UGANDA CIVIL AVIATION AUTHORITY

SAFETY MANAGEMENT SYSTEMS MANUAL

FOR AIR NAVIGATION SERVICES

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REVISION:05 August, 2023

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Record of Amendment

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Section	Page No.		
30/10/20	4	2.1	4	Replaced the safety policy with the current one signed 11th February 2020	Madina Ndagire
30/10/20	4	2.4.2, 2.4.3, 2.4.4, 2.4.5, 2.4.6, 2.4.7, 2.4.10	7	Replace Appendix I with appendix J. Inserted text on the safety responsibilities of line managers	Madina Ndagire
30/10/20	4	2.4.8	9	Par 1 - Re-phrased to mention Director ANS as chair to DSRC.	Madina Ndagire
30/10/20	4	3.2	13	Added text on hazard identification to include prioritisation of hazards.	Madina Ndagire
30/10/20	4	4.2.2	23	Replaced description of safety reviews following the guidance in ICAO DOC 4444.	Madina Ndagire
30/10/20	4	4.6	26	Introduced new SMS Form 115(b) on the management of change.	Madina Ndagire
30/10/20	4	4.6 (iv)	27	Inserted text about monitoring implementation of mitigations addressing hazards introduced by the proposed change.	Madina Ndagire
30/10/20	4	4.8.1.1	27	Added text on the criteria for selection of internal auditors and lead auditors.	Madina Ndagire
30/10/20	4	4.8.6	30	Changed text under management review to include role of SRC.	Madina Ndagire
30/10/20	4	5.2	32	Added text on training to include refresher training for personnel involved in SMSM implementation.	Madina Ndagire
30/10/20	4	Appendix A	A - 6	Renamed SMS form 115 (a) and replaced approval with acceptance	Madina Ndagire
30/10/20	4	Appendix A	A - 7	Inserted SMS form 115 (b) change implementation schedule. Replace Further administrative /technical defences with Risk mitigations/ Hazard Controls	Madina Ndagire
30/10/20	4	Appendix A	A-11	Inserted additional text on SMS form 122 i.e. • Explanations about the next evaluation date and next review date. • Replaced "technical and administrative defences" with "Risk	Madina Ndagire

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Section	Page No.		
				mitigations/hazard controls"	
30/10/20	4	Appendix A	A-10	Added text on column heading "hazard control" to become "Risk mitigations/hazard controls"	Madina Ndagire
30/10/20	4	Appendix C	C-3	Revised Quartile ranges for the safety Culture survey scores representing Poor safety culture, Bureaucratic safety culture, and Positive safety culture	Madina Ndagire
30/10/20	4	Appendix g	G1	Removed management review of the SMS from SMS Calendar of Regular Scheduled Events	Madina Ndagire
30/10/20	4	Appendix I. Procedure No. 1	I-1 & I - 2	Replaced with reviewed incident investigation procedure.	Madina Ndagire
30/10/20	4	Appendix I section 11	I-8	Added text in Mechanism for implementation and validation of effectiveness of safety risk controls	Madina Ndagire
30/10/20	4	Appendix I	I - 16	Inserted additional xi, xii and xiii in the management of change procedure regarding implementation of proposed hazard mitigation controls.	Madina Ndagire
30/10/20	4	Appendix J	J-1	Inserted reviewed safety responsibilities	Madina Ndagire
30/10/20	4	Appendix K	K- 1	Inserted Appendix K, safety review checklist	Madina Ndagire
21/12/21	4	1.7	3	Review cycle	Acipa Annabel
21/12/21	4	2.1.1; 2.1.2; 2.1.3	4	Write up on safety policy	Acipa Annabel
21/12/21	4	2.2.1; 2.2.2	6	Provisions on safety objectives	Acipa Annabel
21/12/21	4	2.4.1	8	General Provisions on safety accountabilities, responsibilities and authorities	Acipa Annabel
21/12/21	4	2.4.5.2	11	Competencies of a safety manager	Wanzunula Rogers
21/12/21	4	2.5.1	14	General Provisions on emergency response planning	Acipa Annabel
22/12/21	4	4.4.1; 4.4.2;	25-26	General provisions, requirements and process of SPIs	Acipa Annabel

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Section	Page No.		
		4.4.3.			
22/12/21	4	5.3.1; 5.3.2; 5.3.3	34-35	Overview, requirements and process of safety communications	Acipa Annabel
20/04/22	4	Appendix L		Include appendix L on job descriptions	Michael Kasirye
17/08/23	5	Appendix I -13		Reviewed change management procedure	Acipa Annabel
17/08/23	5		A6	Inserted UCAA/DANS/SMS/FORM 115	Madina Ndagire
17/08/23	5	Appendix H		Reviewed the training programme	Kasirye Michael
17/08/23	5	Appendix G		Reviewed SMS Calendar of regular activities	Wanzunula Rogers
17/08/23	5	Appendix K		Reviewed safety review checklist	Madina Ndagire

Distribution List

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Preface

This manual provides guidance and procedures for managing the Safety Management System (SMS) in Air Navigation Services. SMS comprises of four components namely Safety Policy and Objectives, Safety Risk Management, Safety Assurance and Safety Promotion. The Safety Policy and Objectives has a critical element of top management commitment. The manual emphasizes this critical element for realisation of SMS. The implementation of SMS in ANS is in accordance with the ICAO recommended four phase approach.

The traditional methods of managing safety focused on outcomes of accidents, assigning blame and only investigating technical errors. With global aviation activity forecast to grow, there was concern that traditional methods of reducing accidents and safety risks to an acceptable level were insufficient. New methods of understanding and managing safety are therefore evolving. SMS is a result of the improvement in technology, human and organizational factors in the aviation industry. It applies business management practices to aviation safety, with its underlying routine collection and analysis of operational data, to strike a balance between protection and production.

The SMS addresses the need for the continued collection and analysis of safety data to identify trends regarding ATC and navigation services. The manual provides tools, procedures, and processes for identifying, analysing, mitigating, and tracking safety hazards – leading to safer Air Navigation Services in Entebbe FIR. This safety information is critical for Top management to enable right decision making as explained by 'the iceberg theory of ignorance'.

Much as this SMS manual applies to all staff in ANS, it recognizes the vital role of other directorates such as Corporate, Finance, Human Resource and Administration, Airports and Aviation Security and Regulation Oversight and other stakeholders in promoting safety.
It embraces other programs in the Organization such as Airport SMS, QMS and Corporate Audit and Risk Management

This manual emphasises a safety culture as an integral aspect to Safety Management System. Safety culture provides the tone for SMS and its atmosphere is created by Management that shapes staff attitudes towards safety normally phrased as "*This is how we do things here"*

This manual covers the required aspects of planning, implementation, operation and continuous improvement of SMS in Air Navigation Services.

Acknowledgement

In implementation of SMS in Uganda CAA, and in particular, Air Navigation Services, the SMS manual is one of the key tools for communicating DANS' approach to safety to the whole organization. Top Management would like to recognize the participation of Madina Ndagire, Kasirye Michael, Rogers Wanzunula, Acipa Annabel, Gertrude Sanyu and David Matovu, that tirelessly worked to review and update this edition.

And all staff who directly or indirectly contributed to the development of this manual.

Acronyms and Abbreviations

AIM	Aeronautical Information Management
ANS	Air Navigation Services
ASAP	Aviation Safety Action Programs
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Service(s)
CAA	Civil Aviation Authority
CASS	Continuing Analysis and Surveillance System
CEO	Chief Executive Officer
CMC	Crisis Management Centre
CNS	Communication, Navigation and Surveillance
DANS	Directorate of Air Navigation Services
DSSER	Directorate of Safety, Security and Economic Regulation
GA	General Aviation
ICAO	International Civil Aviation Organization
IEP	Internal Evaluation Program
ISO	International Organization for Standardization
LICC	Local Incident Control Centre
LOSA	Line Operations Safety Audit
MSMS/QA	Manager Safety Management System and Quality Assurance
OJT	On-the-job Training
PAIMO	Principal Aeronautical Information Management Officer
PANS-ATM	Procedures for Air Navigation Services — Air Traffic Management
PATMO	Principal Air Traffic Management Officer
PTO	Principal Technical Officer
QA	Quality Assurance
SAG	Safety Action Group
SM	Safety Manager
SMM	Safety Management Manual
SMS	Safety Management Systems
SOPs	Standard Operating Procedures
SRC	Safety Review Committee
SRM	Safety Risk Management

Definitions

Aeroplane - a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

Acceptable Level of Safety Performance (ALoSP) - the minimum level of safety performance of civil aviation in Uganda, as defined in its State Safety Programme, or of a service provider, as defined in its safety management system, expressed in terms of safety performance targets and safety performance indicators.

Accountable Manager – Director Air Navigation Services.

Accountable Executive – The Director general Uganda Civil Aviation Authority.

Accident – an occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is
shutdown, in which—

a) a person is fatally or seriously injured as a result of—
   i) being in the aircraft; or
   ii) direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or
   iii) direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or
   iv) 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—
   i) adversely affects the structural strength, performance or flight characteristics of the aircraft; and
   ii) would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, including its cowlings or accessories, to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin such as small dents or puncture holes, or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike including holes in the radome; or
c) The aircraft is missing or is completely inaccessible.

Aircraft - any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

All Staff – Uganda CAA employees in DANS.

Analysis – A process of identifying a question or an issue to be addressed; modelling the issue, investigating model results, interpreting the results and possibly making a recommendation Analysis typically involves using scientific or mathematical methods for evaluation.

Assessment – Process of measuring or judging the value or level of something.

Audit – Scheduled, formal reviews and verifications to evaluate compliance with policy, standards, and/or contractual requirements. The starting point for an audit is the management and operations of DANS, and it moves outward to DANS's activities and products/services.

Authority - the Uganda Civil Aviation Authority established by section 3 of the Civil Aviation Authority Act, CAP 354;

Internal audit – an audit conducted by, or on behalf of, DANS being audited.

External audit – an audit conducted by an entity outside of DANS being audited.

Aviation hazard- Any hazard/issues that can have an impact (whether directly or indirectly) on the operational safety of aircraft or aviation safety-related equipment, products and services should be deemed pertinent to an aviation.

Corrective action – Action to eliminate or mitigate the cause or reduce the effects of a detected nonconformity or other undesirable situation

Evaluation – A functionally independent review of Organization policies, procedures, and systems. The evaluation process builds on the concepts of auditing and inspection. An evaluation is an anticipatory process, and is designed to identify and correct potential findings before they occur.

Hazard - a condition or an object with the potential to cause or contribute to an aircraft accident or incident.

Helicopter - a heavier than-air aircraft supported in flight chiefly by the reactions of the air on one or more power- driven rotors on substantially vertical axes.

Incident - an occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Just Culture – An important aspect of a positive safety culture that ensures that while staff will be held accountable for their actions, they will at all times be treated fairly and with respect.

Large Aeroplane - an aeroplane with a maximum take-off weight of more than 5 700 kg;

Learning Culture – An important aspect of a positive safety culture that ensures that the information contained in reports, audits, investigation, and other data sources is analyzed to generate safety recommendations which are then implemented in DANS.

Likelihood – The estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard. Same as probability.

Mitigation - measures to address the potential hazard or to reduce the risk probability or severity.

Occupational Safety Health and Environment (OSHE) Hazard- Hazards related to the safety, health and welfare of people engaged in work or employment.

Organization – Uganda Civil Aviation Authority.

Oversight – A function that ensures the effective promulgation and implementation of the safety-related standards, requirements, regulations, and associated procedures. Safety oversight also ensures that the acceptable level of safety risk is not exceeded in the air transportation system.

Operational Personnel - personnel such as flight crews; air traffic controllers; aeronautical station
operators; maintenance technicians; personnel of aircraft design and manufacturing organizations;
cabin crews; flight dispatchers, apron personnel and ground handling personnel, involved in aviation activities who are in a position to report safety information.

Predictive - capturing the system performance as it happens in real time normal operations so as to identify potential future problems

Preventive action – Action to eliminate or mitigate the cause or reduce the effects of a potential nonconformity or other undesirable situation.

Proactive – actively identifying safety risks through the analysis of the organization's activities.

Probability – The estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard. Same as likelihood.

Procedure – Specified way to carry out an activity or a process.

Process – Set of interrelated or interacting activities which transform inputs into outputs.

Reactive - responding to events that have already happened such as incidents and accidents

Records – Evidence of results achieved or activities performed. In this context it is distinct from documentation because records are the documentation of SMS outputs.

Reporting Culture – An important aspect of a positive safety culture that cultivates the willingness of every member to contribute to DANS's knowledge base.

Residual safety risk – The remaining safety risk that exists after all control techniques have been implemented or exhausted and all controls have been verified. Only verified controls can be used for the assessment of residual safety risk.

Enterprise Risk - Effect of uncertainty on objectives

Risk Control – Refers to steps taken to eliminate hazards of to mitigate their effects by reducing severity and/or probability of risk associated with those hazards.

Risk Owner – A person or entity that has been given the authority to manage a particular risk and is accountable for doing so.

Safety assurance – SMS process management functions that systematically provide confidence that organizational products/services meet or exceed safety requirements.

Safety - a state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety culture – The product of individual and group values, attitudes, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, DANS's management of safety.

Safety Data - defined set of facts or set of safety values collected from various aviation-related sources, which is used to maintain or improve safety.

Safety Information - safety data processed, organized or analysed in a given context so as to make it useful for safety management purposes.

Safety Management System (SMS) - A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety Risk - the predicted probability and severity of the consequences or outcomes of a hazard.

Safety risk control – Anything that reduces or mitigates the safety risk of a hazard. Safety risk controls shall be written in requirements language, measurable, and monitored to ensure effectiveness.

Safety risk management (SRM) – A formal process within the SMS composed of describing the system, identifying the hazards, assessing the risk, analysing the risk, and controlling the risk.

Safety Performance - a State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety Performance Indicator - a databased parameter used for monitoring and assessing safety performance

Safety Performance Target - the State or service provider's planned or intended target for a safety performance indicator over a given period that aligns with the safety objectives.

Safety promotion – a combination of safety culture, training, and data sharing activities that support the implementation and operation of an SMS in an organization.

Severity – The consequence or impact of a hazard in terms of degree of loss or harm.

Substitute risk – Risk unintentionally created as a consequence of safety risk control(s).

Top Management – Director General, Deputy Director General, Corporation Secretary, Departmental Directors and General Manager EIA.

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CHAPTER 1: INTRODUCTION

1.1 Applicability

1.1.1 All DANS' staff contribute to the safety of everyday ANS operations. This manual is intended for use by all staff. The Safety Manager, and safety personnel have SMS duties to ensure planning, implementation and operation of SMS within DANS but the full realisation of SMS is a responsibility of everyone. It is therefore important for each employee to have strong consideration to safety in all their actions and promote a safety culture of reporting potential hazards to the Safety Office for detailed analysis and correction.

1.1.2 This SMS applies to all DANS' staff, Managers, Contractors and related service providers who are either directly or indirectly involved in providing ATC or navigation services. This includes but is not limited to; Area/Airways Controllers, Approach Controllers, Radar Controllers, Aerodrome Controllers, CNS Technical Officers, Aeronautical Information Management Officers and support staff.

1.2 Scope and integration of the safety management system

1.2.1 DANS is responsible for providing safe and efficient air navigation services within the Entebbe FIR. The scope of SMS covers three functional areas i.e., Air Traffic Management (ATM), Aeronautical Information Management (AIM) and Communication, Navigation and Surveillance (CNS).

1.2.2 SMS interfaces with external directorates/organizations is detailed in the SMS implementation plan, Appendix 3 to the SMS implementation plan: SMS interfaces. The Hazard Identification and Risk Management (HIRM) program applies to processes, operations and equipment detailed in the SMS implementation plan, Appendix 1 to the SMS implementation plan: ANS System description.

1.2.3 These external SMS interfaces should share Information regarding their operations or activities that impact on safe operations of ANS. ANS should do likewise with all external SMS interfaces.

1.2.4 The SMS uses QMS processes such as auditing, inspection, investigation, root cause analysis and document control under safety policy and objectives in the safety assurance process. Reports from these processes provide a source of information to the safety risk management process. The Quality Management System (QMS) complements DANS' Safety Management System (SMS).

1.3 Quality Policy

1.3.1 In the planning, implementation and operation of the SMS, the organisation shall observe the applicable CAA quality policy detailed in the CAA quality manual.

1.4 SMS regulatory requirements

1.4.1 This manual provides guidance in the development, implementation, operation and maintenance of a safety management system for ANS that meets the requirements of the applicable Civil Aviation (Safety Management) Regulations, and all national safety regulatory requirements, and is in compliance with the applicable ICAO SARPS.

1.4.2 Development of this SMS manual is as per requirements and in line with guidance in the following regulations, SARPs and documents;

a. Applicable Safety Management Systems Advisory circulars.

b. Annex 19 (Applicable edition), Safety Management.

c. Doc 9859 (Applicable edition), Safety Management Manual.

1.4.3 Additional systems to ensure regulatory compliance have been incorporated into the operational procedures utilized by DANS and found in the various departmental manuals.

1.5 Manual Organization

1.5.1 This manual is organized around the four components of safety management systems:

- Safety Policy and Objectives (Chapters 2)
- Safety Risk Management (Chapter 3)
- Safety Assurance (Chapter 4)
- Safety Promotion (Chapters 5)

1.5.2 The forms used in SMS are contained in Appendix A. Other appendices contain reference materials, procedures and checklists.

1.6 References

1.6.1 Internal Organization Documents

- Manual of Air Navigation Services Operations (MANSOPS)
- CAA Quality Manual
- Enterprise Risk Management Manual
- SMS Implementation Plan
- ATS Contingency Plan
- Aeronautical Information Publication (AIP)
- Approved Training Plan.
- Applicable Civil Aviation (Safety Management) regulations
- Applicable Civil Aviation (Air Navigation Service) regulations
- Applicable Civil Aviation (Personnel Licensing) regulations
- Advisory Circulars
- Manual of Air Navigation Services Standards
- Airport SMS Manual
- Airport Emergency Plan
- Applicable CAA Business Plan
- Applicable CAA Budget

1.6.2 External supporting Documents

- ICAO Document 9859, (Applicable Edition). *Safety Management Manual (SMM)*
- ICAO Annex 19 – Safety Management (Applicable Edition)
- ICAO Annex 11 – Air Traffic Services, (Applicable Edition)
- ICAO Annex 13 Accident/Incident Investigation, (Applicable Edition)
- ICAO Procedures for Air Navigation Services – Air Traffic Management, Doc. 4444, (Applicable Edition)

1.7 Review Cycle

1.7.1 This manual shall be reviewed after every two years from the approval date as per Quality Assurance procedure CAA/CORP/OP/01- Control of Documents and Records or whenever necessary.

CHAPTER 2: SAFETY POLICY AND OBJECTIVES

2.1. Safety Policy

1.1.1 Safety is one of our core business functions. We are committed to developing, implementing, maintaining, and constantly improving strategies and processes to ensure that all our aviation activities have appropriate allocation of organisational resources, aimed at achieving the highest level of safety performance and meeting regulatory requirements. All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the Director General (DG).

1.1.2 This ANS Safety Policy shall be displayed in a prominent area within all the ANS departments. SMS department shall develop the means to disseminate safety information to all staff to ensure that safety in day-to-day activities is given its due respect. There should never be any complacency about safety at any level in the directorate.

1.1.3 The ANS safety policy below shall be reviewed every two years or whenever necessary as per the SMS manual review cycle.

Safety Policy of Air Navigation Services

In the provision of Air Navigation Services, Uganda Civil Aviation Authority management commits to;

i. Take safety as their primary responsibility and is fully committed to all issues regarding safety.

ii. Provide all necessary resources to enable the implementation of this safety policy and safety objectives.

iii. The full implementation of all applicable, Civil Aviation Regulations, best practices and programs aimed at continually improving the SMS so as to achieve the highest standards of safety.

iv. Promote mandatory, voluntary and confidential reporting to facilitate effective management of safety risks.

v. Ensure that this safety policy is communicated, implemented and maintained at all levels within the directorate of ANS

vi. Ensure that in the promotion of safety, disciplinary action shall not apply to outcomes of safety investigations resulting from human error unless such findings indicate beyond reasonable doubt, gross negligence or a deliberate or wilful disregard of the regulations or procedures.

vii. To consider other UCAA policies in the implementation of this policy in order to enhance Safety performance.

viii. Ensure that all staff at their respective levels participate in SMS activities in order to realise the intent of this policy.

