



## State Safety Programme Manual

**RECORD OF AMENDMENTS**

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## **FOREWORD**

The Standards and Recommended Practices (SARPs) in the ICAO Annex 1 – Personnel Licensing, Annex 6 – Operation of Aircraft, Annex 8 – Airworthiness of Aircraft, Annex 11 – Air Traffic Services, Annex 13 – Aircraft Accident and Incident Investigation and Annex 14 – Aerodromes require ICAO Contracting States to develop and maintain the State Safety Programme (SSP) in order to ensure acceptable level of safety in civil aviation

To facilitate implementation of ICAO SARPs related to the State Safety Programme, ICAO developed and published Safety Management Manual (SMM), Doc 9859. The manual describes basic safety concepts, as the foundation upon which to understand the need for both a Safety Management System (SMS) and a State Safety Programme (SSP) as well as how these safety concepts are embodied into the ICAO SARPs contained in Annexes 1, 6, 8, 11, 13 and 14. The manual outlines a framework for the implementation of an SMS by service providers and the progressive implementation and maintenance of an SSP, with emphasis on the role Tanzania Civil Aviation Authority plays in supporting SMS implementation by service providers.

The objective of this manual is to provide guidance on how to accept and oversee the implementation of the key components of an SMS, developing and implementing an SSP in compliance with the relevant ICAO SARPs with a view to achieve acceptable level of safety.

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## CHAPTER 1 INTRODUCTION

### 1.1. Definitions

When the following terms are used in this manual, they have the following meanings:

**Acceptable level of safety** Minimum degree of safety that must be assured by a system in actual practice

**Accident** An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:

- a) a person is fatally or seriously injured as a result of:
  - being in the aircraft, or
  - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
  - direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or
- b) the aircraft sustains damage or structural failure which:
  - adversely affects the structural strength, performance or flight characteristics of the aircraft, and
  - would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or
- c) the aircraft is missing or is completely inaccessible.

*Note 1.— For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified as a fatal injury by ICAO. Note 2 - An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.*

**Aerodrome certificate.** A certificate issued by the appropriate authority under applicable regulations for the operation of an aerodrome.

**Aeronautical Information Publication (AIP).** A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

**Air operator certificate (AOC).** A certificate authorizing an operator to carry out specified commercial air transport operations.

**Approved maintenance organization.** An organization approved by a Contracting State, in

accordance with the requirements of Annex 6, Part I, Chapter 8 — Aeroplane Maintenance, to perform maintenance of aircraft or parts thereof and operating under supervision approved by that State. Note.— Nothing in this definition is intended to preclude that the organization and its supervision be approved by more than one State.

**Approved training.** Training conducted under special curricula and supervision approved by a Contracting State that, in the case of flight crew members, is conducted within an approved training organization.

**Approved training organization.** An organization approved by a Contracting State in accordance with the requirements of Annex 1, 1.2.8.2 and Appendix 2 to perform flight crew training and operating under the supervision of that State.

**Certification,** A process performed by the appropriate authority in order to approve an established provider of Aviation related services.

**Certified aerodrome.** An aerodrome whose operator has been granted an aerodrome certificate.

**Flight data analysis.** A process of analysing recorded flight data in order to improve the safety of flight operations.

**Hazard.** A condition or an object with the potential to cause injuries to personnel, damage to equipment or structures, loss of material, or reduction of ability to perform a prescribed function.

**Incident.** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation. Note.— The types of incidents which are of main interest to the International Civil Aviation Organization for accident prevention studies are listed in the Accident/Incident Reporting Manual (ADREP Manual) (Doc 9156).

**Investigation.** A process conducted for the purpose of accident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and, when appropriate, the making of safety recommendations.

**Level of safety .** Degree of safety of a system, representing the quality of the system, safety-wise, expressed through safety indicators.

**Licensing Authority.** The Authority designated by a Contracting State as responsible for the licensing of personnel.

*Note.— In the provisions of Annex 1, the Licensing Authority is deemed to have been given the following responsibilities by the Contracting State:*

- a) *assessment of an applicant's qualifications to hold a licence or rating;*
- b) *issue and endorsement of licences and ratings;*
- c) *designation and authorization of approved persons;*
- d) *approval of training courses;*



- e) *approval of the use of flight simulation training devices and authorization for their use in gaining the experience or in demonstrating the skill required for the issue of a licence or rating; and*
- f) *validation of licences issued by other Contracting States.*

**Maintenance.** The performance of tasks required ensuring the continuing airworthiness of an aircraft or ground based equipment in the service of the Aviation sector including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

**Maintenance organization's procedures manual .** A document endorsed by the head of the maintenance organization which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems.

**Maintenance programme.** A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of aircraft or ground based equipment in the service of the Aviation sector to which it applies.

**Maintenance release.** A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner, either in accordance with the approved data and the procedures described in the maintenance organization's procedures manual or under an equivalent system.

**Operations specifications .** The authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

**Performance criteria.** Simple, evaluative statements on the required outcome of the competency element and a description of the criteria used to judge whether the required level of performance has been achieved.

**Quality assurance.** Part of quality management focused on providing confidence that quality requirements will be fulfilled.

**Quality control.** Part of quality management focused on fulfilling quality requirements.

**Quality management.** Coordinated activities to direct and control an organization with regard to quality.

**Quality system.** Documented organizational procedures and policies; internal audit of those policies and procedures; management review and recommendation for quality improvement.

**Safety.** The state in which the possibility of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and safety risk management.

**Safety indicators.** Parameters that characterize and/or typify the level of safety of the system.

**Safety management system.** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

**Safety programme.** An integrated set of regulations and activities aimed at improving safety.

**Safety risk.** Assessment, expressed in terms of predicted probability and severity, of the consequences of a hazard, taking as reference the worst foreseeable situation.

