, CFIT - Tier 3]		AOC, ANSP
		SP-O-20	Loss of control occurrences due to weather, human performance and technical failure. [Number, LOCI – Tier 2]		AOC, ATO, ANSP, GH

RISK	OBJECTIVE	#	SPI	TARGET	ORGS.
		SP-O-21	Laser interference. [Number, LOCI – Tier 3]		AOC, ATO
		SP-O-22	Low speed and high speed events. [Number, LOCI – Tier 3]		AOC
		SP-O-23	Occurrences related to aircraft weight or balance. [Number, LOCI – Tier 3]		AOC, ATO, GH
		SP-O-24	Control system (including surfaces, auto-flight and indicator) failures. [Number, LOCI – Tier 3]		AOC, AIR
		SP-O-30	Mid-air collisions and near misses. [Number – sum of TCAS alerts, level "busts", airprox events and airspace infringement events, MAC – Tier 2]		AOC, ATO, ANSP
		SP-O-31	Level busts of more than 300 feet or more than 200 feet in RVSM airspace. [Number, MAC – Tier 3]		AOC, ATO, ANSP
		SP-O-32	Incorrect responses to TCAS-RA. [Number, MAC – Tier 3]		AOC
		SP-O-33	Transponder faults and failures. [Number, MAC – Tier 3]		AIR
		SP-O-40	Runway excursions. [Number per 100,000 aircraft movements, RE – Tier 2]		AOC, ATO, ANSP, ADR
		SP-O-41	Unstable approaches. [Number, RE – Tier 3]		AOC, ANSP
		SP-O-42	Abnormal runway contact. [Number, RE – Tier 3]		AOC, ATO
		SP-O-43	High speed rejected take-off. [Number, RE – Tier 3]		AOC
		SP-O-44	Landing gear and reverse thrust malfunctions. [Number, RE – Tier 3]		AIR
		SP-O-50	Runway incursions (as defined in Doc 4444). [Number per 100,000 aircraft movements, RI – Tier 2]		AOC, ATO, ANSP, ADR
		SP-O-60	Fire, smoke and fumes occurrences. [Number, FIRE – Tier 2]		AOC
		SP-O-61	Dangerous goods events. [Number – sum of incorrectly prepared, loaded or handled, FIRE – Tier 3]		AOC, GH
		SP-O-70	Ground collision occurrences. [Number, GCOL – Tier 2]		AOC, ADR, ANSP, GH

RISK	OBJECTIVE	#	SPI	TARGET	ORGS.
		SP-O-80	Communications system malfunctions or disruptions. [Number – Tier 3]		ANSP
		SP-O-81	Navigation system malfunctions or disruptions. [Number – Tier 3]		ANSP
		SP-O-82	Surveillance system malfunctions or disruptions. [Number – Tier 3]		ANSP
		SP-O-83	Shortcomings in airport rescue services. [Number – Tier 3]		ADR
		SP-O-84	Deficiencies in runway condition. [Number – Tier 3]		ADR
		SP-O-85	Wildlife strikes [Number, Tier 3]		AOC, AD

Appendix 2 – Safety Action Plan

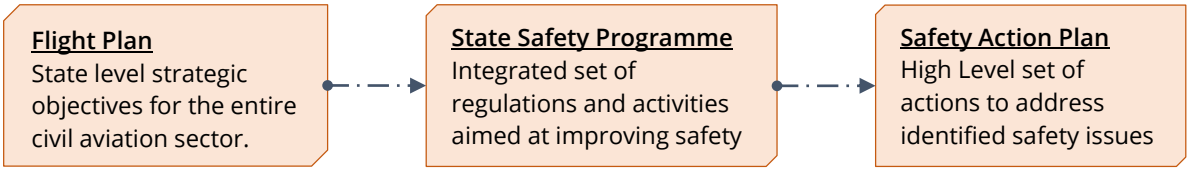
PLAN » Doc 10131, Doc 9859 para 8.3.6.20-23, GASP Part II Chapter 2

AP2.1 Introduction

This Safety Action Plan presents our high level actions aimed at enhancing aviation safety in the Maldives. This initial set of actions are applicable for the period 2020-2022.

Our Safety Action Plan stems from 'Flight Plan 2020-2025' which addresses all aspects of air transport at the State-level with the objective of providing a clear and comprehensive planning and implementation strategy for the future development of the entire civil aviation sector. The Safety Action Plan contains in-depth information specific to aviation safety aspects addressed in the Flight Plan. Refer 1.10.

The Safety Action Plan is part our State Safety Programme as it is the documented outcome of the many processes within our oversight entities to identify and address safety issues that affect our aviation system.