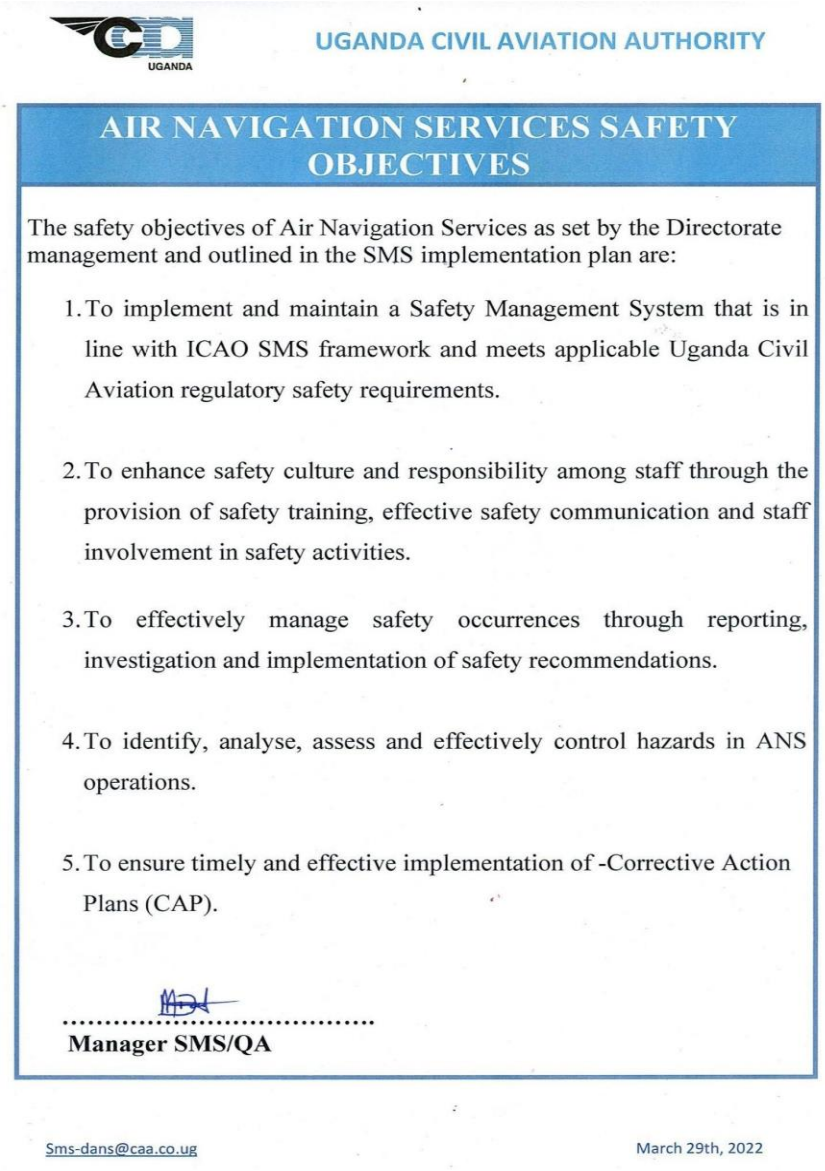
Signed by: ..... Date: 14/02/2022
Director Air Navigation Services

Endorsed by: ..... Date: 14/02/2022
Director General

2.2. Safety Objectives

2.2.1. Safety objectives are brief, high-level statements of safety achievements or desired outcomes to be accomplished. Safety objectives provide direction to the organization's activities and should therefore be consistent with the safety policy that sets out the organization's high-level safety commitment.

2.2.2. The ANS safety objectives shall be regularly reviewed as and when the manual is reviewed basing on results of safety assessments SRM process, incident investigations and audits. The purpose of the review is to focus attention on areas that require more effort for improvement purposes.



UGANDA CIVIL AVIATION AUTHORITY

AIR NAVIGATION SERVICES SAFETY OBJECTIVES

The safety objectives of Air Navigation Services as set by the Directorate management and outlined in the SMS implementation plan are:

1. To implement and maintain a Safety Management System that is in line with ICAO SMS framework and meets applicable Uganda Civil Aviation regulatory safety requirements.

2. To enhance safety culture and responsibility among staff through the provision of safety training, effective safety communication and staff involvement in safety activities.

3. To effectively manage safety occurrences through reporting, investigation and implementation of safety recommendations.

4. To identify, analyse, assess and effectively control hazards in ANS operations.

5. To ensure timely and effective implementation of -Corrective Action Plans (CAP).

.....
Manager SMS/QA

Sms-dans@caa.co.ug March 29th, 2022

2.3. Safety Planning

2.3.1 The Accountable Executive (AE) is responsible for planning, organizing, directing and controlling the safety management system in DANS. This manual and SMS implementation plan constitute the formal safety management plan of this organization and will be updated as stipulated in section 2.6. They will be used in the implementation and continued operation of the SMS.

2.3.2 To guide the systematic implementation of the SMS in DANS, a standalone SMS Implementation Plan (CAA/DANS/SMS/02) was developed following the ICAO four phase implementation approach.

2.4. Safety accountabilities, responsibilities, and authorities

2.4.1. General Provisions

2.4.1.1 Within the SMS framework, it is essential that all individuals who have a safety function whether management or operators are fully aware of their safety accountabilities and responsibilities. Furthermore, these safety accountabilities and responsibilities should be clearly defined, communicated and followed up by all disciplines within the DANS operational activities if they are to be carried out as intended

2.4.1.2 Safety accountability is the obligation to demonstrate task achievement and take responsibility for safety performance in accordance with agreed expectations and to answer for an action. Safety accountability cannot be delegated.

2.4.1.3 Safety responsibility is the obligation to carry out a safety related task to its successful conclusion. Safety responsibility can be delegated or cascaded down within the scope of job responsibilities provided such delegation is documented.

2.4.1.4 Safety authorities refers to powers to give orders, make decisions enforce compliance on safety related issues. They are exercised alongside responsibilities and accountabilities. For example, in ensuring that the SMS is properly implemented and maintained, the DG has powers to sanction resources to implement SMS.

2.4.1.5 To ensure the needed safety awareness and commitment of all personnel involved in safety related tasks, the safety accountabilities and responsibilities shall be clearly and comprehensively defined, documented and communicated throughout the organisation.

2.4.1.6 These responsibilities, accountabilities and authorities are shared among all staff at individual and team level and other safety stakeholders in accordance with the involvements in SMS. Detailed responsibilities of individual positions for the continued operation of the SMS are addressed in Section 2.4.1

2.4.2. SMS Functional Organization Chart

2.4.2.1 DANS is composed of various categories of staff who all contribute to its success. Each staff interacts with safety in some way, but the degree of SMS involvement varies for each position. Those staff who have more direct contact with safety management have greater responsibilities with the SMS while staff who are involved in areas that are more technical will have fewer responsibilities in the SMS. In order to specify the SMS responsibilities for each staff, the following functional categories have been established as listed below.

- Accountable Executive
- Accountable Manager
- Safety Manager
- Line Manager
- Safety Personnel
- Safety Action Group
- Safety Review Committee

2.4.2.2 DANS' staff job descriptions include SMS functional / responsibilities. Staff from other directorates attached to DANS shall be oriented in their safety responsibilities by the safety office.
Fig 1 below is a functional chart showing the interfaces and interrelationships in terms of the management of safety among the various departments in DANS. It depicts functions rather than organization. It is not intended to depict the organization of the management of safety in terms of departments and functional units and their relative hierarchical positions within the directorate, but rather the functions of each department and/or functional unit in terms of the delivery of safety as a core business process

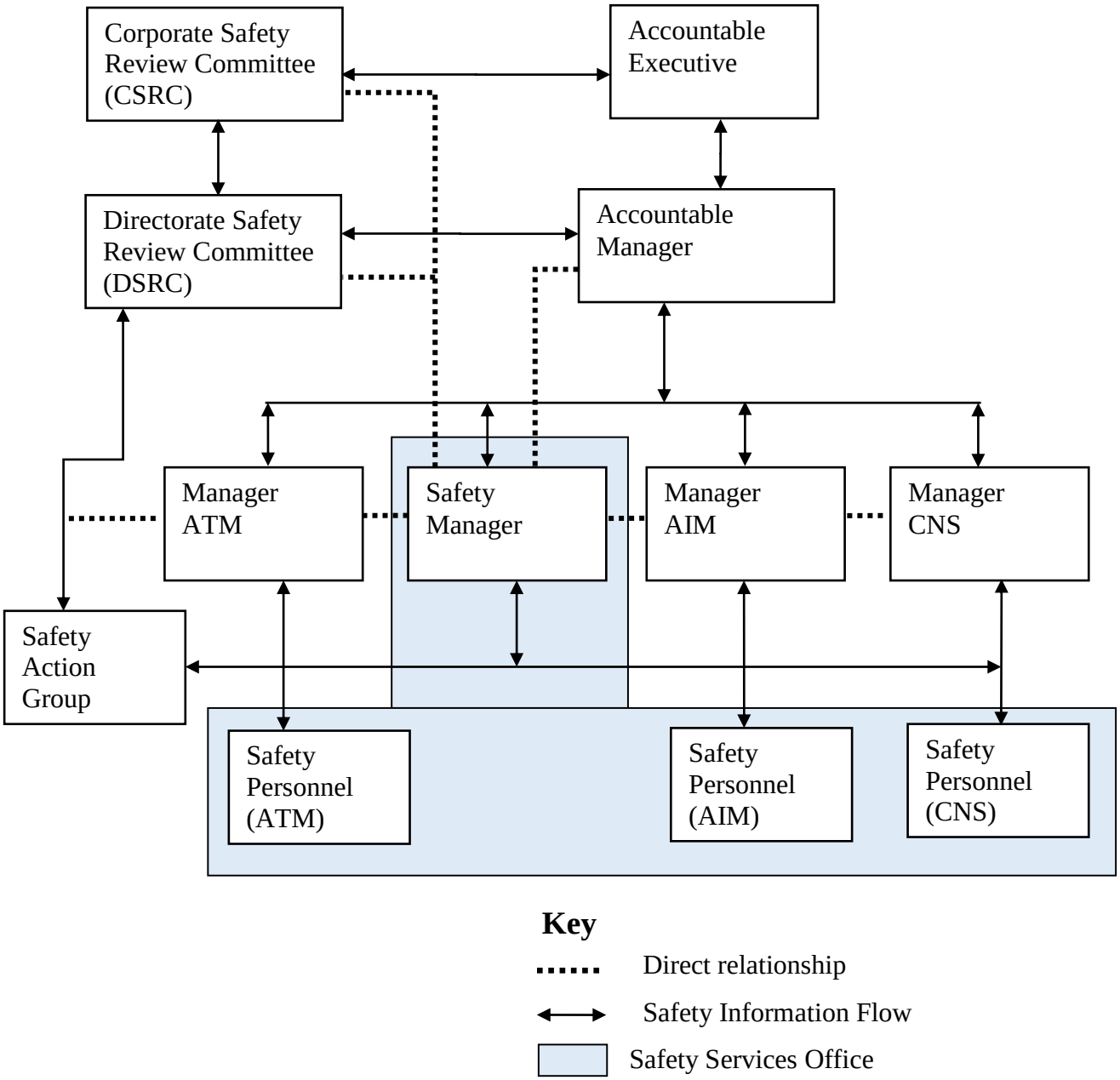


Fig.2.1: DANS SMS functional chart

2.4.3. Accountable Executive

2.4.3.1 The Accountable Executive who is the Director General (DG) has ultimate responsibility and accountability for the SMS and will provide the resources necessary to implement and maintain the SMS. The Accountable Executive's authorities and responsibilities are detailed in appendix J to this manual.

2.4.4. Accountable Manager

2.4.4.1 The Accountable manager is the Director ANS and reports directly to the Accountable Executive. The Accountable manager's authorities and responsibilities are detailed in appendix J to this manual.

2.4.5. Safety Manager

2.4.5.1 The Safety Manager who is the Manager Safety Management Systems/Quality Assurance is responsible for accomplishing many of the daily tasks and functions of the SMS. This person reports directly to the Accountable Manager.

2.4.5.2 The competencies for a safety manager should include, but not be limited to, the following:

a) safety/quality management experience;
b) operational experience related to the product or service provided by the organization;
c) technical background to understand the systems that support operations or the product/service provided;
d) interpersonal skills;
e) analytical and problem-solving skills;
f) project management skills;
g) oral and written communications skills; and
h) an understanding of human factors.

2.4.5.3 The duties and responsibilities of Manager Safety Management Systems/Quality Assurance are detailed in appendix J to this manual.
The Safety Manager is assisted by the safety personnel shown in the chart below. The Safety Manager provides direct supervision for these personnel for all SMS related activities.

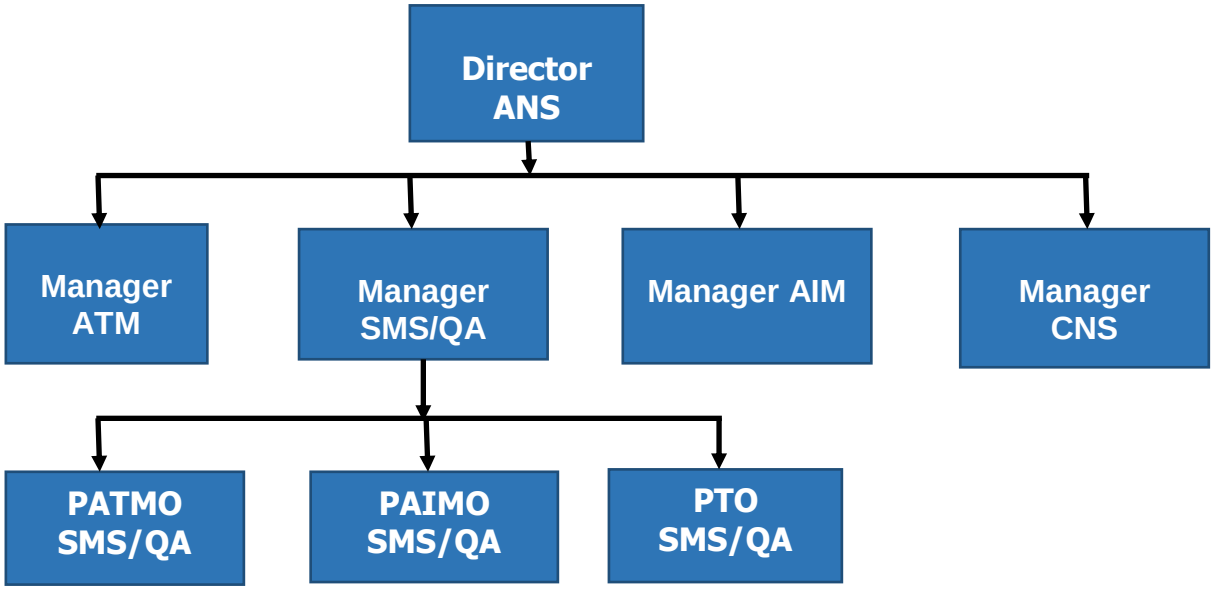


Fig.2.2: DANS Safety Office Organisational Chart

Note: Detailed job description can be obtained from the approved detailed UCAA Organisation Chart from HR

The Safety Manager's role is to provide safety expertise to assist all operating departments in achieving their safety targets.

2.4.6. Line Managers (Manager AIM, Manager ATM and Manager CNS)

2.4.6.1 The Line Managers are accountable for safety of operations in their respective Departments. The Line manager's duties and responsibilities are detailed in appendix J to this manual.

2.4.7. Principal SMS officers

2.4.7.1 The Safety Manager is assisted by staff from various departments as referenced in the chart above. The Safety Manager provides direct supervision for these personnel for all SMS related activities and may assign SMS duties to these personnel, their Safety duties are detailed in appendix J to this manual.

2.4.7.2 The generic accountabilities and responsibilities of each of the safety personnel are stipulated in their respective job descriptions. The specific duties of each of the safety personnel shall be assigned from time to time by the manager SMS/QA

2.4.8. The Safety Services Office

2.4.8.1 The safety services office is at the heart of the functional chart. The safety services office is independent and neutral in terms of the processes and decisions made regarding the delivery of services by the line managers of operational units. In an SMS environment, the safety services office fulfils four essential corporate functions detailed in appendix J to this manual:

2.4.9. Safety Action Group

2.4.9.1 The Safety Action Group(s) (SAG) of DANS serves to coordinate the implementation of safety strategies as per the strategic direction developed by the Directorate SRC.

2.4.9.2 Station SAGs are formed at each station (Entebbe, Gulu and Soroti stations) and are chaired by the officer in Charge of the respective station. The SAG comprises of

a. Principals and supervisors in case of Entebbe station. Include in-charges NOF, COM, BFG, STO-R, SATMO-OPS, and SATMO-OJT.
b. Unit/section supervisors in case of Gulu station. And Other stakeholders as and when issues on agenda necessitate so

c. Unit/section supervisors in case of Soroti station. And Other stakeholders as and when issues on agenda necessitate so e.g. (safety personnel from the Academy and meteorology (UNMA) at Soroti)

2.4.9.3 The responsibilities/duties, of the station SAG are as detailed in are detailed in appendix J to this manual. The SAGs will convene regularly as detailed in Appendix G.

2.4.10. Directorate SRC (DSRC)

2.4.10.1 DSRC utilizes the line Managers and Principal Officers within DANS to oversee, review the activities and own all outputs from station SAG. DSRC is chaired by the Director ANS and in his/her absence, the line manager chairs the DSRC.

2.4.10.2 The responsibilities/duties of the DSRC are as detailed in appendix J to this manual.

2.4.11. Corporate Safety Review Committee (CSRC)

2.4.11.1 The organization has established a corporate Safety Review Committee (SRC) to provide a formal process for assessing the effectiveness and efficiency of aviation safety risk-mitigation strategies. The corporate SRC further provides a platform for achieving the objectives of resource allocation and for discussing safety related issues from different perspectives.

2.4.11.2 The corporate SRC comprises; The UCAA Director General, the Directors, and Managers of the technical directorates providing multidisciplinary expertise. The committee provides a natural forum for sharing ideas and assessing safety performance from an organisational perspective.

2.4.11.3 The Accountable Executive or the designated deputy will chair the corporate SRC and the UCAA SMS Managers will participate on this committee in advisory capacity only. This committee will convene at least, once every four (4) months or as circumstances may dictate.

2.4.11.4 The responsibilities/duties of the corporate SRC are detailed in appendix J to this manual.

2.4.12. All other Staff categories

2.4.12.1 The functional categories defined in the SMS Functional Chart are not the only ones whose activities impact safety of operations. Other staff categories i.e. Managers, Principal Officers, Senior Officers, Officers, Trainees, Contract Managers and casual workers also play a vital role in operation and maintenance of SMS. Staff in these categories shall consider the safety implications of their actions in line with their operational duties as well as communicate relevant safety-related information. These staff shall be responsible for safety and their specific duties and accountabilities are detailed in appendix J to this manual.

2.4.13. Contractors (Service Providers and Suppliers)

2.4.13.1 Generally, documentation of requirements for contracts will incorporate SMS inputs. Specifically, the Contractor's role in SMS are detailed in appendix J to this manual.

2.4.13.2 Section heads, Contract managers, unit supervisors should ensure that all contractors undergo safety briefing prior to commencing works within the building, at any ANS facility or equipment in liaison with SMS office.

2.4.13.3 The interface between the ANS SMS and that of the contractor's safety systems must address the identification of hazards, assessment of risk and development of risk mitigation strategies where applicable.

2.5 Coordination of emergency response planning

2.5.1 General Provisions

2.5.1.1 Although the organisation has taken every precaution to avoid mishaps and emergency situations, it is inevitable that incidents may still occur. In order to deal with these unexpected situations in a positive manner, an emergency response plan coordination procedure has been developed as in Appendix F to this manual.

2.5.1.2 The purpose of this procedure is to guide operational departments such that the in the event of a situation requiring emergency response, transition from normal to emergency then back to normal operations is smooth.

2.5.1.3 The procedure requires operational departments to develop comprehensive emergency response/contingency plans commensurate to their operations including responsibilities, contact details of persons that may be of help in managing emergencies, relevant checklists and check sheets delegation of emergency responsibilities during and after emergency and requirement to periodically conduct table-top exercises and full-scale simulations of the emergency response system.