*Note - Typically, safety risks are designated through an alphanumeric convention that allows for their measurement.*

**Safety risk management.** A generic term that encompasses the assessment and mitigation of the safety risks of the consequences of hazards that threaten the capabilities of an organization, to a level as low as reasonably practicable (ALARP).

**Safety risk probability.** The likelihood that an unsafe event or condition might occur.

**Safety risk severity.** The possible consequences of an unsafe event or condition, taking as reference the worst foreseeable situation.

**Safety targets.** Concrete safety objectives to be achieved.

**State of Manufacture.** The State having jurisdiction over the organization responsible for the final assembly of the aircraft.

**State of Registry.** The State on whose register the aircraft is entered.

*Note.— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).*

**Target level of safety (TLS).** A generic term representing the level of risk which is considered acceptable in particular circumstances.

**Value of a safety indicator.** Quantification of a safety indicator.

**Value of a safety target.** Quantification of a safety target.

## 1.2. Acronyms and Abbreviations

ADREP	Accident/incident data reporting (ICAO)
AEP	Aerodrome emergency plan
ALARP	As low as reasonably practicable
AMJ	Advisory material joint
AMO	Approved maintenance organization
AOC	Air operator certificate
ASDE	Airport surface detection equipment
ASR	Air safety report
ATC	Air traffic control
ATCO	Air traffic controller
ATM	Air traffic management
ATS	Air traffic service(s)
TCAA	Civil aviation authority
CAD	Civil Aviation Directorate
CARs	Civil Aviation Regulations
CDA	Constant descent arrivals
CEO	Chief executive officer
CFIT	Controlled flight into terrain
CIP	Commercially important person
CMC	Crisis management centre
CRDA	Converging runway display aid
CRM	Crew resource management
CVR	Cockpit voice recorder
DGCA	Director General of Civil Aviation
DME	Distance measuring equipment
Doc	Document (ICAO)
EC	European Commission
ECCAIRS	European Co-ordination Centre for Aviation Incident Reporting Systems
ERP	Emergency response plan
FDA	Flight data analysis
FDM	Flight data monitoring
FDR	Flight data recorder
FOD	Foreign object (debris) damage ft Feet
GPS	Global positioning system
ILS	Instrument landing system
IMC	Instrument meteorological conditions
ISO	International Organization for Standardization
Kg	Kilogram(s)
LOFT	Line-oriented flight training
LOSA	Line operations safety audit m Metre(s)
MDA	Minimum descent altitude
MEL	Minimum equipment list
MOR	Mandatory occurrence report

MRM	Maintenance resource management
NM	Nautical mile(s)
NSA	National Supervisory Authority
OJT	On-the-job training
PC	Personal computer
QA	Quality assurance
QC	Quality control
QMS	Quality management system
RCC	Rescue Co-ordination Centre
RVSM	Reduced vertical separation minimum
SA	Safety assurance
SAG	Safety action group
SARPs	Standards and Recommended Practices (ICAO)
SDCPS	Safety data collection and processing systems
SES	Single European Sky
SHEL	Software/Hardware/Environment/Liveware
SMM	Safety management manual (ICAO Doc 9859)
SMS	Safety management system(s)
SMSM	Safety management systems manual
SOPs	Standard operating procedures
SRB	Safety review board SRM Safety risk management
SSP	State safety programme
TLH	Top level hazard
TRM	Team resource management
USOAP	Universal Safety Oversight Audit Programme (ICAO)
VIP	Very important person
VMC	Visual meteorological conditions
VOR	Very high frequency omni directional range.

## CHAPTER 2 GENERAL

### 2.1. Purpose of this document

2.1.1. Section 2.1.1 of the Civil Aviation Act, requires establishment of State Safety Programme in Tanzania.

2.1.2. ICAO Doc 9859 *Safety Management Manual*, paragraph 6.3.1 and 6.4.1 state:

Annexes 1, 6, 8, 11, 13 and 14 include the requirement for States to establish a State Safety Programme (SSP), in order to achieve an Acceptable Level of Safety in civil aviation.

The acceptable level of safety (ALoS) to be achieved (by an SSP) shall be established by the State. \*see Annexes 1, 6, 8, 11, 13 and 14 to the Chicago Convention.

2.1.3. The purpose of this document is to demonstrate:

- a) Compliance with the requirements in the Civil Aviation Act
- b) compliance by the TCAA with the relevant ICAO SARPs;
- c) that the TCAA has conducted gap analysis comparing the State's Safety Programme (SSP) requirements against the existing resources (see SSP Gap Analysis in **Appendix – A**);
- d) that the TCAA has developed the State's Safety Programme (SSP) and its implementation plan based on the results of the SSP gap analysis (see SSP Implementation Plan in **Appendix – B**);
- e) the regulatory framework, thereby enabling visible linkage between national regulatory planning and an operator's/service provider's SMS;
- f) the integration of the diverse, multidisciplinary safety regulatory activities into a coherent whole, as illustrated in the diagram in **Appendix - C**;
- g) that adequate provisions are being made for the safety regulation of the aviation system within the jurisdiction of the State and that the State is meeting the requirements of the larger global aviation system;
- h) that regulatory, oversight and enforcement functions are in place;
- i) that risk-based resource allocations approach for all regulatory functions (proactively targeting regulatory attention on known areas of high risk) is adopted;
- j) that the TCAA has established performance monitoring for safety regulatory functions (licensing, certification, enforcement, etc.);
- k) that acceptable levels of safety for aviation within the State are being set and achieved, and expressed in terms of safety performance indicators and safety performance targets;
- l) that the TCAA has established hazard identification programme through the implementation of:
  - i. Mandatory occurrence reporting system;
  - ii. Voluntary (non-punitive) incident reporting system;
  - iii. Service difficulty reporting system, etc.