AP2.2 Strategic Approach

The strategic priorities that underpin the safety actions identified in the Safety Action Plan are derived from our 'Flight Plan'. Safety forms the cornerstone of the 'Flight Plan' and will continue to be our highest priority.

While the strategic priorities that form the basis of the safety action flow from the 'Flight Plan', the categorisation and prioritisation of individual tasks are based on the organizational challenges and operational safety risks, as presented in the ICAO global aviation safety roadmap, as well as issues specific to the Maldives identified through our developing State Safety Programme.

These actions are tied to the safety objectives identified in section 1.2 as well performance indicators identified in Appendix 1. The objectives focus our action on areas that matter most and the SPIs permit us to measure progress.

AP2.3 Operational Context

The Maldives is an island nation composed of 1192 coral islands scattered over 900 km of the Indian Ocean making it one of the most geographically dispersed countries in the world. 99.6% of our territorial area consists of water. These are key reasons why aviation is critical for the Maldives.

The direct contribution of aviation to our economy stands at 10.6%, the highest in the Asia Pacific region. We had approximately 2 million international passenger movements and 1.8 million domestic passenger movements in the year 2019. Four commercial air

transport operators provide air transport within the Maldives while one of them provides air transport services both within the Maldives and internationally. These operators use an aircraft fleet of approximately 100 aircraft most of which are turboprop aircraft. There are 15 domestic airports and approximately 100 floating platforms. Our airspace is classified into Class A, D and G.

The ICAO universal safety oversight audit programme is one of the yardsticks used to measure safety of aviation within the Maldives. The Maldives scored 66.83% in the last audit. The detailed breakdown can be viewed on the ICAO interactive viewer. The second yardstick is the number of accidents and serious incidents. The Maldives reported 6 accidents and 9 serious incidents in the period 2014-2019, none of which were fatal.

Key challenges to aviation in the Maldives highlighted by the ICAO audits and accident reports include geography, infrastructure and an acute lack of competent technical personnel. This plan is aimed at mitigating these risks.

AP2.4 Implementation

The Safety Action Plan is more than a plan. It is a reporting tool for the collection of information to support our State Safety Programme and provide information flow to the ICAO Global Aviation Safety Plan.

The CAA will use the safety performance indicators listed in Appendix 1 to measure the implementation of the Safety Action Plan. The Journey Log, our annual safety report, will be used to report, to the stakeholders and the general public, our progress.

In the event the national safety goals and targets are not met, the root causes will be presented. This may lead to an unscheduled revision of this Plan.

AP2.5 Summary of the Safety Action Plan items

This table the high level actions that will be undertaken by the Maldives to address our safety issues.

OBJECTIVE	#	ACTION ITEM	'20	'21	'22	SPIs
Strengthening of safety oversight capabilities	A-O-01	Amend Act 2/2001 to include all ICAO CE- 1 items and to maintain a sustainable and stable source of income. [GASP Roadmap 1C, 1D, 2A, 2C, 3A, 3C, 4A, 4C, 13A]	x			SO-01, SO-03
	A-O-02	Implement ICAO SARPS applicable to the Maldives on schedule. [GASP Roadmap 1C, 1D, 2A, 2C, 3A, 3C, 4A, 4C, 7D, 7E, 13A]	x	x	x	SO-02
	A-O-03	Close all findings issued against the Maldives under the USOAP Audit of 2014. [GASP Roadmap 7A, 7B, 7E]	x	x		SO-04
	A-O-04	Close all findings issued against the Maldives under SARI standardisation audits. [GASP Roadmap SEI-6/11]	x			SM-02
	A-O-05	Migrate surveillance activities under the AIR, OPS, AGA and ANS domains to the management software to improve audit management and data sharing. [GASP Roadmap 2B]	x	x		-
	A-O-06	Obtain no less than 90% of the staff required to enable effective safety oversight. [GASP Roadmap SIE-4]	x	x		SO-03
	A-O-07	Train all staff performing safety oversight functions in accordance with the minimum competency requirements specified in the Standard Operating Procedures. [GASP Roadmap SEI-5]	x	x	x	SO-03
	A-O-08	Train all staff performing safety oversight functions on risk and performance based oversight. [GASP Roadmap SEI-5, 19A]	x	x		SO-03