2.5.1.4 The plans should cater for assignment of emergency responsibilities, authorisation for action by key personnel, delegation of authority and the means to coordinate efforts necessary to cope with the emergency.

2.5.1.5 DANS shall ensure that an emergency response plan is properly coordinated with the emergency response plans of those organisations it must interface with during the provision of its services This is achieved by catering for the expectations of such organisations before, during and after the emergency.

2.5.1.6 The Emergency Response planning processes and Emergency Procedures and Plans shall be regularly exercised and revised to keep them up to date in any case according to Quality assurance document and records control procedure CAA/CORP/OP/01. The ERP shall be

distributed to all the key ANS staff and the plan will be easily accessible in case of emergency, the evacuation plan shall be displayed in all prominent places for all staff to study and understand.

2.5.2 Role of SMS department in Coordination of ERP

2.5.2.1 SMS department shall ensure that an emergency response plan for the directorate is properly coordinated with the emergency response plans of those organisations ANS interfaces with during the provision of its services.

2.5.2.2 SMS department shall ensure that the contingency plans developed by the operational departments are in line with Doc 9859 applicable Edition. SMS department shall further ensure that the implementation of the developed ERPs to the minimum follows the procedure in Appendix F to this manual.

2.6 SMS documentation

2.6.1 General documentation

2.6.1.1 The organization shall maintain all applicable SMS documents, records, and other information in accordance with document control requirements detailed in the CAA Quality manual. These documents, records and other information are maintained in both hard copy and soft/electronic form.

2.6.1.2 All documents and records are maintained in structured systems that provide legibility, original dates, revision dates, and easy retrieval. All documents are periodically reviewed, revised as necessary and approved as appropriate for adequacy by authorized personnel.

2.6.1.3 The current versions of relevant documents are provided to all locations where operations essential to the functioning of the SMS are performed. Obsolete documents are promptly removed from all points of use and retained or discarded in accordance with the schedule below.

2.6.1.4 Records are kept about the metrics of system analysis, hazard reporting, new operational procedures, risk analysis, risk mitigations, accidents, incidents, safety reviews and operational errors.

The following SMS records are retained:
SMS policy and objectives (retained 2 years)
The original SMS documents and subsequent revisions
Potential Safety Hazard Reports
Voluntary Safety Reports
SMS Training records

Outputs of the SMS (retained 2 years)

Completed Hazard and Risk Management Register for ATS operations (risk assessment & associated action plans)
Minutes of the meetings of the Safety Committees
Annual Safety Report

Accident and incidents (retained 2 years)
Completed accident and incident investigation reports
If legal action is pending or anticipated accident/incident records will be kept until the legal action has been resolved.

2.6.2 SMS manual for ANS

2.6.2.1 The Safety Management Systems Manual, its revisions and amendments are published and issued by the Safety Manager or his/her designee. The Safety Manager is responsible for its contents and for keeping instructions and information up to date. Submission, review and acceptance of SMS manual revisions shall be as per QMS procedure (CAA/CORP/OP/01) for control of documents and records. This manual shall not be reproduced in whole or in part or otherwise disclosed to any third parties without prior written consent from the Accountable Manager. Copies of this manual may be made available to certain contractors or industry partners, but the ownership of those copies remains with the Accountable Manager.

2.7 Procedures and Controls

2.7.1 Procedures and controls with measurable criteria are essential to the successful operation of the SMS. DANS utilizes many technical operating procedures which are incorporated into the various departmental manuals and handbooks. The procedures that are specifically applicable to the implementation and operation of SMS are contained in appendix I of this manual. These measurable criteria are reviewed annually to ensure the objectives of the safety policy are being accomplished.

CHAPTER 3: SAFETY RISK MANAGEMENT

3.1 Introduction

3.1.1 The Directorate manages safety by ensuring that, through its Safety Management processes, the safety risk of the consequences of hazards in critical activities related to the provision of Air Navigation Services are controlled to a level that is as low as reasonably practicable (ALARP). This is known as safety risk management, a generic term that encompasses two distinct activities; hazard identification and safety risk assessment and mitigation.

3.1.2 DANS Safety Management System uses the formal process of Safety Risk Management to identify hazards that are associated with its operations, analyse and assess the risks associated with those hazards and implement controls where necessary to prevent future incidents and accidents. The safety risk management process is both reactive and proactive. The process is also used to prioritise the resulting process improvements to ensure the best allocation of available resources.

3.2 Hazard Identification

3.2.1 The purpose of hazard identification is to allow for a safety analysis of the risks associated with the hazard and the subsequent elimination of the hazard or the reduction of its risks to an acceptable level. While the identification of every conceivable hazard is impossible, all staff shall exercise due diligence to identify hazards related to their operations. These hazards can be actual or potential. All identified hazards shall be assigned a unique tracking number, ranked/prioritised and subjected to the Safety Risk Management process described in this chapter. All hazards which still appear at the close of the year in the Hazard and Risk Management Register for ANS (Form 122) will be transferred to the Hazard Register (Form 125). However, forms 122 and 125 may be extracted from the Hazard Management Worksheet maintained in the excel worksheet or the SMS database at any time as may be required since the Hazard Management Worksheet is more comprehensive and most current.

3.2.2 The Directorate utilizes both reactive and proactive methods of hazard identification. The traditional reactive methods of hazard identification will analyse hazards that have been identified or have already contributed to a safety occurrence. These reactive processes include the conduct of investigations into accidents, incidents, occurrences, Mandatory and Voluntary employee reports, external audits and regulatory violations. The directorate also uses the results of investigation of incidents and accidents as asource for hazard identification in the system.

3.2.3 Proactive methods attempt to identify and analyse hazards before they have resulted into an incident or accident. The proactive methodologies are discussed below.

a) Existing procedures and operations will be analysed to identify inherent risks. This system and task analysis process is described in section 3.3 and will be performed as per the schedule in appendix G.

b) All significant changes to the operations will be analysed prior to implementation to foresee new hazards and to revise the proposal to eliminate the hazards or to control the risks to an acceptable level. This process is described in section 4.6.
c) Continual review of operational data and trend analysis to proactively identify hazards as described in section 3.6
d) The internal evaluation process described in section 4.8.2.
e) Internal and external audits described in section 4.8.1 and 4.8.3

3.3 System and Task Analysis

3.3.1 All policies, procedures and operations incorporate safety; however, they may be reviewed to determine opportunities for improving their inherent levels of safety.

3.3.2 System and task analysis will be carried out using Form 121 by subject matter expert(s) identified by the respective section heads under the guidance of line managers. As a minimum, system and task analysis reports shall have background information, system description, task analysis and a completed form 121 with safety recommendations and forwarded to SAG for review.

3.3.3 Hazards identified by the System and Task Analysis process shall be subjected to the SRM process detailed in appendix A (form 122) to this manual. SMS Form 122 is used to organize the SRM process and record the results.

3.4 Mandatory Reporting Program

3.4.1 In order to comply with the prevailing Safety Management regulation, all DANS' staff shall participate in the mandatory reporting program. As a minimum all incidents associated with aircraft shall be reported under the mandatory reporting program. Electronic and Manual Situation Report (SITREP) form (SMS Form 116) accompanied by a log entry in the operational Logbook shall be used under this program. All incident investigation reports shall be submitted to DSSER. Copies of these reports shall also be submitted to the Safety Manager for subjection to the Safety Risk Management process.

3.4.2 Mandatory reporting of incidents shall include;

- unauthorized penetration of airspace
- aircraft near CFIT
- Significant level bust incidents
- loss of separation incidents
- Runway incursion
- Runway excursion/overshoot
- Any other ANS-related deficiency/defect/malfunction as reported to (and verified by) the ANS/CNS operator and which is deemed to have an impact on the safety of air navigation
- Any other incidents or occurrences deemed by the State as reportable under this mandatory reporting system.

Note: Concealment or not reporting incidents/safety occurrences is regarded as unacceptable behaviour within DANS and will be subject to punitive measures. All reportable incidents must be reported.

3.5 Voluntary Reporting Program

3.5.1 Staff who work in operational areas are in the best position to be aware of hazards and incidents. Thus, all personnel are strongly encouraged to report all actual or potential hazards, incidents, observed deficiencies in existing procedures/processes.

3.5.2 Reports should also be made where procedures were not followed for either inadvertent or intentional reasons. They may be made verbally, by e-mail (sms-dans@caa.co.ug) or to any Safety Office personnel, but it is preferred that the report is made in writing to the Safety Manager using SMS Form 120 with a full explanation of all related details from which an analysis can be made.

3.5.3 Any member of staff in the Safety Office who receives a verbal report will complete SMS Form 120 for submission to the Safety Manager. These reports may also be deposited into the suggestion box available within the DANS building.

3.5.4 The Voluntary Reporting Program is a confidential program that protects the identity of the reporter. Only the Safety Manager, and/or the safety office personnel who received the report, will know the identity of the reporter and shall keep that identity confidential.

3.5.5 The Safety Manager, or his designee, may contact the reporter to obtain additional information necessary to fully analyze the situation. Further use of the reported information outside of the Safety Office shall not contain any facts that can identify the reporter. The Safety Manager may report the supplied information to the regulator, without revealing the identity of the reporter.

3.5.6 Additionally, the Voluntary Reporting Program is non-punitive and shall not use the reported information to punish staff, but instead focuses upon developing process improvements to eliminate the identified hazards or control the risks associated with the hazard. It is recognized that some incidents and accidents are due to inadequate procedures or inadequate training given to staff about the procedures, and considering the human factors aspect, there is no benefit in allocating personal blame in these cases. However, this non-punitive approach does not apply to illegal acts or blatant disregard of regulations or applicable procedures.

3.5.7 All reporters shall receive a confidential confirmation of receipt of their report from the Safety Manager. Upon resolution of the issue, the reporter shall also receive a confidential summary of the actions taken. These corrective actions may also be communicated to the entire directorate, but the identity of the reporter will remain confidential.

3.5.8 Furthermore, the directorate maintains a suggestion box located in all operational and general areas. Although staff are encouraged to use the dedicated reporting systems described above, any employee is free to deposit hazard observations and safety information in the suggestion box.

3.5.9 Reports collected through the voluntary reporting program will be submitted to the Safety Manager. Hazards identified from these reports will be subjected to the safety risk management process.

3.5.10 The safety reporting system provides feedback to the reporter of any actions taken (or not taken) and, where appropriate, to the rest of the organization.

3.6 Operational Data Analysis

3.6.1 Data about the operations of the directorate is available from many sources including but not limited to; ATS logs, equipment logs, reliability data, etc. A safety database shall be maintained to facilitate the effective analysis of information on actual and potential safety deficiencies identified including that from the incident reporting systems. This operational data will be monitored and analysed for trends and other indications of inherent hazards.

3.6.2 All identified hazards will be subjected to the Safety Risk Management process.
Preventive actions to address actual or potential safety deficiencies identified shall be implemented. The organisation will also monitor the implementation and effectiveness of the responses.
The organisation endeavours to implement an ADREP – compatible database system.

3.7 Risk Analysis

3.7.1 Risk analysis follows a simple three step process of condition (hazard), consequence (event), and risk (the probability and severity of the event.)

3.7.2 All incoming reports shall be screened to ensure they are not simple process quality problems that can be handled without risk analysis.

3.7.3 Trained personnel shall evaluate each identified hazard, and the system state(s) in which it exists, to determine what controls exist to prevent or reduce the effect(s) of the hazard. The team performing any risk analysis shall be comprised of at least one personnel trained in safety risk management and other staff who understand operations where hazards under consideration are. Each hazard will be analysed to determine its potential to cause damage or harm, known as risk. The analysis will also include examining events or conditions that could cause the hazard to reduce system operability or safety levels. SMS Form 122 is used to organize the risk analysis process and record the results.

3.7.4 Each identified hazard has one or more associated risks. It is important for the risk analysis to identify all reasonable risks arising from each hazard. Each risk should then be defined in terms of its predicted severity and its probability of occurrence. Risks that are not within the scope of DANS' operations shall be forwarded to the relevant offices.

3.7.5 The severity of each risk is determined by its worst credible outcome. Less severe effects may also need to be included so that they can also receive proper assessment. It is important that the probability of the effect is not considered at this stage. The table below shows the severity levels.

Severity of occurrence	**Meaning**	**Value**
Catastrophic	- Equipment destroyed - Multiple deaths or Single death	A
Hazardous	- A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely - Serious injury -Major equipment damage	B
Major	- A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency - Serious incident - Injury to persons	C
Minor	- Nuisance - Operating limitations - Use of emergency procedures - Minor incident	D
Negligible	- Little consequences	E

Table 3.1: Risk severity

3.7.6 The probability of outcomes is determined by statistical analysis or by expert opinion in the absence of other data. The table below shows probability definitions.

	Meaning	**Value**
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred infrequently)	4
Remote	Unlikely to occur but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely improbable	Almost inconceivable that the event will occur	1

Table 3.2: Risk probability

3.8 Risk Assessment

3.8.1 To accomplish a risk assessment, the results of each analysed risk (risk index) will be plotted on the Risk Assessment Matrix shown below. This will be accomplished by the

Safety Manager. The location of the risk on the matrix will determine the priority of corrective actions.

Severity Probability	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent - 5	5A	5B	5C	5D	5E
Occasional - 4	4A	4B	4C	4D	4E
Remote - 3	3A	3B	3C	3D	3E
Improbable - 2	2A	2B	2C	2D	2E
Extremely Improbable - 1	1A	1B	1C	1D	1E

Table 3.3: Safety risk assessment matrix

1.	Unacceptable .(Intolerable)
2.	Acceptable with Mitigation (Tolerable)
3.	Acceptable

Table 3.4 Risk Tolerability description

3.9 Unacceptable Risk

3.9.1 Hazards with risk indices falling in this range are intolerable and therefore un-acceptable under any circumstances. They require immediate action to eliminate the hazard or control the factors leading to its higher probability or severity. The Safety Manager shall receive immediate notification of such assessments from SAG, SRC and Line Managers. The DANS will own the Unacceptable risks by signing off the report/notification/assessment received from the SAG/SRC/line manager and by doing so will signify that top Management is aware about these risks and the course of action taken/to be taken thereafter.

3.9.2 Newly identified hazards with unacceptable risks will require the development of controls within the normal course of business.

3.10 Acceptable with Mitigation

3.10.1 Hazards with risks falling in this range are tolerable and therefore acceptable provided appropriate mitigation strategies are implemented. They require the implementation of mitigation strategies as expeditiously as possible. Continued monitoring will be required to ensure the effectiveness of the implemented controls.

3.11 Acceptable Risk

3.11.1 Risks in this range are acceptable without further action, but prior efforts should be made to reduce the risk to as low as reasonably practicable (ALARP) if it is economical to do so. The objective of this SMS is to reduce risk to as low as reasonably practicable (ALARP) whenever possible.

3.12 Risk Assessment approvals

3.12.1 Risk assessment reports shall be subjected to approval by the line manager

Risk Index	Tolerability	Action required (customize as appropriate)
5A, 5B, 4A	Extreme risk	Stop operation or process immediately. Unacceptable under the existing circumstances. Do not permit any operation until sufficient control measures have been implemented to reduce the risk to an acceptable level. Top management approval required.
5C, 4B, 3A	High risk	Caution. Ensure that risk assessment has been satisfactorily completed and declared preventive controls are in place. Senior management approval of risk assessment before commencement of the operation or process.
1A, 2A, 2B, 3B, 3C, 4C, 4D, 5D, 5E	Moderate risk	Perform or review risk mitigation as necessary. Departmental approval of risk assessment.
1B, 1C, 2C, 2D, 3D, 3E, 4E	Low risk	Risk mitigation or review is optional.
1D, 1E, 2E	Negligible risk	Acceptable as is. No risk mitigation required.

Table 3.5 Risk acceptability (tolerability) table

3.13 Risk Control

3.13.1 The risk assessment of section 3.8 may indicate that controls need to be designed and implemented. These controls may be additional/changed procedures, new supervisory controls, addition of organizational hardware, or software aids, changes to training, additional or modified equipment, changes to staffing arrangements, or any of a number of other system changes.

3.13.2 Risk control will be accomplished in the organisation using the Hazard and Risk Management Register for ATS operations, SMS Form 122 found in Appendix A. This form shall be generated and retained in Organizational files for every risk that completes the risk assessment process.

3.14 Hierarchy of Controls

3.14.1 The process of selecting or designing controls will be approached in a structured manner. System safety technology and practice have provided a hierarchy or preferred order of control actions that range from most to least effective. Depending on the hazard under scrutiny and its complexity there may be more than one action or strategy that may be applied. Further, the controls may be applied at different times depending on the immediacy of the required action and

the complexity of developing more effective controls. For example, it may be appropriate to post warnings while a more effective elimination of the hazard is developed. The hierarchy of controls is:

a. Design the hazard out – modify the system (this includes hardware/software systems involving physical hazards as well as organizational systems).

b. Physical guards or barriers – reduce exposure to the hazard or reduce the severity of consequences.

c. Warnings - advisories, or signals of the hazard.

d. Procedural changes to avoid the hazard or reduce probability or severity of associated risk

e. Training to avoid the hazard or reduce the probability of an associated risk.

3.14.2 All controls will be clearly and fully documented to allow for further analysis, tracking and post- implementation monitoring and validation using SMS forms 122, 123 or 125.

3.15 Residual and Substitute Risk

3.15.1 It is seldom possible to entirely eliminate risk, even when highly effective controls are used. After these controls are designed, but before the system is placed on line, an assessment shall be made of whether the controls are likely to be effective and/or if they introduce new hazards to the system. The latter condition is referred to as "substitute risk," a situation where "a new risk is unintentionally created as a consequence of implementing safety risk control(s)." The former situation, where the controls fail to eliminate the risk entirely is referred to as "Residual risk".

3.16 Risk Control monitoring

3.16.1 Risk control monitoring will be accomplished in DANS using the Hazard and Risk Management Register for ATS operations, SMS Form 122 found in Appendix A. These forms will be retained as specified in section 2.6.1 to provide a lasting record of the actions.

3.16.2 Each hazard is uniquely identified which allows to validate whether the risk controls were fully implemented and that they were found to be effective. The next process, safety assurance, uses auditing, analysis, and review systems to further monitor the risk controls to ensure they continue to be implemented as designed and continue to be effective in the changing operational environment. Any control that is found to be deficient or ineffective will have its associated hazard re-entered into the safety risk management process for the development of more effective controls.

3.16.3 Safety assurance activities will be utilized to monitor the effectiveness of risk controls including those applied by contracted organizations.

CHAPTER 4: SAFETY ASSURANCE

4.1. Introduction

4.1.1 The safety assurance process provides confidence that the SMS is operating as designed and is effective. Safety assurance consists of processes and activities undertaken by the organisation to determine whether the SMS is operating according to expectations and requirements. The primary purpose of this process is to ensure the performance and effectiveness of the risk controls. Safety assurance uses information from various sources including Mandatory incident reporting systems, voluntary incident reporting systems, Safety studies, Safety surveys, safety reviews, evaluations, operational data, system and task analyses, audits and internal investigations.

4.1.2 Safety studies are analyses used to gain an understanding of broad safety issues or those of a global nature. This involves analysing global safety recommendations to assess their ability to improve safety performance in the context of aviation activities in DANS.

4.1.3 Safety reviews are a fundamental component of change management. They are conducted during the introduction of new technologies, new procedures or systemic changes that affect aviation operations. Safety review shall be conducted before such change is effected, in order to ensure that safety performance is maintained at appropriate levels during periods of change.

4.1.4 Safety surveys examine procedures and processes related to a specific operation. They may involve the use of checklists, questionnaires, and informal confidential interviews. Safety surveys generally provide quantitative information that may require validation to determine appropriate corrective action.

4.1.5 Safety audits (internal & external) and evaluations are core safety management activities that provide a means of systematically assessing how well DANS is meeting its safety objectives. Evaluations can be scheduled or unscheduled formal reviews, examinations and verifications of activities and operations. They improve the quality of products, processes, or services and provide a means for monitoring compliance with international standards and national regulations.

4.1.6 Safety assurance provides for the continued monitoring of internal processes as well as its operating environment to detect changes or deviations that may introduce emerging safety risks or the degradation of existing risk controls. If personnel identify that existing risk controls are ineffective, have not been fully implemented, or are not being properly followed, they work with the department management to arrive at corrective actions to reinstate the control. In some cases, the resolution of corrective action could constitute a change to established procedures. Proposed changes shall be subjected to the change management process described in section 4.6 prior to implementation.