- m) that the TCAA has established active and passive safety promotion programmes to assist operators and to make safety information broadly accessible (including safety database, trend analysis, monitoring of best industry practices, etc.);
- n) that the TCAA has established national safety monitoring programmes (trend monitoring and analysis, safety inspections, incident investigations and safety surveillance);
- o) that the TCAA has established regular regulatory safety audits to ensure compliance by all operators and service providers; and
- p) the State has a competent accident and incident investigation capabilities (independent from regulatory authority).

## **2.2. Background**

- 2.2.1. As a signatory to the Convention on International Civil Aviation (the Chicago Convention) Tanzania agrees to comply with the Standards and Recommended Practices (SARPs) published by the International Civil Aviation Organization (ICAO) in the Annexes to the Convention.
- 2.2.2. The Tanzania Civil Aviation Act requires the Authority to establish a State Safety Programme with controls that will govern the operations of the service provider's safety management system (SMS) in order to achieve an acceptable level of safety
- 2.2.3. TCAA is entrusted with the responsibility of safety regulation of all aspects of civil aviation, including the licensing of personnel and the certification of aircraft, air operators, airports and air traffic services.
- 2.2.4. DGCA is responsible for regulatory oversight of aviation activities within the State and of aircraft on their register wherever they may be.
- 2.2.5. TCAA has responsibility for ensuring that financial and human resources are sufficient for establishment and maintenance of SSP.

## **2.3. State's Safety Programme Gap Analysis**

- 2.3.1. The TCAA is responsible for the implementation of a safety programme in order to achieve an acceptable level of safety for the activities performed by the service providers. The State Safety Programme (SSP) is an integrated set of regulations and activities aimed at improving safety.
- 2.3.2. The implementation of an SSP requires the TCAA conducts an analysis of its safety system to determine which components and elements of an SSP are currently in place and which components and elements must be added or modified to meet the implementation requirements. This analysis is known as gap analysis, and it involves comparing the SSP requirements against the existing resources.

The SSP gap analysis provided in checklist format in **Appendix – A**, provides information to assist in the evaluation of the components and elements that comprise the ICAO SSP framework and to identify the components and elements that will need to be developed.

## **2.4. State's Safety Programme Implementation Plan**

Based on the result of the SSP gap analysis the SSP implementation plan has been developed and is provided in the **Appendix – B**.

## **2.5. Document Control**

- 2.5.1. The SSP Manual will be made available to all regulatory staff having safety oversight responsibilities within the Authority.
- 2.5.2. Changes to this document will be made by a controlled amendment service in conformity with applicable procedures.
- 2.5.3. The Manual shall be reviewed at least once annually to ensure its relevance and currency in regard to the Legislation and operating regulations.
- 2.5.4. The Director General of Civil Aviation shall be responsible for review, amendment, and endorsement of the Manual.

## **2.6. Distribution List and Record of Copies of the SSP Document**

The number of copies of this SSP document produced for use by officials will be controlled through a Controlled Number and approved distribution system. One printed copy of the manual has been designated as the “Master Copy” which will be retained with the SSP Accountable Manager.

## **CHAPTER 3 STATE’S SAFETY POLICY AND OBJECTIVES**

### **3.1. Safety Policy**

The Tanzania Civil Aviation Authority of (TCAA) firmly believes that growth of air transport industry depends primarily on the confidence that members of the public place on flight safety. Therefore the Tanzania Civil Aviation Authority assigns the topmost priority to safety in aviation in order to ensure safer skies for all.

TCAA is committed to planning, developing, implementing, maintaining and constantly improve rules, strategies and processes to ensure that all aviation activities that take place under the oversight of TCAA will achieve the Acceptable Level of Safety (ALOS) performance whilst meeting both national and international standards.

The holders of Aviation certificates of TCAA shall require demonstrating that their management systems adequately reflect an SMS approach. The expected result of this approach is improved safety management, safety practices, safety promotion including safety reporting within the civil aviation industry.

All levels of management in the TCAA starting with the Director General of Civil Aviation and Chief executive Officer are accountable for the delivery of highest level of safety performance within the TCAA.

**The TCAA safety policy states as follows:**

The management of civil aviation safety is the primary responsibility of the Authority aiming at achieving the acceptable level of safety, commensurate with the current and future growth of aviation activity. The Authority is committed to develop, implement, maintain and continuously improve strategies and processes to ensure that all aviation activities under its jurisdiction consistently achieve the highest level of safety performance, while meeting both national and international standards.

The holders of aviation certificates and licenses in Tanzania are required to demonstrate that their management systems adequately reflect a Safety Management System (SMS) approach. The expected result of this approach is improved safety management and safety practices, including safety reporting and sharing of safety related data and information within the civil aviation industry.

In Tanzania, all levels of aviation management are accountable for the delivery of the highest level of safety performance, starting with the Accountable Executive.