OBJECTIVE	#	ACTION ITEM	'20	'21	'22	SPIs
Strengthening of safety oversight capabilities	A-O-09	Revise the CAA compensation scheme. [GASP Roadmap 5C, 5E]	x	x		SO-03
	A-O-10	Complete and submit the ICAO SAAQ and self-assessment checklists at least once a year. [GASP Roadmap 7B, 7C, 7E, 12B, 12C]	x	x	x	SM-02
	A-O-11	Digitise training record management to better identify and track qualifications and trainings. [GASP Roadmap SEI-5]	x			SM-02
	A-O-12	Consistently participate in the SARI working groups on rule making [GASP Roadmap SEI-6/11]	x	x	x	SO-02
Implementation of an effective State Safety Programme	A-S-01	Complete the implementation of the State Safety Programme in accordance with the GASP objectives. [GASP Roadmap SEI-13A to 21C]	x	x	x	SM-01
	A-S-02	Develop transition plan regarding those organisations where an SMS is yet to be implemented [GASP Roadmap SEI-13E]	x			SM-03
	A-S-03	Develop sector level risk profiles to inform the CAA oversight planning. [GASP Roadmap SEI-17E]	x	x		SM-02
	A-S-04	Establish and populate a Risk Register at the State level. [GASP Roadmap SEI-17E]	x	x		SM-02
	A-S-05	Develop methodology to measure effectiveness of SMS and the SSP. [GASP Roadmap]	x	x		SM-02
	A-S-06	Harmonise internally the assessment methodology to measure the SMS effectiveness [GASP Roadmap SEI-13F]	x	x		SM-02
	A-S-07	Provide training to staff performing safety oversight on the use of the Event Risk Classification (ERC) Scheme [GASP Roadmap SEI-21B]	x	x		SM-02

OBJECTIVE	#	ACTION ITEM	'20	'21	'22	SPIs
Implementation of an effective State Safety Programme	A-S-08	Promote the use of the Event Risk Classification (ERC) Scheme by regulated entities [GASP Roadmap SEI-13F]	x			SM-02
	A-S-09	Publish the Annual Safety Report, Journey Log. [GASP Roadmap SEI-16D, 17A, 21C]	x	x	x	SM-01, SM-02
	A-S-10	Update the State Safety Programme document, Safety Performance Indicators and the Safety Action Plan at least once a year. [GASP Roadmap SEI-16C]	x	x	x	SM-02
Ensuring appropriate infrastructure is available for safe operations	A-I-01	Promote the implementation of core aerodrome and ANS infrastructure defined in the Global Air Navigation Plan [GASP Goal 6]	x	x	x	INF-01, INF-02
	A-I-02	Continue to develop "soft infrastructure" under the AviatorsNG programme. [GASP Goal 6]	x	x	x	INF-03
Continuous reduction of operational safety risks	A-R-01	Audit the effectiveness of the local runway safety teams (including effectiveness of SMS in reducing RI precursor events). [GASP Roadmap RE1A]	x	x		OPS-50
	A-R-02	Review airspace design issues at airprox/infringement hotspots with a view to implementing measures to reduce such events. [GASP Roadmap MAC3]	x	x		OPS-30
	A-R-03	Implement Performance Based Navigation (PBN) as dictated by the ICAO PBN plan. [GASP Roadmap MAC3]	x	x	x	OPS-30
	A-R-04	Certify all Maldivian registered aircraft for ADS-B out capability. [GASP Roadmap MAC3]	x			OPS-30
	A-R-05	Ensure all Maldivian registered air equipped with TAWS in accordance with ICAO Annex 6 [GASP Roadmap CFIT1A]	x			OPS-10

OBJECTIVE	#	ACTION ITEM	'20	'21	'22	SPIs
Continuous reduction of operational safety risks	A-R-06	Review (and implement if necessary) continuous descent final approaches [GASP Roadmap MAC1B]	x	x		OPS-30
	A-R-07	Review (and implement if necessary) minimum safe altitude warning (MSAW) systems [GASP Roadmap CFIT1F]	x	x		OPS-10
	A-R-08	Promote the use of GPS-derived position data to feed TAWS [GASP Roadmap CFIT1H]	x	x		OPS-10
	A-R-09	Amend regulations to require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes [GASP Roadmap LOC1A]	x	x		OPS-20
	A-R-10	Ensure all Maldivian registered air equipped with ACAS in accordance with ICAO Annex 6. [GASP Roadmap MAC1A]	x	x		OPS-30
	A-R-11	Certify all aerodromes in accordance with MCAR-139. [GASP Roadmap RE1E]	x	x	x	OPS-40
	A-R-12	Require development of procedures to systematically reduce the rate of unstabilised approaches to runways. [GASP Roadmap RE1G]	x	x		OPS-40

Appendix 3 – SSP Implementation Plan and Gap Analysis

The SSP implementation Plan and the Gap Analysis continue to evolve rapidly at this inception phase. The Maldives has decided to leverage the ICAO iSTARS SSP Gap Analysis to maintain the Gap Analysis and Implementation Actions. This tool is available to the aviation community through the ICAO iSTARS portal (password protected).