4.1.7 As the SMS matures, the existing Quality Management System audits will be phased into this Safety Management System. The SMS will then include all functions accomplished by this earlier program. This will expand the safety efforts to a much more comprehensive level.

4.2. Information Acquisition

Information used for measuring safety performance of the organization is generated from safety reporting systems described in sections 3.4, 3.5 and 4.1.

4.2.1 Continuous Monitoring of operational data

4.2.1.1 The Directorate actively seeks the information necessary to confirm the successful operation of the SMS processes. Continuous monitoring involves analysis of operational data as it becomes available. The operational data listed in section 3.6 is continually monitored to discover any pertinent trends. The Safety Manager is responsible for monitoring this information and accomplishing this review on a quarterly basis.

4.2.2 Safety reviews

4.2.2.1 Safety reviews are conducted as part of the organization's safety assurance program. Safety reviews are carried out to understand the current levels of safety risks, identify areas of deficiency and opportunities for improvement. Safety reviews shall be conducted once a year by appropriately qualified personnel using the "safety review checklist" in appendix K to this manual.

4.2.2.2 Safety reviews shall be conducted by a person at supervisory level with the experience, expertise and training in the technical area under review. The person shall in addition to technical competence possess safety related training including any of the auditing techniques, human factors principles, root cause analysis and safety risk management. The line managers in liaison with safety manager shall appoint a person to conduct the safety review.

Note: Person refers to an individual with the above competences or a group of persons carefully selected such that the individual team member technical competencies complement each other when working as a team.

4.2.2.3 On completion of the safety review, a safety review report shall be prepared and submitted to the respective line manager within ten (10) working days. The heads of department shall develop and share action plan with the safety office within thirty days after receipt of the safety review report.

4.2.2.4 The respective line manager shall oversee and ensure implementation of any remedial action relating to outcomes of the safety review and the safety office shall monitor implementation using SMS form 124.

4.2.3 Safety studies

4.2.3.1 Safety studies are analyses used to gain an understanding of broad safety issues or those of a global nature. For example, the airline industry may produce safety recommendations and implement measures to reduce accidents and incidents during the approach and landing phases. Individual service providers may find that these global recommendations improve safety performance in the context of their aviation activities.

4.2.4 Safety surveys

4.2.4.1 Safety surveys examine procedures or processes related to a specific operation. Safety surveys may involve the use of checklists, questionnaires, and informal confidential interviews. Safety surveys generally provide qualitative information that may require validation to determine appropriate corrective action. Nonetheless, surveys may provide an inexpensive source of significant safety information.

4.2.5 Internal Investigations

4.2.5.1 DANS investigates certain safety events in accordance with internal and/or regulatory requirements. Reports from accidents and serious incidents investigations by DSSER or other regional/international accident and incident investigation bodies will also provide the impetus for internal investigations to be undertaken by the directorate

4.2.5.2 These investigations are used to facilitate the implementation of more effective risk controls in the operation. They are not intended to be a chase for the guilty party, but rather a move towards effective risk mitigation. This ensures the cooperation of those involved in the event and facilitates discovery of the underlying causes. The short-term expediency of finding someone to blame is detrimental to the long-term goal of preventing future mishaps.

4.2.5.3 Incidents may be indicative of potentially serious hazards, perhaps systemic problems or latent conditions that will not be revealed unless the occurrence is properly investigated. Some safety occurrences may not require detailed investigation. In DANS, all these events are subjected to appropriate level of investigation and then subjected to the SRM process for hazard identification, tracking and control for existing and future operations.

4.2.5.4 When an event occurs, the respective departmental head will assign a person or team who trained in investigation techniques to investigate it as per the Accident and Incident Investigation Plan detailed in Appendix I to this manual. Upon conclusion the investigator shall use the information in the incident investigation report (Appendix I) to document all findings and hazards discovered using SMS Form 124 (Appendix A). The SMS office shall be given a copy of the report of the investigation detailing the findings and mitigation action taken or recommendations to prevent the re-occurrence of unsafe acts.

4.2.5.5 All incident and accident reports will be retained for the periods of duration specified in section 2.6.1.

4.2.6 Investigating organizational and management factors

4.2.6.1 Organizational culture has a very important role in determining the safety culture of an organization and management creates a safety culture when effecting accident prevention by eliminating unacceptable risks. Management is in better position to achieve this because they introduce changes in the organization, its structure, corporate culture, policies and procedures.

4.2.6.2 As a result of management's duties and responsibilities, their actions or inactions usually introduce organizational and management factors which affect the safety of operations. Organizational and management factors in accident causation are those factors within an organization's sphere of influence which increase the probability of an unsafe act occurring, or which reduce the effectiveness of defences in place to reduce the impact of unsafe acts.

4.2.6.3 Accident/incident investigation therefore needs to probe the contribution of these factors to the incident or accident.

4.2.6.4 The process of collecting data on organizational and management factors during the investigation of an incident is guided by two checklists used in conducting two types of interview.

4.2.6.5 Checklist A (Appendix I, Procedure 1) is used by the investigator to interview management and employees for general background information on organizational and management factors. It probes into the "4Ps" beginning with Practices observed during the interview and checking for their consistency with Procedure, Policy and Philosophy of the organization.

4.2.6.6 It may be used by starting with the practices observed during an occurrence investigation and working backwards to determine the degree to which there is consistency between these practices and the procedures, policies and philosophy of DANS.

4.2.6.7 Alternatively, a top down approach may be adopted in which the investigator begins by examining the safety philosophy of an organization and investigates the extent to which this is translated into policies, procedures and practices.

4.2.6.8 Checklist B (Appendix I) is based on checklist A, and is used by the investigator to interview management and employees to determine how the organization handles specific unsafe acts or conditions that have been identified in the investigation.

4.2.6.9 The investigators use the checklists as a starting point to guide their investigation but build on them as necessary. The objective is that the latent unsafe organizational and management factors are unearthed. This checklist is subject to review and maybe applied in whole or part depending on the situation.

4.3. Analysis of safety Data

4.3.1 A critical component of the SMS is tracking and analysing safety data to enhance the awareness of potentially hazardous situations. This screening and decision process will evaluate the data for significance and is applied to all incoming data. Safety data described in section 4.2 is

collected and analysed in a timely manner. This information is continually shared to improve the level of safety. This safety information is used to:

- Identify risks and verify the effectiveness of implemented controls.
- Identify areas in which safety could be improved.
- Contribute to accident and incident prevention.
- Assess the effectiveness of training.

4.3.2 The Safety Manager is responsible for analysing safety data to identify adverse trends and to identify indicators of potential safety issues. Over time this data will help identify indicators that point to potential problems in the system. We also use safety data to assess the effectiveness of the SMS by tracking safety matrix.

4.4. Safety Management System Assessment

4.4.1 The safety office will conduct a safety management system's assessment to determine the level of maturity/implementation of the SMS periodically by using the SMS gap analysis tool – Appendix E, CANSO SMS Standard of Excellency Questionnaire, Safety Culture Survey – Appendix C or any other assessment tool deemed appropriate by the safety manager. The Safety Manager may enlist the assistance of appropriate individuals throughout the organization for this purpose. SMS assessment shall be conducted as per schedule in appendix G. The results of the SMS assessment shall be utilised for Internal Evaluation of the SMS.

4.5. Safety Performance indicators (SPIs)

4.5.1. General Provisions

4.5.1.1 SMS department shall develop and maintain the means to verify the safety performance of ANS directorate and to validate the effectiveness of safety risk controls. A safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS.

4.5.1.2 The majority of information for the measurement of the ANS safety performance is generated through its safety reporting systems. To be effective, safety reporting tools need to be readily accessible to operational personnel who should be educated on the benefits of safety reporting systems and provided with positive feedback regarding remedial actions taken in response to the report.

4.5.1.3 Other sources of safety information to support safety performance monitoring and measurement may include:

- Hazard reporting
- Audits
- Safety surveys
- Safety reviews
- Internal investigations and recommendations

4.5.1.4 The final output of a safety performance monitoring and measurement process is the development of safety performance indicators based on analysis of data collected through the

sources referenced above. The monitoring and measurement process involves the use of selected safety performance indicators, corresponding safety performance targets and alert levels.

4.5.2 Requirements

4.5.2.1. The department shall develop both pro-active (Leading) and reactive (lagging) safety performance indicators and utilise them to verify and monitor safety performance.

4.5.2.2. Leading indicators are pro-active measuring and monitoring criteria and provide input or activity-based information in the absence of any accident, damage to equipment and/or significant reduction in safety margins. Leading indicators are forward looking and predictive; they are aimed at raising the awareness of the possibility of incidents that might happen. These indicators measure and monitor what should be done for managing the SMS.

4.5.2.3. Lagging indicators are reactive measuring and monitoring criteria, providing output-based information on incidents that have occurred and in addition providing insights into means of preventing similar incidents in the future. Lagging indicators provide evidence of deficient SMS performance. These indicators identify weaknesses in the SMS.

4.5.2.4. Procedure for developing and monitoring the coherent set of safety performance indicators, their corresponding safety performance targets and alert levels is as described in appendix I to this manual.

4.5.2.5. The ANS safety performance indicators shall be regularly reviewed as and when the manual is reviewed using a risk-based approach., that is, with focus on higher risk areas that require more effort for improvement purposes.

4.5.3 Process

4.5.3.1 For any performance indicator to be effective, it is important that it is:

- Objective and easy to measure and collect,
- Relevant to the ANS operation or its departments whose performance are being measured, Providing immediate and reliable indications of the level of performance,
- Cost efficient in terms of the equipment, personnel and additional technology required to gather the information,
- Understood and owned by the workgroup whose performance is being measured.
- In addition to these general requirements, some additional characteristics that leading performance indicators must have if they are to be useful:
- There must be a connection between the leading information and the outcomes that are of interest. The reasons behind the indicators and their benefit must be understood by line management and the workforce affected.

- The indicators must provide information that can guide future actions to either improve desired outcomes or provide warning of potential weaknesses and allow action to avoid undesirable outcomes.

4.5.3.2 Therefore, in addition to the points above, effective leading performance indicators must also:

- relate to activities considered to be important for future performance
- be amenable to intervention / influence by the workgroup whose performance is being measured relate to something where there is scope to improve
- provide a clear indication of a means to improve performance.

4.5.3.3 The focus on using leading performance measures to influence future actions means that it is important to think about leading performance indicators as part of a process, and careful thought is required to identify what information will be most useful.

4.5.3.4 When setting performance indicators for the effectiveness of the SMS, it is necessary to establish that DANS and its departments are compliant with Annex 19 and the acceptable ANS SMS

4.6. Management of Change

4.6.1 Whenever there are pertinent changes to operations/processes, procedures, airspace re-organisation, facilities/equipment/software, key safety personnel or pertinent changes external to DANS such as regulatory/industry standards, best practices or new technologies, new safety risks and activities potentially hazardous to civil aircraft may come up or current defences to existing risks may be degraded.

4.6.2 Key stakeholders affected by a given change are involved in the change management process. All unit heads shall monitor and recommend changes to the safety manager or his/her designee for acceptance prior to implementation. Prior to acceptance and implementation of the proposed changes, they shall undergo a System and Task Analysis process as described in section 3.3 to identify hazards which will be subjected to the Safety Risk Management Process for analysis and implementation of controls, as necessary. Such changes shall be controlled using;

i) The system and task analysis worksheet (SMS Form 121)
ii) The hazard and risk management register for ANS (SMS form 122) and
iii) The change management form (SMS Form 115a).
iv) Change implementation schedule form (SMS Form 115b)

4.6.3 The objective is to eliminate or control potential hazards and their associated risks before implementing the changes in order to maintain or improve the organization's acceptable level of safety. This process may also be referred to as Safety Assessment Process.

4.6.4 During the change management process due consideration is given to previous risk assessments and existing hazards are reviewed for possible effect or relationship on existing control involving a given ANS change.

4.7. Continuous improvement of the SMS

4.7.1 Safety assurance processes support improvements to the SMS through continual verification and follow-up actions. These objectives are achieved through the application of internal evaluations and independent audits of the SMS.

4.8. Safety Audits

4.8.1 General Provisions

4.8.1.1 Audits evaluate the effectiveness of the overall SMS, identify areas in need of improvement, and verify the results of those improvements. Audits further contribute to the identification of negative safety trends, which can lead to the identification and mitigation of hazards. Audits may be conducted by entities that are external to the service provider or through an internal audit process having the necessary policies and procedures to ensure its independence and objectivity.

4.8.1.2 Audits are intended to provide assurance of the safety management functions, including staffing, compliance with approved regulations, levels of competency and training.

4.8.1.3 Audits shall be conducted regularly as per the SMS Calendar of Regular Scheduled Events in appendix G of this manual. The scope of an audit varies with the stage of the program/operation, its maturity, type of safety processes, and level of confidence developed from previous audits.

4.8.2 Internal Safety Audits and Inspections

4.8.2.1 Internal audits involve the systematic and scheduled examination of our operations, including those specific to implementation of the SMS. Internal audits are conducted by persons from within ANS who are independent of the functions being evaluated. They provide the organization's management with the ability to track the implementation and effectiveness of the SMS as well as its supporting systems. Safety audits focus on programs and processes to ensure they meet the ANS safety goals.

4.8.2.2 Internal safety inspection is a thorough and systematic process that identifies potential hazards and practices in operating functions. Assesses equipment, behaviours and practices and working environment.

4.8.2.3 The internal safety audit and inspection checklists shall be developed by auditors in accordance with the scope and method prescribed by the audit plan. The generic internal safety audit/inspection checklists is provided for in Appendix B.

4.8.3 Criteria for selection of Auditors and Lead Auditors

4.8.3.1 Internal Auditor:

4.8.3.1.1 An Officer shall be appointed to perform the role of internal auditor if s/he has competency in any ANS technical area to be audited and/or auditing techniques. In practice, internal audits in ANS are carried out by teams. Composition of the audit team for any ANS technical area shall have at least one member at senior level in the technical area and at least one member trained in auditing techniques. An officer may be appointed to conduct an audit in an ANS technical area alone if s/he is at senior level in the technical area to be audited and has trained in auditing techniques.

4.8.3.2 Lead Auditor:

4.8.3.2.1 An officer appointed in the role of lead auditor shall:

i) Meet the requirements as internal auditor.
ii) Have specialised training as a lead auditor and/or participated in at least two (2) audits as a Team Leader.

Note: An officer shall not be selected to audit a functional area they are currently deployed in.

4.8.3.2.2 The Safety Manager may also use self-audit checklists to identify events, policies, procedures or practices that may be indicative of safety hazards, deficiencies or non-compliances.

4.8.4 Internal Evaluation

4.8.4.1 Internal evaluation is an on-going process that ascertains the level of maturity of SMS implementation. This process facilitates the identification of the current level of safety performance and provide a basis for safety goals.

4.8.4.2 The Safety Manager and safety team will provide a report on the effectiveness, efficiency and maturity level of implementation of the SMS based on the results of SMS assessment. The outcome of the internal evaluation shall form the basis for continuous improvement initiatives and interventions by management.

4.8.5 External Auditing of the SMS

4.8.5.1 External audits of the SMS are conducted by DSSER and may be conducted by industry associations or other third parties selected by the service provider. All external audits and safety inspections provide valuable information that can be used to improve safety in the daily operations. All deficiencies identified through this process are entered into the SRM processes described in this manual. These external audits enhance the internal audit system as well as provide independent oversight.

4.8.6 Preventive/Corrective Action

4.8.6.1 Following each system & task analysis, safety review, safety study, safety survey, audit cycle, incident investigation, evaluations, data analyses or risk assessment the directorate will take action to address identified non-conformances and deficient areas. This response will include both preventive and corrective actions.

4.8.6.2 ***Preventive action*** is taken to eliminate the cause of a potential nonconformity or other undesirable potential situation.

4.8.6.3 ***Corrective action*** is taken to eliminate the cause of a detected nonconformity or other undesirable situation. There can be more than one cause of nonconformity. Corrective action is taken to prevent recurrence whereas preventative action is taken to prevent occurrence.

4.8.6.4 During the preventive/corrective action process, the Safety Manager will present the findings from the system & task analysis, safety review, safety study, safety survey, audit cycle, incident investigation, evaluations, data analyses or risk assessment to the manager of the unit or section where the deficiency/nonconformity has been detected. This may be verbal or written as appropriate to the situation. This initial process will be used to solicit additional information and correct any misunderstandings.

4.8.6.5 Dates for issuing interim reports and for receiving comments will be mutually agreed upon after which planned remedial actions will be generated and documented for all identified areas of safety concern. Each departmental manager has the responsibility to develop a corrective action plan setting out the actions to be taken to resolve identified deficiencies or safety shortcomings. Each action item will be assigned an agreed time period for completion.

4.8.6.6 Implementation of the corrective action plan will be accomplished by the appropriate department manager with the assistance of the Safety Manager. Final reports will include these corrective actions taken and detail any follow-up action proposed.

4.8.6.7 The manager of the affected section is responsible for ensuring the timely implementation of the appropriate corrective/preventive actions. Any preventive/corrective actions that introduce new procedures or equipment shall be subjected to the change management process described in section 4.6.

4.8.7 Sources of Information relevant to a safety audit / evaluation

4.8.7.1 Physical examination of the equipment used. This may include examining the front-line equipment used, its components, and the workstations and equipment used by supporting personnel.

4.8.7.2 Documentation spanning a broad spectrum of the operation, for example:

i) maintenance records and logs
ii) personal records/logbooks
iii) certificates and licences
iv) in-house personnel and training records and work schedules
v) MANSOPS and SOPs
vi) training manuals and syllabi
vii) manufacturers' data and manuals and
viii) Regulatory authority records.

c) Interviews conducted with individuals. These can provide a principal source of information for any investigation. In the absence of measurable data, interviews may be the only source of information.

d) Direct observation of actions performed by operating or maintenance personnel in their work environment. This can reveal information about potential unsafe conditions. However, the persons being observed shall be aware of the purpose of the observations.

g) Specialist advice. Investigators cannot be experts in every field related to the operational environment. It is important that they realize their limitations. When necessary, they shall be willing to consult with other professionals during an audit or evaluation.

4.8.8 Management Reviews

4.8.8.1 Management reviews are conducted to examine whether the safety objectives of the organization are being achieved. They provide an opportunity to look at all the available safety performance information to identify overall trends. This is achieved through the Safety review Committee (SRC).

4.8.8.2 Information obtained from safety assurance and compliance monitoring activities feeds back into thesafety risk management process.