The Authority is fully committed to achieving and maintaining the following:

- a) Development of legislative framework, specific operating regulations and policies that build upon safety management principles based on a comprehensive analysis of the civil aviation system;
- b) Consulting with all segments of the civil aviation industry on issues regarding regulatory development;
- c) Supporting the management of civil aviation safety through effective safety reporting and communication system;
- d) Interacting effectively with service providers in the resolution of safety concerns;



- e) Ensuring that within the Authority, sufficient resources are allocated and personnel have the proper skills and are trained in discharging their responsibilities, both safety related and otherwise;
- f) Conducting both performance-based and compliance-oriented oversight activities, supported by analyses and prioritized resource allocation based on safety risks analysis;
- g) Complying with and, wherever possible, exceeding international safety requirements and standards;
- h) Promoting and educating the civil aviation industry on safety management concepts, principles and practices;
- i) Overseeing the implementation of SMS of the civil aviation organizations;
- j) Ensuring that all activities under oversight achieve the highest safety standards;
- k) Establishing provisions for the protection of safety data, collection and processing systems (SDCPS), so that people are encouraged to provide essential safety-related information on hazards and there is a continuous flow and exchange of safety management data between Authority and service providers;
- l) Establishing and measuring the realistic implementation of the SSP against safety indicators and safety targets which are clearly identified; and
- m) Promulgating an enforcement policy that ensures that no information derived from any SDCPS established under the SSP or the SMS will be used as the basis for enforcement action or apportioning of blame except in the case of gross negligence or flagrant violation.

This Policy must be understood, implemented and observed by all staff involved in activities related to safety oversight responsibilities within the Authority

.....  
**Director General of Civil Aviation**

**(This policy was endorsed by the Director General of Civil Aviation on 15th January 2010.)**

### **3.2. TCAA Safety Standards**

Tanzania has promulgated a national legislative framework and specific regulations to ensure compliance with international and national standards, and that define how the Tanzania Civil Aviation Authority (TCAA) will oversee the management of safety. This includes the TCAA's participation in specific activities related to the management of safety, and the establishment of the roles, responsibilities, and relationships of organizations in the system. The safety standards are periodically reviewed to ensure they remain relevant and appropriate to Tanzania.

### **3.3. Safety Regulatory Framework – Objectives and Criteria (See diagram at Appendix – D)**

The regulatory framework meets the following objectives or criteria:

- a) To ensure that the safety regulatory regime of Tanzania meets the ICAO 8 Critical Elements of a safety oversight system (**see Appendix – E**). Effective implementation of the Critical Elements demonstrates that TCAA is a competent safety regulatory body.
- b) Legislative system in Tanzania comprises of two tiers:
  - i. the primary aviation legislation: in this case the Civil Aviation Act, CAP 80 RE as amended
  - ii. Tanzania Civil Aviation Regulations (TCARs) as ammended
  - iii.
- c) The technical guidance materials are published in the form of Advisory Circulars and Orders.
- d) The regulatory framework provides consistency and compliance with the Annexes to the Convention wherever practicable.
- e) The regulatory framework gives effect to, or enables, the application of the TCAA regulations.

### **3.4. Civil Aviation Act**

The Civil Aviation Act CAP 80 RE 2006 as amended, is the primary legislation that provides the authority to implement other statutory instruments in the area of civil aviation.

### **3.5. Civil Aviation Regulations**

- 3.5.1. The Civil Aviation Regulations as amended are the operating regulatory requirements of the State.

It is important to note that the DGCA is given a wide variety of discretionary powers under the TCARs to grant certificates, licences and approvals of various kinds.

### **3.6. Advisory Circulars**

The Advisory Circulars (AC) will be made available to operators from time to time to convey general and technical information of interest. They are advisory in nature and when referring to a technical procedure or process may be considered as one means, but not the only means of application of the procedure or process. ACs may also be used to amplify or clarify certain Regulations.

### **3.7. Orders**

- 3.7.1. Assist objective regulation by providing TCAA inspector staff with essential information and protocols. As the TCAA Requirements have been designed to suit the needs of aviation activity within the State, the guidance for **inspectors has to be** consistent with those requirements. Technical procedures provide the mechanism for TCAA inspectors to make an objective assessment of compliance whilst maintaining the safety objectives of the TCAA Requirements.

### **3.8. Consultation**

**New issue** or all amendments to TCARs will be the subject of a full consultation exercise. TCARs amendments/new issues are subject to consultation with the industry unless minor in nature. The relevant head of the section in the TCAA is responsible for the consultation process. With regard to the new issue or the amendment of TCARs the TCAA will consult the:

- (a) concerned Ministry;
- (b) concerned Department; and
- (c) aviation industry;

### **3.9. Monitoring and Review of the State's Regulatory Framework**

3.9.1. **Oversight of the regulatory framework:** The regulatory framework is monitored continuously by TCAA in the course of its usual regulatory business. A full, formal review of the framework will be undertaken in accordance with the TCAA current Business Plan.

3.9.2.

3.9.3. **Maintenance of the regulatory framework:** The DGCA is responsible for the administration necessary to maintain the regulatory framework. The TCAA has suitable procedures and is adequately resourced (staffed, funded etc), for the longer term, to fulfill this task.

### **3.10. TCAA Safety Responsibilities and Accountabilities**

Tanzania has identified and defined the TCAA's requirements, responsibilities and accountabilities regarding the establishment and maintenance of the State's safety programme. This includes the directives to plan, organize, develop, control and continuously improve the State's safety programme in a manner that meets the State's safety needs. It also includes a clear statement about the provision of the necessary human and financial resources for the implementation of the State's safety programme. In particular, the following accountabilities and responsibilities have been identified for the different safety regulatory personnel

#### **1.1 Director General (Accountable Executive)**

The Director General –TCAA is the Accountable Executive and shall possess administrative responsibility and accountability, on behalf of the United Republic of Tanzania, for the implementation, coordination and maintenance of the SSP. Among the important responsibilities and accountabilities include, but not limited to the following:

- a. final authority on issues related to the allocation of resources within the Tanzania Civil Aviation Authority that has been designated as the placeholder for the SSP;
- b. authority over service providers' certificate management aspects;
- c. responsibility for the coordination of the resolution of State's aviation safety issues under the SSP

#### **1.2 Director of Safety Regulation (Accountable Manager)**

The Director of Safety Regulation shall be the Accountable Manager and shall possess technical and coordinating responsibility and accountability, on behalf of the United Republic of Tanzania, for the implementation, coordination and maintenance of the SSP. Among the technical responsibilities and accountabilities include, but not limited to the following:

- a. advise the Director General on matters relating to the allocation of resources within the Tanzania Civil Aviation Authority to ensure implementation and maintenance of SSP

- b. advise the Director General over service providers' certificate management aspects;
- c. Provide expert advise on matters relating to coordination of the resolution of State's aviation safety issues under the SSP
- d. Direct, monitor and guide the SSP implementation status and activities conducted by the SSP Implementation Team
- e. Coordinate and organize meetings of the Safety Review Board and directly advise the Director General on safety management issues to ensure protection of the public.