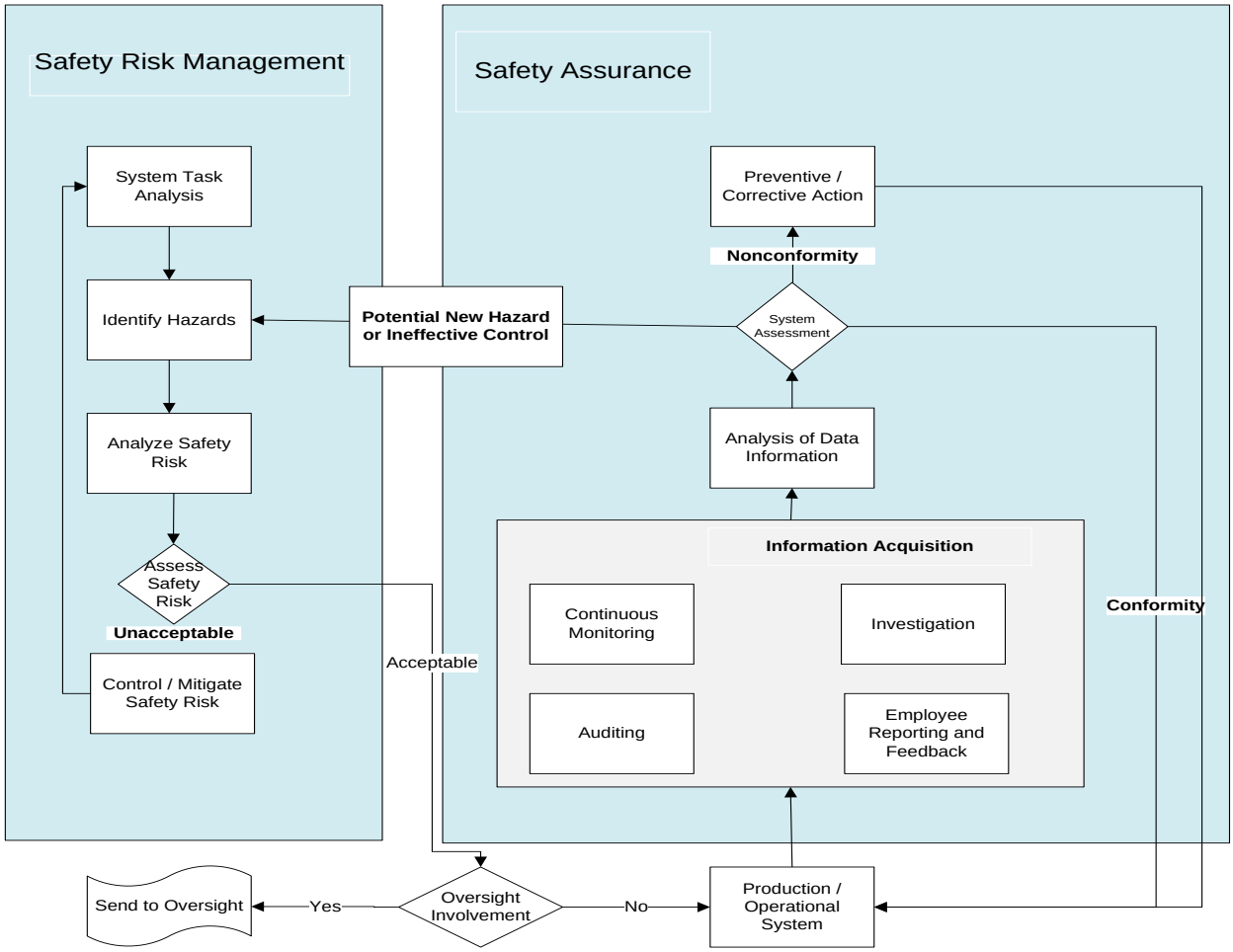


Fig.4.1 Relationship between Safety Risk Management and Safety Assurance

CHAPTER 5: SAFETY PROMOTION

5.1 Introduction

5.1.1 Safety Promotion refers to the collection of activities undertaken by DANS to promote a positive safety culture and create an environment that is conducive to the achievement of the safety objectives. A positive safety culture is characterized by values, attitudes and behaviour that are committed to DANS's safety efforts. This is achieved through technical competence that is continually enhanced through training and education, effective communications, and information sharing. The elements of a positive safety culture are described below;

i) Informed culture
Management intends to foster a culture where people understand the hazards and risks inherent in their areas of operation. Personnel are provided with the necessary knowledge, skills and job experience to work safely, and they are encouraged to identify the threats to their safety and to seek the changes necessary to overcome them.

ii) Learning culture
Learning in this organization is seen as more than a requirement for initial skills training, rather it is valued as a lifetime process. People are encouraged to develop and apply their own skills and knowledge to enhance organizational safety. Staff are updated on safety issues by management, and safety reports are fed back to staff so that everyone can learn the pertinent safety lessons.

iii) Reporting culture
Managers and operational personnel freely share critical safety information without the threat of punitive action. Personnel are able to report hazards or safety concerns as they become aware of them, without fear of sanction or embarrassment.

iv) Just culture
While a non-punitive environment is fundamental for a good reporting culture, all staff must know what is acceptable and what unacceptable behaviour is. Negligence or deliberate violations will not be tolerated in this organization, even in our non-punitive environment.

5.1.2 Safety promotion affects both individual and organizational behavior and supplements the directorate's policies, procedures and processes, providing a value system that supports safety efforts.

5.1.3 The Directorate is committed to ensuring that all staff are informed about the safety policies and goals, how well we are meeting those goals, results of accident and incident investigations, new safety practices, and other matters dealing with safety.

5.1.4 The safety manager has the responsibility of ensuring that the objective of safety promotion is achieved. The Accountable Manager provides leadership to promote the safety culture throughout DANS.

5.2 Safety training

5.2.1 The Directorate will provide SMS training to all staff appropriate to the individual's responsibility and involvement in the SMS. Training needs assessment shall be conducted as per procedure in appendix H to this manual. Training shall consist of initial and recurrent SMS training for operational personnel, managers and supervisors, senior managers and the Accountable Executive. SMS awareness shall be incorporated into DANS' employee indoctrination programs. All SMS training content developed internally shall be validated by the safety manager or his/her designee prior to its use. The ANS safety office under the supervision of the safety manager shall develop an annual SMS training plan.

5.2.2 A detailed list of staff training requirements shall be maintained by the departmental training officer. All staff shall receive initial and regular recurrent training in all matters relevant to their duties, both in normal roles and any roles for which they might act. All training undertaken shall be recorded in an individual's staff training record.

5.2.3 Individual performance shall be monitored and output shall be a basis for refresher and recurrent training.

5.2.4 The directorate utilises the monthly and annual SMS sensitisation workshops to refresh staff on safety management knowledge and its application in the work environment. Additionally, the SMS display, presentations during workshops organised by professional associations like UGATCA, UGAISOA, and UGATSEA to refresh staff on various elements of safety management systems.

5.2.5 The SMS department organises workshops and refresher training for any staff to address the gaps existing in the knowledge, skills and abilities in the application of safety management due to passage of time, dis-use or rare use. For personnel involved in SMS implementation and operation, shall be considered for refresher training after a period of at least five (5) years.

5.2.6 Successful operation of the directorate's SMS is tied to the success of the safety management system training program detailed in appendix H of this manual. All personnel shall understand the safety philosophy, policies, procedures and practices. They should understand their roles and responsibilities within that safety management framework. Accordingly, safety training will begin with each employee's initial indoctrination and continue throughout the term of employment.

5.3 Safety Communication

5.3.1 Overview

5.3.1.1 The Safety Objective is that ANS shall develop and maintain formal means for safety communication that:

- Ensures personnel are aware of the SMS to a degree commensurate with their positions;
- Conveys safety-critical information;
- Explains why particular safety actions are taken; and
- Explains why safety procedures are introduced or changed.

5.3.1.2 One of the primary means for improving safety performance is to ensure that lessons learnt from its safety occurrence investigations, and the case histories or experience from other organisations, are distributed widely and, where appropriate, actioned to minimise the risk of recurrence. Including the results of such lessons in training programmes will raise staff awareness levels.

5.3.2 Requirements

5.3.2.1 ANS must ensure that all information in whatever media format, related to the ANS SMS and/or safety related topics affecting the ANS operations, is made available to ANS staff, contractors and other stakeholders.

5.3.3 Process

5.3.3.1 Safety information is available from many sources including the Safety Management Manual, incident reports and investigations, and safety recommendations made from audits, surveys, reviews and external bodies such as the accident investigation boards and other civil aviation authorities, providers and operators. The means of processing this information is through various channels including:

- Safety Action Group – The committee will meet regularly and provide a forum where issues can be discussed and resolved together with airport stakeholders.
- Intranet - UCAA staff and contractors will have access to safety policies and documentation via the UCAA intranet.
- Safety Notice Boards - these are used to display safety information, posters, bulletins etc. in a centralised location in each airport department.
- Notices and Warnings - these include regulatory notices such as video surveillance advice and emergency exits signs.
- Safety Bulletins - these might include changes to procedures and operations or advice on specific safety related matters.
- Video Screens - these are installed in the ANS building and can be used to display safety information
- Newsletters - these can be published internally and distributed either electronically or in hard copy.

5.3.4 Internal safety Communication

5.3.4.1 Organization's SMS objectives and procedures shall be communicated to all staff. Information regarding safety performance trends, specific safety issues, lessons learned from investigations/case histories/experiences both internally and from other organizations shall be disseminated through established communication channels/processes described in this section.
Staff shall be encouraged to use available communication channels to continuously identify and report hazards.

5.3.5 External safety Communication

5.3.5.1 DANS SMS shall share safety information with external organizations whose operations affect safety of ANS operations (customers, contractors, regulatory organization, and other departments of CAA) as appropriate on prior arrangement. This may be either on request or voluntary basis through workshops, seminars, newsletters, meetings publications, adhoc training and official memos.

5.3.5.2 Additionally, the runway safety team to which DANS SMS has representation provides a platform for safety information sharing/exchange as well as collaborative safety risk management.

5.3.6 Communication initiatives

5.3.6.1 To achieve this, SMS initiated the communication and information dissemination channels/process described below.

a. A formal Safety Policy Statement has been published.
b. The employee safety feedback system described in Section 3.4 and 3.5 is in operation and provides for complete confidentiality.
c. Clear channels of communication are established throughout the directorate and open, honest communications may be rewarded.
d. Safety issues are discussed at all staff meetings and other directorate gatherings to provide for the open exchange of ideas.
e. The Directorate maintains a Safety Bulletin Board where safety information is posted for all staff.
f. Safety Bulletins describing new hazards and interim procedures are distributed immediately to affected staff.
g. The Directorate undertakes safety promotional campaigns/workshops when necessary to promote system-wide awareness of important safety issues. These campaigns may utilize various media such as posters, videos, displays, seminars, meetings, and/or workshops.
h. The lessons learned from safety reports will be communicated to operational staff.

5.3.6.2 Examples of DANS communication initiatives include;

a) Dissemination of the SMS manual
b) Safety processes and procedures
c) Safety newsletters, notices and bulletins, and
d) Websites or email.

APPENDIX A: SMS Forms

SMS FORMS INDEX REFERENCE

NUMBER	NAME	REVISION DATE	PAGE
113A	Workshop/Seminar Attendance Record (with External Participants)	June 2018	A-3
113B	Safety Activity Attendance Record (Internal Participants)	June 2018	A-4
114	Employee SMS Recognition Nomination	June 2018	A-5
115	Nomination to conduct safety assessment	August 2023	A-6
115A	Change Management Form	June 2018	A-7
115B	Change implementation schedule	October 2020	A-8
116	Situational Report	June 2018	A-9
120	Hazard Identification Report	June 2018	A-10
121	System and Task Analysis Worksheet	June 2018	A-11
122	Hazard and Risk Management Register	June 2018	A-12
123	Follow Up Actions on Safety Recommendation, CAPs	June 2018	A-13
124	Monitoring Effectiveness of Safety Risk Controls	June 2018	A-14
125	Hazard Register	June 2018	A-15
126	CAP Request Form	June 2018	A-16

DIRECTORATE OF AIR NAVIGATION SERVICES
SAFETY MANAGEMENT SYSTEMS AND QUALITY ASSURANCE

WORKSHOP / SEMINAR ATTENDANCE RECORD

ACTIVITY NAME _____ACTIVITY DATE_____

ACTIVITY VENUE_____

No	NAME	ORGANISATION	POSITION	E-MAIL	PHONE	SIGN

FACILITATOR(S)

Print Name Signature Organization

1. _____ _____ _____

2. _____ _____ _____

3. _____ _____ _____

DIRECTORATE OF AIR NAVIGATION SERVICES
SAFETY MANAGEMENT SYSTEMS AND QUALITY ASSURANCE

SAFETY ACTIVITY ATTENDANCE RECORD
ACTIVITY NAME _____ACTIVITY DATE_____

ACTIVITY VENUE_____

No	NAME	POSITION	PHONE	SIGNATURE

EMPLOYEE SMS RECOGNITION NOMINATION

Nominator's Name: Signature: Date:	Department /Section
Nominee's Name:	Nominee's Department:
Description of action(s) worthy of recognition:	
Date and place observed:	
To be completed by the Safety Review Committee:	
Date received:	Date reviewed:
Additional information:	

Nomination Accepted: Yes or No	Date: Comments:
Award Level Granted:	Date: Comments:
Chairperson's Approval	Date: Signature:

NOMINATION OF TEAM TO CONDUCT SAFETY ASSESSMENT

Department		
Task tittle/ change description		
No.	**NAME**	**Designation**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Head of Department

Name: …….

Signature: ……..

Date: …….

Note: The Head of Department shall notify the nominated team of their task.

DIRECTORATE OF AIR NAVIGATION SERVICES

CHANGE MANAGEMENT FORM

Originator (Name & Title)	System/Equipment Concerned	Date Raised	Reference No
Change Description			
Change Justification (Attach relevant documents if available)			
Back out Plan (What happens if change cannot be made)			
Areas affected by the change			
Costs (if any)	Time (how long to implement change)	Proposed Implementer	

Recommendation and Acceptance

Recommended by (Line Manager):

(Name, Signature and Date)

Accepted by (MSMS/QA): (*The proposed mitigations are sufficient to address the identified hazards)*

(Name, Signature and Date)

CHANGE IMPLEMENTATION SCHEDULE

Change description					
Originator: _____		**Date originated: _____**		**Date approved: _____**	
Name of implementer: _____			**Implementation date _____**		
No.	**Task description**	**Hazard**	**Risk mitigations/ Hazard Controls**	**Date/time implemented (implementer)**	**Approval (Signature, date/time)**

Remarks

a. HoD or her/his designee verifies that proposed hazard control (Risk mitigations/ Hazard Controls) associated with any task is implemented appropriately and in a timely manner prior to proceeding to the next task.
b. Approves implementation of the next task by appending his/her signature, date and time in the approval column besides the proposed hazard control.

NB. Whenever a hazard mitigation control is required at a certain task, implementer should proceed to next task only after HoD or his/her designee has verified implementation of the hazard mitigation control.

Review by safety officer: _____

Datereceived:_____ Reviewed by: _____ Date reviewed: _____

SITUATIONAL REPORT (SITREP)

Serial Number:					
Occurrence Type:		If other (in brief):			
Place/ Position:		Aircraft Operator:			
Date of occurrence:		Aircraft Owner:			
Time of Occurrence:		Departure Point:			
Aircraft Registration:		Destination:			
Aircraft Type:		Persons on board:			
Aircraft Nationality:		Injuries:			
Brief Notes:					
Action Taken:					
Reported By:		Date:		Time	
Remarks:					
Remarks by:		Date:		Time:	

HAZARD IDENTIFICATION REPORT

<table>
<tr><td colspan="3">Name
(optional):</td><td colspan="2">Department/ Section</td></tr>
<tr><td colspan="3">Telephone:</td><td colspan="2">e-mail (optional)</td></tr>
<tr><td colspan="5">The above information is confidential. This portion will be removed from the form and returned to you as a receipt. No record of your identity will be kept. You may be contacted for additional information prior to submitting the information into the SMS process.</td></tr>
<tr><td colspan="5">- -</td></tr>
<tr><td colspan="5">Description of the issue or hazard:</td></tr>
<tr><td colspan="5">Date and place observed:</td></tr>
<tr><td colspan="5">How do you recommend fixing the problem?</td></tr>
<tr><td colspan="5">To be completed by the Safety Manager:</td></tr>
<tr><td colspan="5">Hazard Tracking Number assigned:</td></tr>
<tr><td colspan="3">Investigator assigned:</td><td colspan="2">Date assigned:</td></tr>
<tr><td colspan="5">Action taken by Internal Operational Department:</td></tr>
<tr><td>Actions Accepted:</td><td>Yes or No</td><td>Date:</td><td colspan="2">Comments:</td></tr>
<tr><td>Further Action Required:</td><td>Yes or No</td><td>Date</td><td colspan="2">Comments:</td></tr>
</table>

SYSTEM AND TASK ANALYSIS WORKSHEET

	Task Title:	**Task Location:**
	Analyst Name:	**Date:**

Task Step	**Task Step Description**	**Hazard(s)**	**Hazard Category (OSH/Aviation)**	**Risk mitigations/ Hazard Controls**	**Comments**

HAZARD AND RISK MANAGEMENT REGISTER FOR ANS

S N.	**Hazard**	**Hazard cause**	**System state**	**Description of consequences**	**Risk Assessment**					**Evaluation**
					Current Defences	**Current Risk Index**	**Further Actions to reduce the risks**		**Risk Owner**	**Actual Risk Index**
							Risk mitigations/ Hazard Controls	**Theoretical Risk Index**		

*Evaluation Team Members (**At least two (2)):***

1. Name_____ Signature_____ Date_____

2. Name_____ Signature_____ Date_____

3. Approved by (Line Manager(s)):

(Shall ensure that the proposed mitigations are implemented prior to or during the change as require)

Name _____ Signature_____ Date_____

Next Evaluation Date _____
(*Date when change implementation will be completed*)

Next Review Date _____
(*Review by safety office upon receipt of SMS forms 115b and 122, within 30 days after next evaluation date*)

FOLLOW UP ACTIONS ON SAFETY RECOMMENDATIONS/ RISK MITIGATIONS/CAPs

Date	**Source**	**Additional notes/findings**	**Category**	**Causes/safety issues**	**Cap/ safety recommendations/ risk mitigation**	**Action to prevent recurrence**	**Cap submission date**	**Cap acceptance date**	**Proposed date of completion**	**Action by**	**Status**	**Time taken**	**Remarks**

Name Signature Date

_____ _____ _____

Next Review Date _____

MONITORING EFFECTIVENESS OF SAFETY RISK CONTROLS/CAPs

#	**Source of finding/ safety issue**	**Finding / safety issue**	**Cause(s)**	**Cap / mitigation**	**Action to prevent recurrence**	**Cap / safety issue closing date**	**Monitoring frequency**	**Recurrence (y/n)**	**Remarks**	**Next monitoring date**

Name: _____Signature: _____Date: _____

HAZARD REGISTER

SN.	Type of operation or activity	Description of hazard	Description of consequences	Current/Existing Defences to control safety risks	Further Actions to reduce the risks e.g. Technical, Administrative Defences, Training, etc	Responsible Person

Name:_____Signature:_____Date:_____

Next Review Date _____

DIRECTORATE OF AIR NAVIGATION SERVICES

CORRECTIVE ACTION REQUEST FORM

Department	Location:	Date:	File:
Area Audited/Inspected:			
Auditor/Inspector:		Signature:	
Auditee/Representative:		Signature:	
Part 1: Non-Conformance/Observation Category: (*Major*, *Minor*, *Observation*)			
Reference:			
Part 2: Cause(s) of non-conformity			
Proposed Corrective Action(s) (*indicate the action office*) Proposed date of completion:		Sign:	

Action(s) to prevent Recurrence (Preventive action)
Part 3: Corrective Action Evaluation (Inspector)
SMS Response / Comments: □ CAP Accepted Proposed follow Up: □ On – Site Inspection □ Administrative Action Proposed follow Up Date: ..... □ CAP Rejected New CAP Target Date: ..... Inspectors Name: Signature: Date:
Finding Closed by: Auditor/Inspector: Signature: Date:
Comments:

APPENDIX B: Sample SMS Audit and Internal Evaluation Checklist

These checklists are applicable to all internal audits.

Audit Information	
Person /Team undertaking audit	
Department/Section being audited	
Information Sources	
Documents Reviewed	(list all documents reviewed in course of the audit) Note: This includes all Safety Reports and Safety Checklists pertaining to the operator to be audited for the previous 12 months.
Individuals Interviewed	(list all persons interviewed including title)
Operations Assessed	(list all operations that were observed during the course of the audit- e.g. fuelling of a B-747 on air bridge) Note; For the observation phase of the audit use Safety Checklists.

Management

Is senior management committed to the Safety Management Program?	
Is there a formal safety policy statement?	
Is the safety policy statement endorsed by the Board?	
Is the safety policy statement reviewed and revised at suitable intervals	
Is the safety policy publicized within DANS?	
Are safety performance indicators defined?	
Are levels of safety reviewed to check that they are still appropriate?	
Is the Directorate's SMS readily available to staff?	
Does the safety policy state that each individual has a responsibility for safety?	
Does the safety policy state who is ultimately accountable for safety in the Directorate?	
Does the Directorate have a Safety Manager?	
Does the Safety Manager report directly to Top Management?	
How, and by whom, are internal safety standards and procedures developed?	
Are Safety Standards and procedures reviewed regularly?	
How is non-compliance with directorate safety standards and procedures identified and dealt with?	
How is non-compliance with safety standards and procedures identified and dealt with?	
Are safety accountabilities reviewed after a directorate change has taken place?	
Since DANS is a subsidiary or division of a parent organization, is safety accountability and reporting linked into the parent organization? How?	
Does DANS have a safety committee?	
What processes are in place for staff to raise safety concerns with senior management?	
How, and by whom, are safety improvement suggestions investigated?	
How, and by whom, are all proposed changes to operations or equipment assessed to determine their safety impact?	
Are the roles and responsibilities of the personnel in the Safety Management System documented?	
Are sufficient resources (financial, human, hardware) made available for the Safety Management System?	
Is there an appropriate Emergency Response Plan?	

Safety Risk Management

Is there an effective ongoing hazard identification program?	
Does the hazard identification program include a confidential reporting system?	
Are confidential reports properly de-identified?	
Are hazards associated with contracted agencies included in the Hazard Reporting System?	
Is there a procedure established for acknowledging safety-related reports?	
Is there a process whereby the hazards are continuously assessed for their risk potential (probability and severity)?	
Are the defences against the hazards identified?	
Does the process include the identification of the need for further defences or for	

hazard avoidance?	
Are the results of hazard reports and safety suggestions made available to the initiator?	
Are the results of hazard reports and safety suggestions made widely available within the Directorate?	
Is the process for risk assessment and management fully documented?	
Does the Directorate's Management System require the recording of identified hazards and defences?	

Internal Accident/Incident Investigation

Does a process exist for investigating accidents and/or incidents?	
Is the process investigating safety significant occurrences defined?	
How are accidents/incidents reported? By whom?	
How are reports of Accidents/incidents investigated and recorded? By Who?	
Who decides if corrective action is necessary?	
How are corrective actions monitored to ensure implementation?	
Is there a requirement for safety audits within the Directorate?	
Who determines the need for corrective actions arising from the results of safety audits?	

Training

Is there a supply of safety-related literature (e.g., periodicals, magazines, books, articles, posters, videos) readily available to all staff who have safety responsibilities?	
Are staff encouraged and assisted in attending training courses and seminars related to safety?	
Are staff trained in the procedures and policy of the Safety Management System?	
Are new staff given sufficient training and checking in their technical duties prior to being permitted to operate either supervised or unsupervised?	
Are staff given re-currency training to ensure that they can maintain their competency following periods of significant absence?	
Do staff members receive training prior to the introduction of any new equipment or new procedures?	
Is the continuation of training and checking of all staff adequate?	
Are trainers and checkers adequately trained and checked, both for competence and standardization?	

Supervision

Are safety responsibilities defined for each individual?	
How are the competency requirements determined for safety responsibilities? By whom? Consider equipment operation, driving on airside etc.	
Where are the competency requirements for safety responsibilities recorded?	
How is it decided if a member of staff meets the competency requirements for safety responsibilities?	
How often are staff competencies reviewed to ensure that the staff remains competent for their safety responsibilities?	
What process is followed if it is determined that a member of staff is not fully	

competent for the safety responsibilities assigned?	
Are practices and procedures that affect safety routinely monitored?	
What arrangements are in place to enable detection of safety deviations from policy, standards and procedures?	
Is sufficient staff available to meet current and future operational requirements?	
Is the supervision proportionate to the safety requirements of the practice or procedure?	
Is the level of supervision proportionate to the safety requirements of the unit?	
Does the unit have adequate operational and supervisory staff to provide safe services?	
Have there been any recent changes to procedures or equipment used to perform employee tasks?	
Are practices and procedures that affect safety routinely monitored?	
Are current procedures appropriate for current workloads?	
Are staff well rested before beginning their work?	
What arrangements are in place to enable detection of safety deviations from policy, standards and procedures?	
Do all personnel have valid licenses and ratings in accordance with UCAA Personnel licensing regulations requirements?	
Do all personnel have valid licenses as required by State and local requirements?	

Equipment / Vehicle Maintenance

Is there a procedure for determining if equipment/vehicles meet safety requirements?	
What is the frequency of the equipment/vehicle checks for safety requirements? What is checked?	
What training is given to drivers who operate on airport ramp areas? How is it recorded?	
Who determines the training requirements? What are these requirements based on?	
Who monitors vehicle operation on airport ramp areas to ensure that authorized drivers are following proper safety practices and procedures?	
Do drivers inspect safety systems and equipment in vehicles prior to operation? How is this recorded?	
How are driver reports followed-up? Is a record kept?	
Do staff members have reliable and adequate equipment and systems?	
Is there a procedure for determining if all equipment meets safety requirements?	
Are written records maintained when safety-critical equipment fails? Review all records).	

Engineering & Maintenance

Does the maintenance management system define Critical Systems and equipment that are required for safe operations? Review Maintenance management system documents.	
Are safety critical systems and equipment inspected on a regular basis? How often?	
How are safety critical maintenance deficiencies reported? How are they actioned? How many have occurred in the past 12 months?	
How and who follows up on sub-contractor repairs of safety critical systems and	

equipment?	
If replacement or major repair of safety critical systems is required how is this programmed?	
What authorities are required for the capital replacement of safety critical systems or equipment?	
Are regular condition reports prepared for mission critical equipment noting any safety deficiencies? How are these reports followed-up? By whom?	
Are risk assessments of identified and potential hazards undertaken/ By whom?	
Have any safety incidents/accidents occurred in the previous 12 months where equipment, systems or infrastructure was determined to be a part of the causal factors? How were these followed –up?	
Are vehicles and equipment subject to a check of safety systems on a regular basis? What is the frequency?	

Contractors

Does the contract state that contractors shall satisfy the safety management standards and procedures?	
How are the safety requirements for contractors determined and by whom?	
How, and by whom are safety requirements communicated to the contractors?	
How, and by whom, is it decided whether the contractor has an acceptable SMS in place?	
What procedures are in place to check that contractors comply with the safety requirements?	
How is the competence of contractors' staff checked? Check records re training to utilize equipment, drive on airside etc.	
What arrangements are in place to enable detection of safety deviations from policy, standards and procedures?	
Is the supervision proportionate to the safety requirements of the practice or procedure?	
Are practices and procedures that affect safety routinely monitored?	

APPENDIX C: Safety Culture Survey Questionnaire

Circle the appropriate number (1 to 5) in its box for each of the 25 questions below. If you strongly disagree, circle 1. If you strongly agree, circle 5. If your opinion is somewhere in between these extremes, circle 2, 3 or 4 (for disagree, unsure or agree)

Please respond to every question. Adding all the responses gives a safety culture score for the Organization, which is checked against known benchmarks.

Question Number	STATEMENT	ORGANIZATION RATING				
		Strongly Disagree				Strongly Agree
1	Staff are given enough training to do their tasks safely	1	2	3	4	5
2	Managers get personally involved in safety enhancement activities	1	2	3	4	5
3	There are procedures to follow in the event of an emergency in my work area.	1	2	3	4	5
4	Managers often discuss safety issues with staff.	1	2	3	4	5
5	Staff do all they can to prevent accidents.	1	2	3	4	5
6	Everyone is given sufficient opportunity to make suggestions regarding safety issues	1	2	3	4	5
7	Staff often encourage each other to work safely.	1	2	3	4	5
8	Managers are aware of the main safety problems in the workplace.	1	2	3	4	5
9	All new staff are provided with sufficient safety training before commencing work.	1	2	3	4	5
10	Managers often praise staff they see working safely.	1	2	3	4	5
11	Everyone is kept informed of any changes, which may affect safety.	1	2	3	4	5
12	Staff follows safety rules almost all of the time.	1	2	3	4	5
13	Safety within this Directorate is better than in other Directorate.	1	2	3	4	5
14	Managers do all they can to prevent accidents.	1	2	3	4	5
15	Accident investigations attempt to find the real cause of accidents, rather than just blame the people involved.	1	2	3	4	5
16	Managers recognise when staff are working unsafely.	1	2	3	4	5
17	Any defects or hazards that are reported are rectified promptly.	1	2	3	4	5
18	There are mechanisms in place in my work area for me to report safety deficiencies.	1	2	3	4	5
19	Managers stop unsafe operations or activities.	1	2	3	4	5
20	After an accident has occurred, appropriate actions are usually taken to reduce the chance of reoccurrence.	1	2	3	4	5
21	Everyone is given sufficient feedback regarding this Directorate's safety performance.	1	2	3	4	5

Question Number	STATEMENT	ORGANIZATION RATING				
		Strongly Disagree				Strongly Agree
22	Managers regard safety to be a very important part of all work activities.	1	2	3	4	5
23	Safety audits are carried out frequently.	1	2	3	4	5
24	Safety within this Directorate is generally well controlled.	1	2	3	4	5
25	Staff usually report any dangerous work practices they see.	1	2	3	4	5
26	Information about safety is adequate	1	2	3	4	5
27	Safety information communication channels are effective	1	2	3	4	5
28	Staff receive safety information in a timely manner	1	2	3	4	5
29	Staff receive safety information regularly	1	2	3	4	5
	SAFETY CULTURE TOTAL:					

Notes

Several separate results are obtained from a safety culture survey using this form:

1. A 'benchmark' safety culture score that can be compared with similar companies world-wide.
2. A means of comparing the views of management with those of staff regarding the DANS' safety culture.
3. A means of evaluating the results of any changes made to the Directorate's safety management system when a follow-up survey is carried out.
4. Identification of areas of concern, indicated by "1" and "2" responses which can assist in the allocation of safety resources.
5. A means of comparing the safety culture of different departments and/or operational bases.

The higher the value, the better the safety culture rating. Use the following as a guide only but an average DANS safety culture score of 93 is considered a minimum. Anything less would suggest that improvements are needed.

Poor safety culture	29-58
Bureaucratic safety culture	59-87
Positive safety culture	88-145

Organizations with a poor safety culture treat safety information in the following way:

Information is hidden

Messengers are shot
Responsibility is avoided
Dissemination is discouraged
Failure is covered up
New ideas are crushed

Organizations with a bureaucratic safety culture treat safety information in the following way:

Information may be ignored
Messengers are tolerated
Responsibility is compartmentalised
Dissemination is allowed but discouraged
Failure leads to local repairs
New ideas present problems

Organizations with a positive safety culture treat safety information in the following way:

Information is actively sought
Messengers are trained
Responsibility is shared
Dissemination is rewarded
Failure leads to inquiries and reforms
New ideas are welcomed

APPENDIX D: SMS Phased Implementation Plan

Phase 1 (12 months)	Phase 2 (12 months)	Phase 3 (18 months)	Phase 4 (18 months)
1. SMS Element 1.1 (i):	SMS Element 1.1 (ii):	1. SMS Element 2.1 (i):	1. SMS Element 1.1 (iii):
a) Identify the SMS accountable executive;	a) Establish the safety policy and objectives,	a) Establish a voluntary hazard reporting procedure.	a) Enhance the existing disciplinary procedure/ policy with due consideration of unintentional errors or mistakes from deliberate or gross violations.
b) establish an SMS implementation team;	2. SMS Element 1.2:	2. SMS Element 2.2:	2. SMS Element 2.1 (ii):
c) define the scope of the SMS;	a) define safety management responsibilities and accountabilities across relevant departments of the organization;	a) Establish safety risk management procedures.	a) integrate hazards identified from occurrence investigation reports with the voluntary hazard reporting system;
d) Perform an SMS gap analysis.	b) establish an SMS/safety coordination mechanism/ committee;	3. SMS Element 3.1 (i):	b) integrate hazard identification and risk management procedures with the subcontractor's or customer's SMS where applicable.
2. SMS Element 1.5 (i):	c) establish departmental/ divisional SAGs where applicable.	a) establish occurrence reporting and investigation procedures;	3. SMS Element 3.1 (ii):
a) develop an SMS Implementation plan.		b) establish a safety data collection and processing system for high-consequence outcomes;	a) enhance the safety data collection and processing system to include lower consequence events;
3. SMS Element 1.3:	3. SMS Element 1.4:	c) develop high-consequence	b) develop lower-consequence

		SPIs and associated targets and alert settings.	SPIs and associated targets/alert settings.
a) Establish a key person/office responsible for the administration and maintenance of the SMS.	a) Establish an emergency response plan.	4. SMS Element 3.2:	4. SMS Element 3.3 (ii):
4. SMS Element 4.1 (i):	4. SMS Element 1.5 (ii):	a) establish a management of change procedure that includes safety risk assessment.	a) establish SMS audit programs or integrate them into existing internal and external audit programs;
a) establish an SMS training program for personnel, with priority for the SMS implementation team.	a) Initiate progressive development of an SMS document/manual and other supporting documentation.	5. SMS Element 3.3 (i):	b) establish other operational SMS review/survey programs where appropriate.
5. SMS Element 4.2 (i):		a) establish an internal quality audit program;	5. SMS Element 4.1 (ii):
a) Initiate SMS/safety communication channels.		b) Establish an external quality audit program.	a) Ensure that the SMS training program for all relevant personnel has been completed.
			6. SMS Element 4.2 (ii):
			a) Promote safety information sharing and exchange internally and externally.
SMS Element 1.5: SMS documentation (Phases 1 to 4)			
SMS Elements 4.1 and 4.2: SMS training, education and communication (Phases 1 and thereafter)			
Note 1. — The implementation period indicated is an approximation. The actual implementation period is dependent on the scope of actions required for each element allocated and the size/complexity of the organization.			
Note 2. — The SMS element numbers indicated correspond to the ICAO SMS element numbers. Suffixes such as a), b) and c) indicate that the element has been subdivided to facilitate the phased implementation approach.			

APPENDIX E: Gap Analysis

A gap analysis is conducted against generally accepted SMS concepts and components. This model form provides, in checklist format, information to assist the evaluation of the components of a safety system presently in place, and the identification of those components of an SMS that will need to be developed.

Gap Analysis Form

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
Component 1 — SAFETY POLICY AND OBJECTIVES			
Element 1.1 — Management commitment and responsibility			
1.1-1	Is there a safety policy in place? [5.3.7 to 5.3.15; 5.5.3]	□ □Yes □ □No □ □Partial	
1.1-2	Does the safety policy reflect senior management's commitment regarding safety management? [5.3.7 to 5.3.15]	□ □Yes □ □No □ □Partial	
1.1-3	Is the safety policy appropriate to the size, nature and complexity of the organization? [5.3.7 to 5.3.15]	□ □Yes □ □No □ □Partial	
1.1-4	Is the safety policy relevant to aviation safety? [5.3.7 to 5.3.15]	□ □Yes □ □No □ □Partial	
1.1-5	Is the safety policy signed by the accountable executive? [5.3.7 to 5.3.15; 5.5.3]	□ □Yes □ □No □ □Partial	
1.1-6	Is the safety policy communicated, with visible endorsement, throughout the [Organization]? [5.5.3]	□ □Yes □ □No □ □Partial	
1.1-7	Is the safety policy periodically reviewed to ensure it remains relevant and appropriate to the [Organization]? [5.5.3]	□ □Yes □ □No □ □Partial	
Element 1.2 — Safety accountabilities			
1.2-1	Has [Organization] identified an accountable executive who, irrespective of other functions, shall have ultimate	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	responsibility and accountability, on behalf of the [Organization], for the implementation and maintenance of the SMS? [5.3.16 to 5.3.26; 5.5.2]		
1.2-2	Does the accountable executive have full control of the financial and human resources required for the operations authorized to be conducted under the operations certificate? 5.3.16 to [5.3.26]	□ □Yes □ □No □ □Partial	
1.2-3	Does the Accountable Executive have final authority over all aviation activities of his organization? [5.3.16 to 5.3.26]	□ □Yes □ □No □ □Partial	
1.2-4	Has [Organization] identified and documented the safety accountabilities of management as well as operational personnel, with respect to the SMS? [5.3.16 to 5.3.26]	□ □Yes □ □No □ □Partial	
1.2-5	Is there a safety committee or review board for the purpose of reviewing SMS and safety performance? [5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
1.2-6	Is the safety committee chaired by the accountable executive or by an appropriately assigned deputy, duly substantiated in the SMS manual? [5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
1.2-7	Does the safety committee include relevant operational or departmental heads as applicable? [5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
1.2-8	Are there safety action groups that work in conjunction with the safety committee (especially for large/complex organizations)? [5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
Element 1.3 — Appointment of key safety personnel			
1.3-1	Has [Organization] appointed a qualified person to	□ □Yes	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	manage and oversee the day-to-day operation of the SMS? [5.3.27 to 5.3.33; 5.5.2; Appendix 2]	□ □No □ □Partial	
1.3-2	Does the qualified person have direct access or reporting to the accountable executive concerning the implementation and operation of the SMS? [5.3.27 to 5.3.33; 5.5.2; Appendix 2, 6.1]	□ □Yes □ □No □ □Partial	
1.3-3	Does the manager responsible for administering the SMS hold other responsibilities that may conflict or impair his role as SMS manager? [Appendix 2, 6.4]	□ □Yes □ □No □ □Partial	
1.3-4	Is the SMS manager's position a senior management position not lower than or subservient to other operational or production positions? [Appendix 2, 6.4]	□ □Yes □ □No □ □Partial	
Element 1.4 — Coordination of emergency response planning			
1.4-1	Does [Organization] have an emergency response/contingency plan appropriate to the size, nature and complexity of the organization? [Appendix 3]	□ □Yes □ □No □ □Partial	
1.4-2	Does the emergency/contingency plan address all possible or likely emergency/crisis scenarios relating to the organization's aviation product or service deliveries? [Appendix 3, 4 f)]	□ □Yes □ □No □ □Partial	
1.4-3	Does the ERP include procedures for the continuing safe production, delivery or support of its aviation products or services during such emergencies or contingencies? [Appendix 3, 4 e)]	□ □Yes □ □No □ □Partial	
1.4-4	Is there a plan and record for drills or exercises with respect to the ERP? [Appendix 3, 5 c)]	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
1.4-5	Does the ERP address the necessary coordination of its emergency response/contingency procedures with the emergency/response contingency procedures of other organizations where applicable? [Appendix 3, 4 d)]	□ □Yes □ □No □ □Partial	
1.4-6	Does [Organization] have a process to distribute and communicate the ERP to all relevant personnel, including relevant external organizations? [Appendix 3, 5 d)]	□ □Yes □ □No □ □Partial	
1.4-7	Is there a procedure for periodic review of the ERP to ensure its continuing relevance and effectiveness? [Appendix 3, 5 f)]	□ □Yes □ □No □ □Partial	
Element 1.5 — SMS documentation			
1.5-1	Is there a top-level SMS summary or exposition document which is approved by the accountable manager and accepted by the CAA? [5.3.36 to 5.3.38]	□ □Yes □ □No □ □Partial	
1.5-2	Does the SMS documentation address the organization's SMS and its associated components and elements? [5.3.36 to 5.3.38; 5.4.1; Appendix 4]	□ □Yes □ □No □ □Partial	
1.5-3	Is [Organization] SMS framework in alignment with the regulatory SMS framework? [5.3.36 to 5.3.38; 5.4.1; Appendix 4]	□ □Yes □ □No □ □Partial	
1.5-4	Does [Organization] maintain a record of relevant supporting documentation pertinent to the implementation and operation of the SMS? [5.3.36 to 5.3.38; 5.5.5]	□ □Yes □ □No □ □Partial	
1.5-5	Does [Organization] have an SMS implementation plan to establish its SMS implementation process, including specific tasks and their relevant implementation	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	milestones? [5.4.4]		
1.5-6	Does the SMS implementation plan address the coordination between the service provider's SMS and the SMS of external organizations where applicable? [5.4.4]	□ □Yes □ □No □ □Partial	
1.5-7	Is the SMS implementation plan endorsed by the accountable executive? [5.4.4; 5.5.2]	□ □Yes □ □No □ □Partial	
Component 2 — SAFETY RISK MANAGEMENT			
Element 2.1 — Hazard identification			
2.1-1	Is there a process for voluntary hazards/threats reporting by all employees? [5.3.42 to 5.3.52; 5.5.4]	□ □Yes □ □No □ □Partial	
2.1-2	Is the voluntary hazard/threats reporting simple, available to all personnel involved in safety-related duties and commensurate with the size of the service provider? [5.3.42 to 5.3.52]	□ □Yes □ □No □ □Partial	
2.1-3	Does [Organization] SDCPS include procedures for incident/accident reporting by operational or production personnel? [5.3.42 to 5.3.52; 5.5.4; Chapter 4, Appendix 3]	□ □Yes □ □No □ □Partial	
2.1-4	Is incident/accident reporting simple, accessible to all personnel involved in safety-related duties and commensurate with the size of the service provider? [5.3.42 to 5.3.52; 5.5.4]	□ □Yes □ □No □ □Partial	
2.1-5	Does [Organization] have procedures for investigation of all reported incident/accidents? [5.3.42 to 5.3.52; 5.5.4]	□ □Yes □ □No □ □Partial	
2.1-6	Are there procedures to ensure that hazards/threats identified or uncovered during incident/accident	□ □Yes □ □No	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	investigation processes are appropriately accounted for and integrated into the organization's hazard collection and risk mitigation procedure? [2.13.9; 5.3.50 f); 5.5.5]	□ □Partial	
2.1-7	Are there procedures to review hazards/threats from relevant industry reports for follow-up actions or risk evaluation where applicable? [5.3.5.1]	□ □Yes □ □No □ □Partial	
Element 2.2 — Safety risk assessment and mitigation			
2.2-1	Is there a documented hazard identification and risk mitigation (HIRM) procedure involving the use of objective risk analysis tools? [2.13; 2.14; 5.3.53 to 5.3.61]	□ □Yes □ □No □ □Partial	
2.2-2	Is the risk assessment reports approved by departmental managers or at a higher level where appropriate? [2.15.5; 5.3.53 to 5.3.61]	□ □Yes □ □No □ □Partial	
2.2-3	Is there a procedure for periodic review of existing risk mitigation records? [5.5.4]	□ □Yes □ □No □ □Partial	
2.2-4	Is there a procedure to account for mitigation actions whenever unacceptable risk levels are identified? [5.5.4]	□ □Yes □ □No □ □Partial	
2.2-5	Is there a procedure to prioritize identified hazards for risk mitigation actions? [5.5.4]	□ □Yes □ □No □ □Partial	
2.2-6	Is there a programme for systematic and progressive review of all	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	aviation safety-related operations, processes, facilities and equipment subject to the HIRM process as identified by the organization? [5.5.4]		
Component 3 — SAFETY ASSURANCE			
Element 3.1 — Safety performance monitoring and measurement			
3.1-1	Are there identified safety performance indicators for measuring and monitoring the safety performance of the organization's aviation activities? [5.3.66 to 5.3.73; 5.4.5; 5.5.4; 5.5.5; Appendix 6]	□ □Yes □ □No □ □Partial	
3.1-2	Are the safety performance indicators relevant to the organization's safety policy as well as management's high-level safety objectives/goals? [5.3.66 to 5.3.73; 5.4.5; Appendix 6]	□ □Yes □ □No □ □Partial	
3.1-3	Do the safety performance indicators include alert/target settings to define unacceptable performance regions and planned improvement goals? [5.3.66 to 5.3.73; 5.4.5; 5.5.4; 5.5.5; Appendix 6]	□ □Yes □ □No □ □Partial	
3.1-4	Is the setting of alert levels or out-of-control criteria based on objective safety metrics principles? [5.3.66 to 5.3.73; 5.4.5; Appendix 6]	□ □Yes □ □No □ □Partial	
3.1-5	Do the safety performance indicators include quantitative monitoring of high-consequence safety outcomes (e.g. accident and serious incident rates) as well as lower-consequence events (e.g. rate of non-compliance, deviations)? [5.3.66 to 5.3.73; 5.4.5; 5.5.4; 5.5.5; Appendix 6]	□ □Yes □ □No □ □Partial	
3.1-6	Are safety performance indicators and their associated	□ □Yes	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	performance settings developed in consultation with, and subject to, the civil aviation authority's agreement? [5.3.66 to 5.3.73; 5.4.5.2; 5.5.4; 5.5.5]	□ □No □ □Partial	
3.1-7	Is there a procedure for corrective or follow-up action to be taken when targets are not achieved and alert levels are exceeded/ breached? [5.4.5; Appendix 6, Table 5-A6-5 b)]	□ □Yes □ □No □ □Partial	
3.1-8	Are the safety performance indicators periodically reviewed? [5.4.5; Appendix 6]	□ □Yes □ □No □ □Partial	
Element 3.2 — The management of change			
3.2-1	Is there a procedure for review of relevant existing aviation safety-related facilities and equipment (including HIRM records) whenever there are pertinent changes to those facilities or equipment? [5.3.74 to 5.3.77; 5.5.4]	□ □Yes □ □No □ □Partial	
3.2-2	Is there a procedure for review of relevant existing aviation safety-related operations and processes (including any HIRM records) whenever there are pertinent changes to those operations or processes? [5.3.74 to 5.3.77; 5.5.4]	□ □Yes □ □No □ □Partial	
3.2-3	Is there a procedure for review of new aviation safety-related operations and processes for hazards/risks before they are commissioned? [5.5.4]	□ □Yes □ □No □ □Partial	
3.2-4	Is there a procedure for review of relevant existing facilities, equipment, operations or processes (including HIRM records) whenever there are pertinent changes external to the organization? such as regulatory/industry standards, best practices or technology?	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	[5.5.4]		
Element 3.3 — Continuous improvement of the SMS			
3.3-1	Is there a procedure for periodic internal audit/assessment of the SMS? [5.3.78 to 5.3.82; 5.5.4; 5.5.5]	□ □Yes □ □No □ □Partial	
3.3-2	Is there a current internal SMS audit/assessment plan? [5.3.78 to 5.3.82; 5.5.4; 5.5.5]	□ □Yes □ □No □ □Partial	
3.3-3	Does the SMS audit plan include the sampling of completed/existing safety risk assessments? [5.5.5]	□ □Yes □ □No □ □Partial	
3.3-4	Does the SMS audit plan include the sampling of safety performance indicators for data currency and their target/alert settings performance? [5.4.5; 5.5.5]	□ □Yes □ □No □ □Partial	
3.3-5	Does the SMS audit plan cover the SMS interface with subcontractors or customers where applicable? [5.4.1; 5.5.5]	□ □Yes □ □No □ □Partial	
3.3-6	Is there a process for SMS audit/assessment reports to be submitted or highlighted for the accountable manager's attention where appropriate? [5.3.80; 5.5.5]	□ □Yes □ □No □ □Partial	
Component 4 — SAFETY PROMOTION			
Element 4.1 — Training and education			
4.1-1	Is there a programme to provide SMS training/familiarization to personnel involved in the implementation or operation of the SMS? [5.3.86 to 5.3.91; 5.5.5]	□ □Yes □ □No □ □Partial	
4.1-2	Has the accountable executive undergone appropriate SMS familiarization, briefing or training? [5.3.86 to 5.3.91; 5.5.5]	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
4.1-3	Are personnel involved in conducting risk mitigation provided with appropriate risk management training or familiarization? [5.3.86 to 5.3.91; 5.5.5]	□ □Yes □ □No □ □Partial	
4.1-4	Is there evidence of organization-wide SMS education or awareness efforts? [5.3.86 to 5.3.91; 5.5.5]	□ □Yes □ □No □ □Partial	
Element 4.2 — Safety communication			
4.2-1	Does [Organization] participate in sharing safety information with relevant external industry product and service providers or organizations, including the relevant aviation regulatory organizations? [5.3.92; 5.3.93; 5.5.5]	□ □Yes □ □No □ □Partial	
4.2-2	Is there evidence of a safety (SMS) publication, circular or channel for communicating safety (SMS) matters to employees? [5.3.92; 5.3.93; 5.5.5]	□ □Yes □ □No □ □Partial	
4.2-3	Are [Organization] SMS manual and related guidance material accessible or disseminated to all relevant personnel? [5.3.92; 5.3.93; 5.5.5]	□ □Yes □ □No □ □Partial	