### **1.3 Safety Review Board**

Every member of the Safety Review Board shall be directly involved in the implementation and maintenance of the SSP. The Safety Review Board shall be responsible for:

- a. effectiveness of the SSP implementation plan;
- b. safety concerns are resolved in a timely manner;
- c. safety performance against the TCAA's safety policy and objectives;
- d. effectiveness of the TCAA's safety management processes
- e. effective utilization of allocated resources
- f. strategic direction to the SSP Implementation Team.

### **1.4 SSP Implementation Team**

Every member of the SSP Implementation Team shall be directly involved in the implementation and maintenance of the SSP. The SSP implementation Team shall be responsible for:

- a. Conducting gap analysis to enable assessment of maturity and existence of the SSP;
- b. Developing SSP Implementation plan
- c. Reviewing SSP Implementation plan to ensure phase implementation and maintenance of the SSP
- d. Selecting and defining safety targets and safety indicators
- e. Continuous collection of safety data to ensure "data-driven" SSP is achieved
- f. Establishing the initial and mature acceptable level of safety (ALoS) at individual and aggregate levels within Tanzania

## 1.5 Safety Inspectors

Every Safety Inspector under the Division of Safety Regulation shall be individually involved in the implementation and maintenance of the SSP. The Safety inspectors shall be responsible for the following duties:

- a) Conducting inspections for the certification or licensing in accordance with the regulations, standards and recommendations;
- b) Ensuring development and implementation of service providers SMS in accordance with the state's Safety Programme (SSP) and acceptable level of safety;
- c) Developing suitable programmes for the purpose of establishment, promulgation and amendments of;
  - i. Relevant aspects of State's Civil Aviation legislation such as Acts, Regulations, Orders and other instruments containing mandatory requirements
  - ii. National standards, guidance, processes and procedures for regulating civil aviation activities
  - iii. procedures and programmes for continuing safety oversight and implementation of relevant enforcement actions, where necessary
- d) Review and evaluate state of preparedness of the TCAA in regard to conformity to ICAO USOAP oversight activities, with particular emphasis on conformance to ICAO SARP's;
- e) Conduct audit inspections of service providers in line with regulations and guiding in implementation of audit related action plans;
- f) Assess effectiveness of service providers corrective actions proposed including follow up for resolution of safety concerns;
- g) prioritizing inspections, audits and surveys towards those areas of greater safety concern or need, as identified by the analysis of data on hazards, their consequences in operations, and the assessed safety risks;

## 1.6 Safety Database Officer(s)

The safety data Officer(s) shall be directly involved with the task of maintenance of safety database and particularly responsible for:

- a) **capturing** and **storing** data on hazards and safety risks at both individual and aggregate level;

- b) **extracting** information from the stored data including basic data analysis, safety studies, reviews and surveys for the purpose of assessing safety performance;
- c) Ensuring **data quality and integrity** in order to provide a reliable basis for identifying areas of greater safety concern;
- d) **Protecting** data in order to avoid unauthorized accessibility that may result in loss or alteration;
- e) **Updating** of data and safety information to ensure accurate and timely availability when required;
- f) Ascertaining convenient retrieval of data necessary for assessing current state of civil aviation safety;

### 3.11. Accident and Incident Investigation

The Ministry of Transport has established an independent accident and incident investigation process, the sole objective of which is to support the management of safety in Tanzania and not the apportioning of blame on liability.

- (a) The investigation of accidents and serious incidents is subject to separate regulations which do not form part of the TCARs.
- (b) The Accident Investigation Branch should be independent from the regulator, although the regulator may be asked to provide technical expertise.

### 3.12. Enforcement Policy

The Tanzania Civil Aviation Authority has promulgated an enforcement policy that allows service providers to deal with, and resolve, events involving safety deviations and minor violations internally, within the context of the service provider safety management system (SMS), to the satisfaction of the authority. The enforcement policy includes provisions for the TCAA to deal with events involving gross negligence and wilful deviations through established enforcement procedures.

- (a) The TCARs confers on the DGCA the power of enforcement and this power may be delegated to the TCAA officials, as appropriate. Breach of the TCARs is a criminal offence carrying a penalty which depends on the nature and circumstances of the breach.
- (b) The revised TCAA enforcement policy allows:
  - i. Operators/service providers to deal with, and resolve, events involving safety deviations and minor violations internally, within the context of the service provider safety management system (SMS), to the satisfaction of the TCAA;
  - ii. The TCAA to deal with events involving gross negligence and wilful deviations through established enforcement.

## CHAPTER 4 STATE'S SAFETY RISK MANAGEMENT

### 4.1. Safety requirements for service providers SMS

The TCAA has established the controls which govern how service providers will identify operational hazards and manage safety risks. This includes the requirements, specific operating regulations and advisory circulars for service providers' SMS. The requirements and specific operating regulations are periodically reviewed to ensure they remain relevant and appropriate to the service providers.