APPENDIX F: Emergency Response Plan Coordination.

Purpose

The purpose is to ensure that the emergency response/contingency plan for the Directorate of Air Navigation Services (ANS) is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its services so that emergency operations are smooth both during and after the emergency.

Responsibility

The operational departments' heads in the directorate of ANS shall develop and implement emergency response/contingency plans in line with guidelines in appendix 3 to chapter 5 of Doc.9589 3rd Edition. The Manager SMS or his/her designee shall ensure that the emergency response plans are adhered to as published and are comprehensive, commensurate to the level of their operations, regularly reviewed, distributed, communicated to all relevant personnel including external organisations and take into consideration emergency response plans of those organizations they must interface with. The SMS department shall review the performance of the emergency response system after a real or mock emergency so as to make recommendations for improvement.

Scope

The procedure covers the coordination of emergency response /contingency plans of ANS with the plans of other aviation stakeholders that are not under jurisdiction of ANS but impact on safety of ANS operations.

References:

i. Annex 19
ii. Applicable edition of Doc.9859
iii. Annexes applicable to the Services provided by departments in ANS

Steps

The heads of operational departments shall;

1. Review the outline of the ERP related to the delegation of authority and assignment of emergency responsibilities.
2. Establish coordination procedures for action by key personnel during the emergency and the return to normal operations.

3. List all stake holder organisations/agencies whose operations affect safety of their operations
4. Obtain copies of the emergency response/contingency plans of all stakeholders in 3 above.
5. Review copies of the emergency response/contingency plans to determine the emergency notification needs (which type of emergency is notifiable, when it shall be notified, by and to whom shall the notification be made, which mechanisms/channels shall be used for notification) and what is expected of the respective department
6. Determine the contact persons for each organisation that are to be involved in the emergency response exercise and identify the lead coordinator.
7. Identify the critical resources required for their departments to accomplish '5' and '6' above
8. Document and display a summary of the stakeholders, corresponding emergencies they may notify, contact persons, critical resources and their role for each emergency that may be notified
9. Perform annual emergency drills to determine emergency preparedness.
10. Document and submit emergency exercise reports for every real or mock emergency exercise to the Manager SMS

NB. A department may adopt alternative mechanism/approach instead of steps (2) – (6) above to accomplish the desired outcome

APPENDIX G: SMS Calendar of Regular Scheduled Events

This table will help to organize those recurring aspects of the SMS that shall be accomplished on a regular basis.

No	Item	Manual Section	Scheduled frequency
1.	Internal audits by SMS department	4.8.2	Annual
2.	Internal safety inspections	4.8.2	Annual
3.	SMS Assessment and evaluation	4.8.4	Annual
4.	External Audit of SMS	4.8.3	Annual
5.	Safety Review	4.2.2	Annual
6.	Emergency Response exercise	Appendix F	Once every two years
7.	Directorate Safety Review committee Meetings	2.4.7	At least once a month
8.	Corporate Safety Review committee Meeting	2.4.8	Quarterly
9.	Safety Action Group meetings	2.4.6	Weekly
10.	Updating hazard register	3.2	Annual
11.	SMS workshops	5.3	Monthly
12.	Follow up of implementation of safety recommendations	Chapter 4	Quarterly
13.	Annual Safety Survey	4.2.4	Annual
14.	Emergency response table top/simulations exercises	2.5 and Appendix H	Annually

Appendix H: SMS Training Programme

This table serves as a guide on how the training needs for all staff categories will be met. However, since SMS training programme and therefore the SMS training plan is implemented based on safety priorities and budget constraints, not all desired training is achieved as planned. Further, advancement to the higher level of responsibility is not necessarily dependant on acquisition of safety competencies through training. This means that any course that might have been missed out at previous level(s) of responsibility may be attained by a particular officer at the new level. The training courses detailed in this program may be named differently depending on the training provider but will contain similar content.

Level	**Specific Positions**	**Category of SMS Accountabilities**	**Required Competences**	**Required SMS Courses/Trainings**	**Desirable Competences**	**Desirable Courses**
Top management	DG, DDG, Corporation Secretary	1. Top Management Commitment 2. Oversight and Control SMS 3. Monitoring Safety Performance	1. The Civil Aviation legislations and management obligations 2. Safety as a strategic business need 3. Safety Culture 4. Risk Tolerance	1. Safety Management for Executives	a) Understand the context and drivers of a Safety Management System b) Differentiate the existing safety management organisation and the new elements of a SMS c) Be able to assess the return on investment for a functioning SMS d) Be able to	a) Integrated Aviation Management System – IAMS b) Any specially customized program or training for executives by the industry

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
					make the proper decisions when allocating resources to safety	
Directors	DANS	1. Monitors Safety Performance 2. Allocation of resources for safety Activities 3. Defines safety strategy 4. Ensures resolution of safety concerns	1. Legal implications of SMS (organizational safety standards and national regulations) 2. Safety Assurance 3. Risk tolerability and Setting safety performance goals	1. Safety Management for Executives 2. Integrated aviation management system 3. Emergency Response Planning	a) SMS overview and Policy formulation b) Safety culture and value c) The push for change d) Front line involvement and committee process e) Response to events and emergencies (i.e. safety decision making that may require accepting financial loss for benefit	a) Accident/Incident Investigation Management b) SMS and QMS processes in ANSPs and CAAs

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
					of Facility/ Organization) f) Implementing change (and the obstacles to change) g) Safety promotion h) Safety Communication	
Manager SMS	MSMS /QA,	1. Internal safety Oversight 2. Plan, coordinate and monitor effective implementation of SMS 3. Monitors the resolution of safety concerns 4. Monit	1. Advanced SMS and Policy – the safety process 2. The push for and manage change 3. Operation of safety management systems 4. Crisis management and emergency respons	1. Integrated SMS 2. Emergency Response Planning & Crisis Management 3. Safety Oversight Managers course 4. Accident/Incident Investigation Management 5. State safety program 6. Aviation quality management 7. Safety	a) Safety culture and value b) Familiarization with aircraft, fleets, types of operations, routes, etc. c) Managing safety databases* d) Legal implications of SMS	a) Corporate Safety Culture and Safety Communication b) SMS Train the Trainer c) Safety and Quality Management Processes in Aviation d) Advanced Safety Management Systems in Aviation e) Team Resource Management

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
		ors directorate Safety Promotion Activities 5. Model and promote positive organisational safety culture 6. Monitor safety committee activities	e planning 5. Accident and incident investigation 6. Safety promotion 7. Investigating safety occurrences 8. Monitoring safety performance - Performing safety assessments 9. Performing safety audits	performance indicators		
Line Managers	MATM, MAIM, MCNS	1. To facilitate effective implementation operational safety require	1. Monitor safety Impact of Changes on operations 2. Investigation and	1. Emergency Response Planning & Crisis Management 2. Safety and Quality Managem	a) Safety culture and value b) Familiarization with aircraft, fleets, types of operations, routes,	a) Corporate Safety Culture and Safety Communication b) Integrated Aviation Management System

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
		ments 2. Participate in Safety performance monitoring (SRC member)	resolution of operational safety incidents 3. Facilitating staff to participate in safety promotion, safety assurance and safety risk management activities. 4. Facilitation of resolution safety concerns	ent System	etc. c) Legal implications of SMS	
Principal SMS officers	PATMO SMS, PAIMO SMS PTO SMS	1. Coordination of SMS Implementation for Air Navigation Services	1. Hazard identification, analysis, assessment and monitoring	1. Safety Investigations and analysis 2. Safety Audits	a. Monitoring safety performance b. Internal safety oversight in operationa	i. Integrated SMS ii. Emergency Response Planning & Crisis Management

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
		2. Coordinate the resolution of safety concerns 3. Monitors directorate Safety Promotion Activities 4. Coordinate promotion of a positive ANS safety culture 5. Coordinate SAG activities	2. Incident and accident Investigation and analysis 3. Change management 4. Safety Auditing and review 5. Safety Assessment 6. Safety performance monitoring 7. Safety communication 8. Safety Training 9. Safety data management and documentation 10. Safety Culture development 11. Hu	3. Advanced SMS 4. SMS Train the Trainer 5. Safety performance Monitoring and Measurement 6. Operational Hazard Identification and Risk Mitigation 7. Developing an Effective Safety Culture 8. State Safety Program 9. Human Factor	l departments c. Managing safety databases * d. Maintaining Acceptable level of safety e. Integration of QMS with SMS in ANS operations	iii. Safety Oversight Managers course iv. Accident/Incident Investigation Management

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
			man factors integration	s in Aviation 10. Aviation quality management		
Principals	PATMO, PTO, PAIMO	1. Effective implementation operational safety requirements and safety concerns 2. Participate in Safety performance monitoring (SRC member) 3. Participate in directorate Safety Promotion	a. Investigating safety occurrences b. Identifying hazards c. Performing safety assessments d. Performing safety audits e. Operational data collection	1. Root Cause Analysis 2. Operational Hazard Identification and Risk Management 3.	a. Monitoring safety performance b. SMS implementation c. Managing Risks in operations d. Operational crisis management	a) Emergency Response Planning & Crisis Management b) Team Resource Management

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
		Activities				
Seniors and Supervisors	SATMO, SAIMO, STO and Supervisors	Safety Action Group	a. Human Factors and Organizational Factors b. Safety audits. c. Performing safety assessments d. Operational data collection e. Identifying hazards	1. ATS Safety Investigation and Analysis 2. Root Cause Analysis 3. Operational Hazard Identification and Risk Management 4. Safety Audits of Air Traffic Services 5. Human Factors in Aviation	a. Monitoring safety performance b. Investigating safety occurrences c. Performing Safety Assessment d. Development of corrective action Plans Managing Risks in operations	a) Safety Audits b) Operational Risk management c) Change Management d) Hazard and Risk Management e) Team Resource Management f) Fatigue Risk Management
Officers	ATMO, TO, AIMO	Safety Reporting and Promotion	a. Basic principles of safety management b. Overview of operational SMS requirements c. Proper safety culture d. Importance of	1. Safety Management System for ANSP 2. Introduction to Human Factors	a. Safety promotion and dissemination of Organization information b. Safety awards programs c. Familiarization of the layout and operations d. Emergenc	1. Root Cause Analysis 2. Hazard Identification & Risk Management 3. Safety Communication

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
			complying with the safety policy and procedures that comprise the SMS e. DANS's past safety record, including areas of systemic weakness f. the safety goals and objectives; g. the voluntary and mandatory reporting syste		y procedures, assembly points, and escape routes e. First aid facilities f. Fire safety	

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
			ms h. Requirement for ongoing internal assessment of organizational safety performance (e.g. employee surveys, focus groups, safety audits and assessments) i. Reporting accidents, incidents and perceived hazards			

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
Trainees and New Staff	ATMO, TO, AIMO trainees and DANS new staff	Safety Reporting		1. Safety Management System for ANS 2. SMS Induction Training		d. Safety Communication
Support Staff	Contractors	Safety Reporting		a. Safety Briefing for Contractors		a. ANS Evacuation Plan

Appendix I: SMS Procedures

1. Incident investigation procedure

Purpose:

To systematically guide the process of establishing root cause(s) of ANS incidents then developing mitigation measures with a goal of preventing recurrence.

Mechanism:

1. Notification of the incident: Shall be notified immediately within 30 minutes by ANS log, Report from pilot/air operator, SITREP, Hazard identification form or another ANS department,
2. Data collection: The supervisor in charge of operations shall immediately:
   a) Organize for the transcript to be prepared within utmost 72 hours from the time of notification.
   b) Properly and fully complete the safety occurrence data form.
   c) Get copies of all flight progress strips.
   d) Require all officers involved to submit reports describing what happened within 24 hours of the occurrence or from the time of notification of the occurrence.
   e) Where necessary conduct interviews with affected officers.
   f) Any other relevant data.
3. Assignment of the investigation team: The respective Head of Department shall conduct or assign competent personnel or notify the responsible personnel/office_to conduct the preliminary investigation.
4. The investigation team/personnel shall:
   a. Review and analyze investigation data,
   b. Identify root causes and contributing factors,
   c. Make conclusions and proposes recommendations to address the findings.
   d. And document the above in the preliminary report.

5. A preliminary report shall be prepared within five (5) calendar days from the time of completion of the transcript. The copies shall be forwarded to DSSER, MFSS (as appropriate), MATM, MANSAS and MSMS/QA. The supervisor operations shall:
   a) Conduct a debrief involving all officers on the shift/units at the time of occurrence.

b) Forward debrief report signed by all participants to MSMS/QA.

c) Implement recommendations of the preliminary report that are of operational nature and likely to directly impact on the ATS or Safe Aircraft Operations.

d) Forward the preliminary report to the Safety office.

6. The Safety Office shall:

a) Review the preliminary report and make a final draft report within 20 calendar days.

b) Forward the draft final report to the supervisor/principal concerned for review.

c) Compile the final incident report after review of the draft report.

d) Share copies of final incident report with DANS and the respective department head.

e) Share the findings with the safety office of the affected operators.

NB: *The preliminary report may be adopted as the final investigation report with justification and MSMS/QA shall review or assign competent personnel to review the preliminary report and prepare the final investigation report*

7. The Safety Office shall monitor the implementation of the safety recommendations from the incident investigation using SMS form 123.
8. SMS form 124 shall be used by the Supervisors/Principals and Safety Office to monitor effectiveness of the safety recommendations.

Note:

a) All reports/information shall be handled with utmost confidentiality at all levels.

b) Debriefs shall be conducted at a time other than at a time when participants are on duty as per roster to ensure the presence of all controllers on the affected shift.