- (a) The *Civil Aviation Regulations on Safety Management Systems* requires that the ATS Service providers, Aerodrome Operators and Aircraft Operating Agencies to have a safety management system in place in their operations as per the requirements specified in ..... The operators and service provider shall also develop the SMS implementation plan considering a phased approach of its implementation and shall be approved by the DGCA.
- (b) The hazard identification process and safety risk management are described in the SSP Manual .
- (c) The TCAA has established following requirements for the operator's/service provider's SMS to achieve by the operators/service providers, an acceptable level of safety in their operations:
  - i. Mandatory occurrence reporting scheme;
  - ii. Voluntary (non-punitive) incident reporting scheme;
  - iii. Service difficulty reporting scheme;
- (d) The following Guidance Materials give detail guidance on those schemes/programmes mentioned in 3.1 (c) above:
  - i. – Mandatory/Voluntary Occurrence Reporting Scheme
  - ii. – Regulatory Requirements on Safety Management Systems
  - iii. – Service Difficulty Reporting Scheme
  - iv. - Risk Management

### 4.2. Approval of service provider's Safety Targets

The TCAA has agreed on, and approved, Safety Targets with individual service providers. These Safety Targets are commensurate to the complexity of individual service provider's specific operational contexts and the availability of individual service provider's resources to address safety risks. agreed Safety Targets are periodically reviewed to ensure they remain relevant and appropriate to the service providers.

### 4.3. TCAA Safety Plan (SP)

The TCAA Safety Plan represents the more operationally focused part of the SSP established to achieve an acceptable level of safety in aviation operations. The TCAA Safety Plan includes the following features:

- (a) Input from (but not limited to):
  - i. the TCAA Safety Risk Register:
    - mandatory occurrence reports,
    - voluntary incident report,
    - service difficulty report,

- wildlife/bird strike report,
  - ii. safety initiatives developed by other National Aviation Authorities and regional organizations,
  - iii. staff of the TCAA.
- (b) Safety Performance Indicators (SPI) - are the measures (or metrics) used to express the safety performance in a system. They should be uncomplicated, easy to measure and enable linkage between the Safety Plan and an operator's/service provider's SMS. They will therefore differ between segments of industry, such as aircraft operators, aerodrome operators or ATS providers.
- (c) Safety Performance Targets (SPT) - (sometimes referred to as goals or objectives) represent the desired level of safety performance. A safety performance target comprises one safety performance indicator together with desired outcome expressed in terms of this indicator. These are necessarily determined by considering what safety performance levels are desirable and realistic for individual service providers/operators. SPT should be measurable and acceptable to the parties involved.

**Note:** This approach enables safety expectations to be expressed in terms that are performance based, for example:

- (d) Safety Requirements – (sometimes refers to as safety initiatives) are the tools or means required to achieve the safety targets. They include the operational procedures, technology, systems and programmes to which measures of reliability, availability, performance and/or accuracy can be specified. Examples of safety requirements are:
- i. TCAA accident prevention programme,
  - ii. a wildlife/bird strike hazard reduction programme,
  - iii. the deployment of radar systems in the States three busiest airports within the next 12 months etc.

#### **4.4. Acceptable Level of Safety**

- 4.4.1. The concept of acceptable level of safety responds to the need to complement the prevailing approach to the management of safety based upon regulatory compliance, with a performance-based approach.
- 4.4.2. When establishing ALoS, consideration must be given to
- (a) the level of safety risk that applies
  - (b) the safety risk tolerance
  - (c) the cost/benefits of improvements to the aviation system
  - (d) the public expectations in civil aviation system
- 4.4.3. Acceptable level of safety expresses the safety goals (or expectations) of the TCAA.
- 4.4.4. The acceptable level of safety is expressed by two measures/metrics (safety performance indicators and safety performance targets) and implemented through various safety requirements.



- 4.4.5. The TCAA is responsible for the establishment of the acceptable level of safety in aviation operations.
- 4.4.6. At the beginning TCAA will establish initial ALoS on selected high level high consequence (safety measurement) outcomes.
- 4.4.7. As the SSP achieves maturity TCAA will establish ALoS on low level low consequence (safety performance measurements) outcomes too.
- 4.4.8. The TCAA has established the following initial acceptable levels of safety to be achieved by the establishment of this safety programme:
- (a) ??? fatal accident per ??? aircraft movements within Dar es salaam FIR (*safety indicator*) with a ??? per cent reduction in five years (*safety target*);
  - (b) ??? serious incidents per ???? movements (*safety indicator*) with a ??? per cent reduction in three years (*safety target*);
  - (c) ??? ATC incidents per ???? movements (*safety indicator*) with a ???? per cent reduction in three years (*safety target*);
  - (d) No more than ???? runway incursion per ???? aircraft movements (*safety indicator*) with a ??? per cent reduction in a 12-month period (*safety target*); and
  - (e) ??? ATC airspace incidents per ????? movements (*safety indicator*) with a ???? per cent reduction over the five-year moving average (*safety target*);

## CHAPTER 5 STATE SAFETY ASSURANCE

### 5.1. Safety Oversight

The TCAA has established mechanisms to ensure that the identification of operational hazards and the management of safety risks by service providers follow established regulatory controls (requirements, specific operating regulations and guidance materials). These mechanisms include inspections, audits and surveys to ensure that regulatory safety risk controls are appropriately integrated into the service providers' SMS, that they are being practiced as designed, and that the regulatory controls have the intended effect on safety risks.

### 5.2. Safety Oversight of Operators and Service Providers

- 5.2.1. The responsibility for regulatory oversight of the operators and service providers rests with the TCAA.
- 5.2.2. Oversight is conducted through a mixture of what ICAO terms the 'traditional perspective' and the 'SMS environment perspective' – the TCAA is moving towards the modern perspective.
- 5.2.3. Designations in all functional areas of TCAA are under review through the Assessment process.
- 5.2.4. TCAA regulatory staff is specialists in the functional areas which they regulate.
- 5.2.5. Regulatory oversight is conducted through inspections, audits and surveys together with provision of advice and guidance, to ensure that:
  - (a) Operators and service providers meet the national and international standards;
  - (b) the identification of operational hazards and the management of safety risks by service providers follow established regulatory controls (e.g., requirements, specific operating regulations and guidance materials');
  - (c) regulatory safety risk controls are appropriately integrated into the service provider's SMS;
  - (d) regulatory safety risk controls are practiced as designed;
  - (e) regulatory safety risk controls have the intended effect on safety risks.
- 5.2.6. Ramp checks of foreign aircraft are conducted by the designated authority with regulatory responsibility for airworthiness and flight operations (where such specialists are not available). Where there are split designations the authorities involved are required to liaise on the preparation and implementation of the ramp checking programme.
- 5.2.7. For complex general aviation including corporate operations, where an operator uses an operating base in a State other than the State in which the aircraft has been registered, TCARs requires the operator to notify the TCAA of the State in which aircraft has been registered and the State in which the operating base is located. This is to facilitate the coordination of regulatory oversight.

*Note - Aviation safety has traditionally focused on compliance with regulatory requirements and reacted to undesirable events by prescribing measures to prevent recurrence. A different*

*approach is needed to keep safety risks at an acceptable level as the industry continues to develop. The 'modern perspective' includes the use of safety management systems and is designed to complement regulatory compliance by the proactive use of best practices.*

### **5.3. Internal Oversight Audit of TCAA**

5.3.1. The TCAA has fully-functioning requirements, as described in paragraph 2.6 above. Internal quality assurance audits and internal technical audits are carried out regularly by the TCAA Internal Audit and **Quality Assurance** Section to provide assurance on corporate governance to the TCAA management and Board.

5.3.2. The TCAA Internal Audit and Quality Assurance Section is to audit aviation safety regulations of the State with the help of the relevant officers in subject areas and to advise the DGCA and those responsible for aviation safety regulation on:

- (a) whether the TCAA is complying with the State's obligations under the Chicago Convention;
- (b) the standard of State's aviation safety regulation;
- (c) the adequacy of the resources employed on safety regulation in the TCAA and any remedial measures that may be necessary.

5.3.3. Assessments are currently made in relation to the ICAO 8 Critical Elements of a safety oversight system (see **Appendix – E**) to ensure that the TCAA is “**fit for purpose**” regulator, and having particular regard to sustainability.

5.3.4. It is envisaged that adoption of the Safety Programme system will, in time, permit the TCAA to self assess by reviewing its safety risk register, safety performance targets and outputs to ensure:

- (a) the effectiveness of the SSP;
- (b) timely update and improvement of the SSP and sharing of best practices across the TCAA.

### **5.4. ICAO Safety Oversight Audit on State's Safety Oversight System**

5.4.1. In consideration of the critical need for increased attention to global aviation safety, ICAO carries out audits of the TCAA as part of its Universal Safety Oversight Audit Programme.

5.4.2. The ICAO audits assess both the State's regulatory system against the ICAO 8 Critical Elements of a safety oversight system and the degree to which SARPs have been implemented within the State concern.

### **5.5. Safety data collection, analysis and exchange**

The TCAA has established mechanisms to ensure the capture and storage of data on operational hazards and safety risks at an aggregate State's level. The TCAA has also established mechanisms to develop information from the stored data, and to actively exchange safety information with service providers and/or other States as appropriate.

### **5.6. Occurrence Reporting and Analysis**

- 5.6.1. The TCARs require operators and service providers to report occurrences to the TCAA and Voluntary/Mandatory Reporting Scheme contains procedures for handling such reports.
- 5.6.2. The TCAA currently uses the European Co-ordination Centre for Aviation Incident Reporting Systems (ECCAIRS) safety database which includes capabilities for analyzing and presenting the information in a variety of formats. ECCAIRS safety database is compatible with ICAO Accident/Incident Data Reporting (ADREP) System.

**5.7. Safety data driven targeting of oversight on areas of greater concern or need**

The TCAA has established procedures to prioritize inspections, audits and surveys towards those areas of greater safety concern or need, as identified by the analysis of data on operational hazards and safety risks areas.

- (a) The TCAA has established procedures to prioritize inspections, audits and surveys towards those areas of greater safety concern or need, as identified by the analysis of data on operational hazards and safety risks areas.
- (b) The TCAA has adopted risk-based resource allocations system for all regulatory functions (proactively targeting regulatory attention on known areas of high risk).

## CHAPTER 6 STATE SAFETY PROMOTION

### 6.1. Internal training, communication and dissemination of safety information

The TCAA provides training, awareness, and two-way communication of safety relevant information to support, within the TCAA, the development of a positive organizational culture that fosters the development of an effective and efficient State's safety programme.

- (a) TCAA's remit, and budget, includes the provision of assistance, training and advice to those responsible for aviation safety regulation within the TCAA. Individual and group training, for both initial and recurrent training, is provided under this heading.

The training/seminar/workshop is focused to promote:

- i. the development of a positive organizational culture that fosters the development of an effective and efficient State's safety programme;
  - ii. the confidence among regulatory staff in assessing operator's/service provider's SMS and its performance. (refer to Step 2 of SSP Implementation Plan provided in **Appendix – B.**)
- (b) The TCAA holds an executive work shop once a year to make the TCAA's staff knowledgeable on key regulatory/safety topics.
  - (c) The TCAA has established the following methods of communication and dissemination of safety-relevant information within the TCAA:

For critical safety-relevant information:

- i. Confidential Letters;
- ii. Email system.

For non-critical safety-relevant information:

- i. TCAA Website;
- ii. TCAA Intranet;
- iii. Safety Notice Boards;
- iv. Safety Alerts;
- v. Safety Newsletters (quarterly);
- vi. Safety Journal (annual).

### 6.2. External training, communication and dissemination of safety information

The TCAA provides education, awareness of safety risks and two-way communication of safety relevant information to support among services providers the development of a positive organizational culture that fosters safe the same attention to results as financial management.

- (a) The TCAA supports the implementation of SMS by running seminars/workshops for the industry to promote confidence among operational staff in encouraging and assessing SMS development and performance. The cultivation of an active safety culture at all levels and in all functional areas in the aviation industry is seen as a key area of development.

- (b) The TCAA holds regular meetings with operators and service providers, in order to keep them advised of likely regulatory developments, and develop the required safety culture.
- (c) The TCAA runs a 'Safety Road Show' every two years, where seminars are provided on key regulatory topics, at one location within Tanzania.
- (d) The TCAA has established the following methods of communication and dissemination of safety-relevant information nationally and internationally:

For critical safety-relevant information:

- Confidential Letters;
- Email system.

For non-critical safety-relevant information:

- TCAA Website;
- Safety Alerts;
- Safety Newsletters (quarterly);
- Safety Journal (annual)

## References

1. 1 ICAO State Letter Ref. AN 12/51-07/74 dated 7 December 2007, Subject: Proposal for the amendment of Annex 1, Annex 6, Parts I and III, Annex 8, Annex 11, Annex 13 and Annex 14, Volume I, to harmonize and extend provisions relating to safety management.
2. ICAO Safety Management Systems Course.
3. ICAO Doc. 9859, AN/460 Safety Management Manual, Second Edition 2009.
4. ICAO Guidance on the Development of a State's Safety Programme Gap Analysis.
5. ICAO Doc 9734, AN/959 Safety Oversight Manual, Part A – The Establishment and Management of a State's Safety Oversight System, Second Edition – 2006.
6. Safety Management Systems, Implementation Procedures Guide for Air Operators and Approved Maintenance Organizations, Transport Canada, TP 14343E, June 2005.

**APPENDICES**

**Appendix A – Gap Analysis**



## Appendix B – State’s Safety Programme Implementation Plan

*Note - The implementation of the State’s Safety Programme are based on following 5 steps and the detailed activities are illustrated in the plan prepared in Microsoft Project 2003 which is provided separately.*

**STEP 1: State’s safety programme gap analysis:** Conduct a gap analysis vis-à-vis the current status in the State of the following:

### 1. State’s safety policy and objectives

- 1.1. TCAA safety standards
- 1.2. TCAA safety responsibilities and accountabilities
- 1.3. Accident and incident investigation
- 1.4. Enforcement policy

### 2. State’s safety risk management

- 2.1. Safety requirements for service providers SMS – Completed
- 2.2. Approval of service providers acceptable levels of safety

### 3. State’s safety assurance

- 3.1. Safety oversight (Inspections, audits and surveys) – Completed
- 3.2. Safety data collection, analysis and exchange – Process implemented
- 3.3. Safety data driven targeting of oversight on areas of greater concern or need

### 4. State’s safety promotion

- 4.1. Internal training, communication and dissemination of safety information
- 4.2. External training, communication and dissemination of safety information

## STEP 2: TCAA training programme:

Develop a training programme for TCAA officers to:

1. provide knowledge of **safety management concepts and ICAO SARPs** on safety management in Annexes 1, 6, 8, 11, 13 and 14, and related guidance material; and
2. develop knowledge to **certify and oversee** the implementation of key components of an SMS, in compliance with the national regulations and relevant ICAO SARPs.

## STEP 3: Implementation of SMS SARPs:

Develop SMS regulations for operators/service providers.

1. Refer to the SMS components and elements as per the ICAO SMS training course;
2. Prepare guidance material for the implementation of SMS.

Refer to ICAO Doc 9859 and the ICAO SMS training course.

#### **STEP 4: TCAA enforcement policy:**

Revise the TCAA's enforcement policy.

1. Operators/service providers allowed to deal with deviations/minor violations internally, within the context of the SMS, to the satisfaction of the authority;
2. Gross negligence, wilful deviation and so forth to be dealt through established enforcement procedures.

#### **STEP 5: Development of State's safety programme:**

Develop the State's safety programme (*an integrated set of regulations and activities aimed at improving safety*) around the 4 components and 11 elements of the ICAO SSP framework.

#### **State's safety programme components and elements:**

##### **1. State's safety policy and objectives**

- 1.1. TCAA safety standards
- 1.2. TCAA safety responsibilities and accountabilities
- 1.3. Accident and incident investigation
- 1.4. Enforcement policy

##### **2. State's safety risk management**

- 2.1. Safety requirements for service providers SMS
- 2.2. Approval of service providers acceptable levels of safety

##### **3. State's safety assurance**

- 3.1. Safety oversight (Inspections, audits and surveys)
- 3.2. Safety data collection, analysis and exchange
- 3.3. Safety data driven targeting of oversight on areas of greater concern or need

##### **4. State's safety promotion**

- 4.1. Internal training, communication and dissemination of safety information
- 4.2. External training, communication and dissemination of safety information

## **Appendix C – State Safety Programme Structure**

## Appendix D – Regulatory Framework

**Appendix E – Critical Elements of a Safety Oversight System**

## **Appendix F – TCAA’s Organizational Structure**

## **Appendix G – Safety Performance Targets approved by the TCAA**

**Aerodrome Operator**



**Air Operators**

**ATS Service provider**

## **Aircraft Maintenance Organization**