Checklist A: Identifying deficiencies with respect to organizational and management factors

Issue	Probes
Practices: Were activities observed in occurrence investigation consistent with DANS's philosophy, policies, and procedures with respect to safety?	a) How consistent were practices with safety philosophy, policies, procedures and desired practices? b) How does management ensure that all employees implement procedures (safety and operational) in the same manner? c) What does management do to ensure that procedures are being correctly and consistently used (e.g. recurrent training, supervised work, feedback from information gathered)?
Procedures: Has management developed clear procedures on how tasks will be accomplished?	1. Has management developed procedures relating to safety (in all departments including operations, training, and maintenance)? 2. Are safety procedures in concert or conflict with DANS's philosophy and policies? 3. How does management implement these procedures? 4. How does management communicate these procedures? 5. Are the procedures documented? 6. Are the procedures current and complete? 7. Are the procedures readily available? 8. Are these procedures in concert or competition with production goals (schedules, etc.) 9. Are procedures revised to ensure they reflect operational changes (new equipment, new regulations etc.)? 10. Is there a feedback loop to inform management on difficulties with procedures?
Policies: How does management expect tasks to be accomplished?	1. What are DANS's policies relating to safety? 2. Are company policies documented through procedures, checklists, manuals, and instructions? 3. Are employees required to attend educational and training programs that foster safety? 4. Has management set clear safety objectives? 5. Are these policies in conflict or competition with production goals?

	6. How are these conflicts resolved? 7. Are company policies in concert or conflict with DANS's safety philosophy?
Philosophy: How does management want DANS to run?	1. Are there full-time resources dedicated to safety issues (e.g. safety officer, budget)? 2. How does senior management communicate its philosophy of operations? 3. Are there well-documented and widely distributed mission statements pertaining to safety? 4. Are there clear lines of authority (safety officer directly reporting to CEO)?

Checklist B: Explaining the gaps/deficiencies

Condition	Probes
Knowledge and training	1. Is there a strategic plan for training that meets individual and organizational needs? 2. What is the training budget? 3. What type of training programs are in place? 4. Are safety skill audits and needs analyses performed? 5. Are safety critical task components sufficiently trained during initial and regular refresher training?
Priorities	1. Do employees perceive that they are genuinely involved in decision making in respect of management action affecting them? 2. Are systems designed to allow employees to express safety concerns without fear of consequences (e.g. are accidents and mistakes punished, or are they examined as learning experiences and there is joint problem solving)? 3. Are employee motivations towards taking specific risks understood by management, and is management developing strategies to reduce these pressures? 4. Are there inconsistent or conflicting messages on safety (management turning a blind eye, or incentives for behaviour that is not in line with official policy)? 5. Are management decisions motivated by a reasonable balance between safety and production?
Practices and adaptations	1. What information has been gathered from management and employees which suggests practices are not

	consistent with procedures? 2. Does management have a reliable and valid method for observing actual practice? 3. Is adaptation observed an individual occurrence or is it consistent with group norms (common practice)? 4. Are there sanctions for non-compliance or does management turn a blind eye? 5. What mechanism is in place for assessing the validity of the adaptation? Are changes made to procedures to incorporate adaptations where appropriate?
Perception of risk	1. Are management and employees educated on risk perception and risk management? 2. Is full and understandable information about risks communicated to employees (e.g. safety campaigns, use of case studies, sharing of all information on risk between employees and management)?
Safety critical jobs	1. Has management determined which positions within DANS are critical to safety (i.e. carry greater risk of harm in the event of poor performance)? 2. Is specific training and monitoring in place to ensure that individuals in safety critical positions are capable of performing at an acceptable level?
Understanding and mitigation of human error	1. Is management educated about the concept of "latent errors" (i.e. their own role in safety and risk factors)? 2. Is user feedback used in the design of new systems? 3. Is there a systematic approach to the identification of human error in work systems (are human error data collected, analysed, controls implemented, and their effectiveness monitored?) 4. Does risk management incorporate human error (ergonomic design or strategies to reduce the impact of error) 5. Are resources (time, people, and money) devoted to user acceptability trials?
Risk management	1. Is the risk management function integrated within the overall management structure, with a status commensurate with other management functions? 2. Are upcoming changes (technology, staffing levels, mergers, equipment, regulations, etc) considered in terms of risk management?

Communication	1. Does DANS structure permit good flow of information? 2. Is there a feedback system where information can go up, down, and across all layers of DANS? 3. Are perceptions of safety and risk management from senior management, line management, and employees consistent?
Organizational structure	1. Are lines of authority, responsibility, and accountability clear? 2. Does the structure permit good flow of information?
Supervision	1. Is there a documented supervisory program and is it workable? 2. What are the supervisory duties? 3. What is the supervisor-worker ratio and is it reasonable? 4. How often does a supervisor discuss performance with an employee? 5. What percentage of time is the supervisor performing "supervisory duties"? 6. Do supervisors encourage or turn a blind eye to practices that are not in conformance with procedures and policies?
Staffing and work schedules	1. What amount of overtime is accrued? Is this within reasonable expectations for a safe workplace? 2. Are any positions unfilled or being combined with another job? If so, what is the impact on safety? 3. What are the work schedules? How do these schedules compare to best practices with respect to safety?
Near-miss reporting system	1. Is there a near-miss incident reporting system which involves everyone in DANS? 2. Is anyone using it? 3. Is it making any impact (has anything changed because of it)? 4. What barriers exist to people using it? How are these being addressed? 5. What is DANS's response to issues raised in accident or incident investigations - denial, repair or reform?

2. Mechanism for coordination between ANS SMS and SMS of External organizations

Purpose
To streamline the application of effort and resources to achieve common safety objectives

Scope
The mechanism shall apply to the external organisations specified in the SMS implementation plan appendix 3 and the areas of coordination shall be the safety interfacing areas applicable to specified external organization.

Mechanism steps

i) Determine the external organizations SMS that shall interface with the ANS SMS.
ii) Determine the safety interface areas applicable to each specified external organization SMS.
iii) Notify them of any of our activities or operations that may affect safety of their operations
iv) Request the External organisations to share information regarding their activities or operations that may affect safety of ANS operations
v) Document all correspondences, minutes of coordination meetings and issues coordinated.

3. Mechanism of establishing a coherent set of objectives

Purpose
To guide the development of safety objectives in line with the organizational policy, aspirations, regulatory requirements and global/regional trends.

Scope
The process shall apply to establishment of ANS safety objectives, CAA Uganda.

Process

i) Review the regional/international trends.
ii) Review organizational objectives and initiatives.
iii) Develop SMART objectives basing on the results from (i) and (ii) above.
iv) Document the set of objectives developed.
v) Develop the distribution list for the set of objectives.

4. Mechanism to ensure safety objectives are published and distributed

Purpose
To disseminate a common safety direction for consideration of synergies towards improving safety.

Scope
Applies to all safety objectives and shall be communicated to all personnel in the ANS directorate.

Steps

i) Ensure that the SMS manual has been approved by the Accountable executive.

ii) Ensure that copies of the SMS manual are distributed as per the distribution list in the manual distribution list
iii) Determine the other audiences to which the safety objective may apply
iv) Determine the other means (other than the manual) of dissemination of the safety objectives to target audiences.
v) Disseminate the objectives using the alternatives in (iv) above and use a checklist to confirm receipt of the objectives.
vi) Where possible obtain evidence of receipt of disseminated safety objectives.
vii) Maintain records of receipt of safety objectives.

5. Mechanism to ensure the setting of alert levels/out of control criteria is based on objective safety metrics

Purpose
To develop alert levels based on objective safety metrics

Scope
Shall apply to all safety performance indicator alert levels applicable to ANS SMS

Steps
i) Determine the safety performance indicators
ii) Define appropriate objective safety metrics to be used in determining the alert levels.
iii) Define alert levels for each performance indicator using the chosen objective metrics (e.g. standard deviation, variance etc)
iv) Document the alert levels defined in (iii) above and maintain records.
v) Determine the review period for alert levels for each performance indicators.

6. Mechanism to ensure periodic review of safety performance indicators

Purpose
To maintain safety performance indicators, appropriate to the operations which help in determining the level of safety at any given time.

Scope
The mechanism shall be applicable to the safety performance indicators related to ANS operations during a defined period of time.

Steps

i) Determine the safety performance indicators for ANS operations for a given period of time.
ii) Determine the maturity period of each safety performance indicator or as appropriate.
iii) Assign a review period for each safety performance indicator

iv) Pin-up a chart indicating the review due dates for each performance indicator for the entire period in (i) above.
v) Review safety performance indicators on dates in (iii) above.
vi) Document the reviews and indicate the new dates for the review of each safety performance indicator.
vii) Repeat (v) and (vi) for the entire period set in (i) above.
viii) Assign a safety performance indicator or a set of them to an individual who shall monitor and ensure that review is done.
ix) Repeat (i) – (Viii) at the end of the period in (i) above.

7. Procedure for corrective or follow up action to be taken when targets are not achieved and alert levels are breached.

Purpose:
To ensure prompt and appropriate action is taken wherever alert levels are breached or safety targets not achieved.

Scope:
Applicable to inspection/audit findings, recommendations from incident investigations, unachieved targets, breached alert levels and all the occurrences that require remedial action to maintain the acceptable level of safety.

Steps:
i) Document all issues/safety concerns that require remedial action to be taken to return to acceptable levels.
ii) Develop corrective action plan for each of the issues in (i) above
iii) Attach achievement time lines for each of the corrective action plan in (ii) above.
iv) Assign individuals responsible for implementing the CAPS
v) Assign dates/time lines for reviewing progress of implementation of CAPS
vi) Attach evidence/method of verification of effective implementation of the CAPS and how the issue shall be closed.
vii) Assign an individual to monitor the effective implementation and follow up the CAPS
viii) Develop an escalation plan in case the initial level of implementation is not achieved or ineffective.
ix) Document the CAPS implementation and monitoring with all evidences.

8. Mechanism for development of safety performance indicators and associated performance settings.

Purpose:
To determine the safety performance and implementation levels at any time basing on the agreed targets.

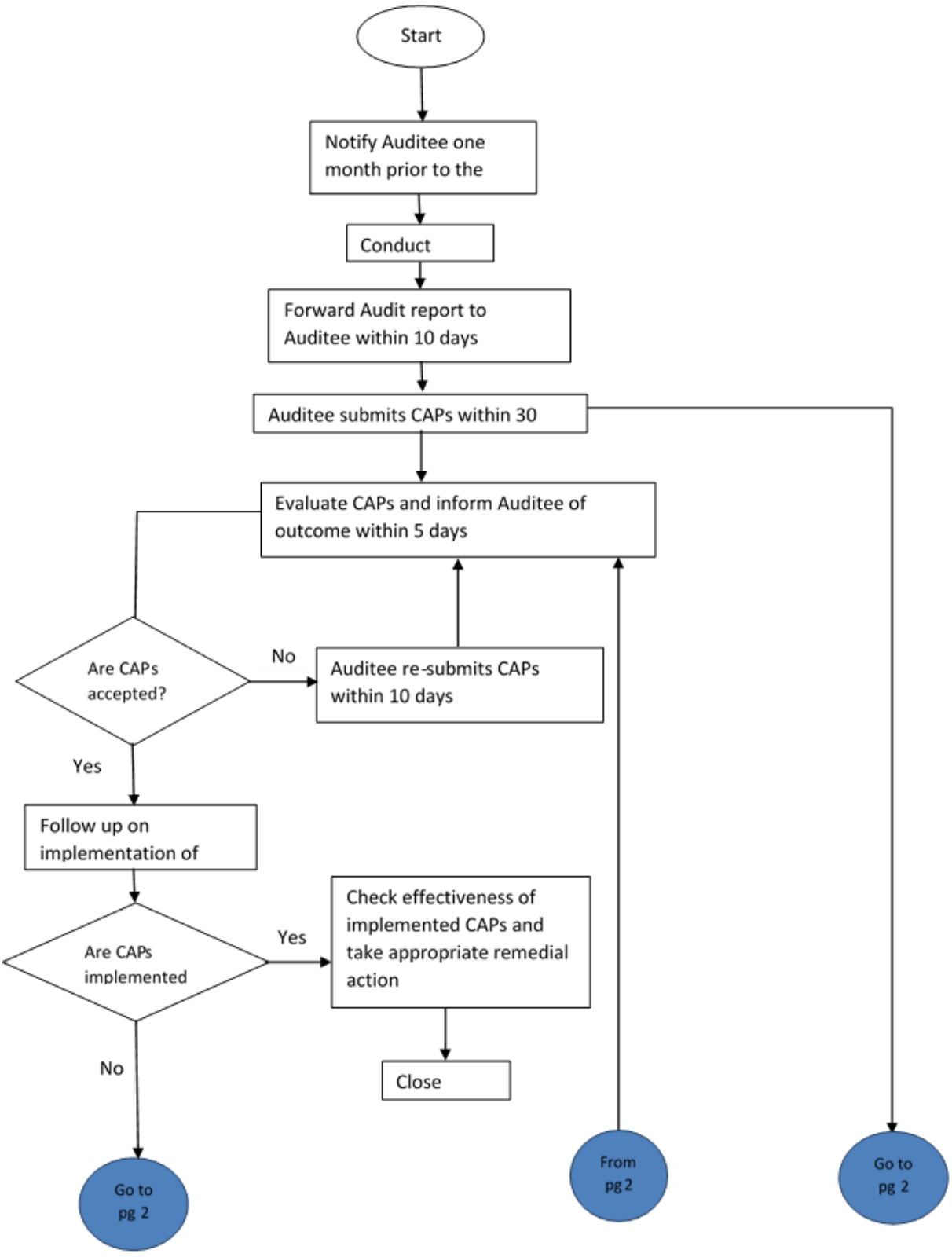
Scope:

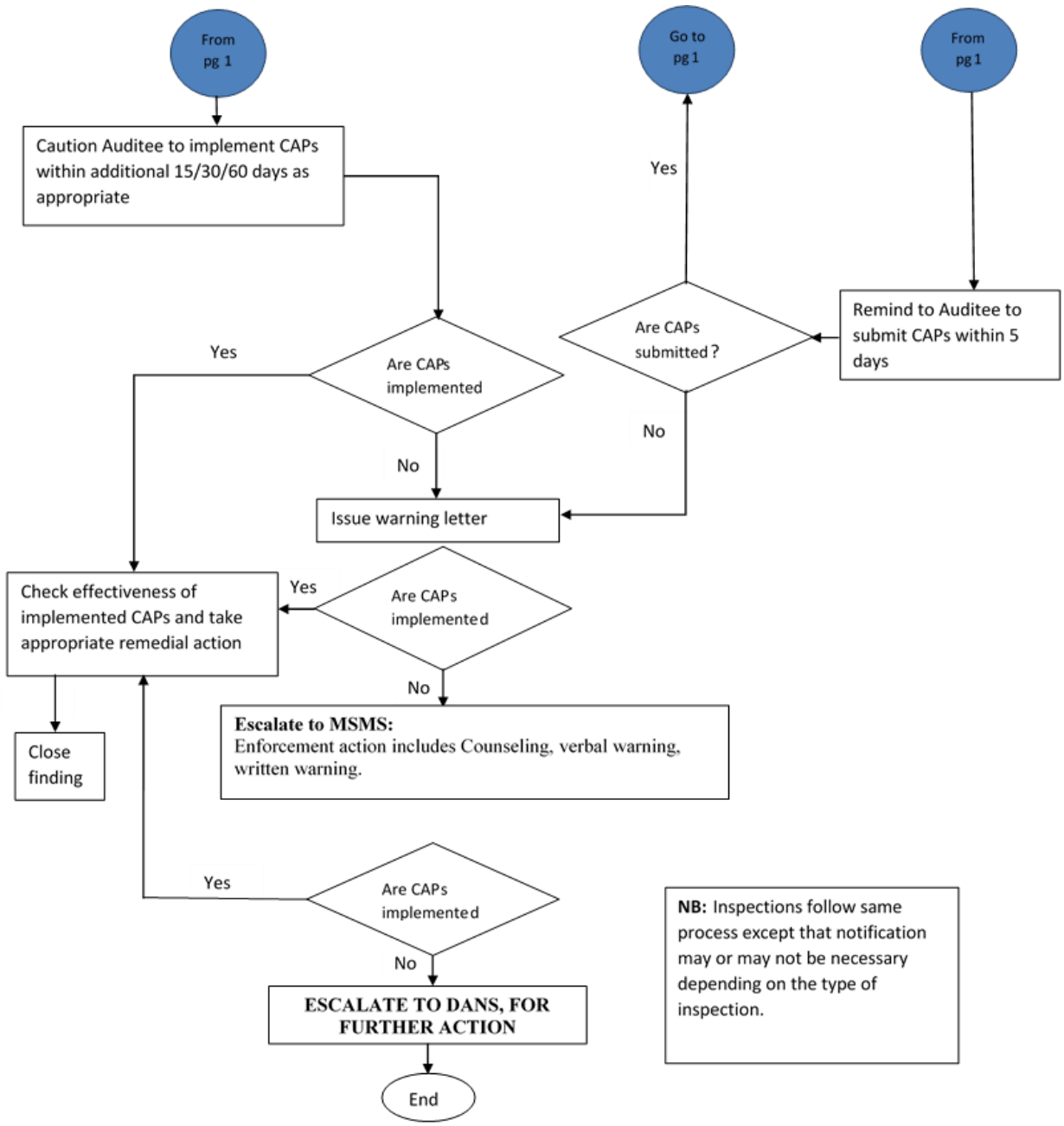
Applies to all safety performance indicators and performance targets associated with safety activities.

Steps:

i) Develop safety database/records structure described in SMS manual section 4.2.
ii) Determine the safety data metrics that may be applied to analyse and assess the system.
iii) Analyse the data to determine the areas of improvement.
iv) Determine/define improvement objectives/goals.
v) Define safety improvement activities.
vi) Develop safety performance indicators for each of the activities.
vii) Determine the method of verification of each of the performance indicators.
viii) Determine the time frame and the measurable output for each of the activities.
ix) Assign a responsibility to an individual to ensure that the targets are achieved.
x) Develop an escalation plan in case the targets are not achievable within the means of the department.

9. Procedure for conducting internal audits


Start
Notify Auditee one month prior to the
Conduct
Forward Audit report to Auditee within 10 days
Auditee submits CAPs within 30
Evaluate CAPs and inform Auditee of outcome within 5 days
Are CAPs accepted?
No
Auditee re-submits CAPs within 10 days
Yes
Follow up on implementation of
Are CAPs implemented
Yes
Check effectiveness of implemented CAPs and take appropriate remedial action
Close
No
Go to pg 2
From pg 2
Go to pg 2



10. **Mechanism to ensure implementation of SRC decisions and recommendations**

i) Develop a task and action table appended to the SRC minutes.
ii) The SRC secretary follows up with action points/persons before the next SRC.
iii) Review and update tasks during SRC meetings.
iv) Append updated task and action table to the SRC minutes.

11. Mechanism for implementation and validation of effectiveness of safety risk controls

Purpose
To guide the follow up on implementation, modification and effectiveness of safety risk controls corrective action plans (CAPS) and safety recommendations.

Scope
The procedure covers the all safety mitigations/remedies recommended during Safety Risk Management, safety investigations, development of CAPS from audits and inspections and safety review meetings,

Responsibility
The manager safety management systems DANS or his/her designated representative shall be responsible for monitoring the appropriateness, implementation and effectiveness of the safety risk controls.

Steps

1. Obtain risk controls/Corrective actions/safety recommendations from incident investigations, hazard management, audit/inspection reports, safety reviews and SRC/SAG minutes.

2. Fill the SMS form 123 as appropriate

3. Arrange quarterly meetings/engagements with appropriate department or section to provide update on status of implementation on each risk control and update SMS form 123 as appropriate

4. Prepare follow up report and present it to the SRC

5. Review operational logs, hazard reports/safety reports to identify safety issues.

6. Analyse the identified safety issues to determine their potential causes.

7. Review the potential causes of the previously mitigated safety issues with reference to potential causes in (6) above to identify re-occurring causes.
8. List the previous mitigations with re-occurring causes using SMS form 124. All previous mitigations that have re-occurring causes represent safety issues whose mitigations/CAPs were not effective (eroded or was not adequate)

9. Review safety issues whose mitigations/CAPs were not effective and develop new or modify the associated risk mitigations/CAPs.

10. Implement the new or modified mitigations/CAPs in (9) above and repeat steps (1) to (9)

12. Mechanism for Management of Hazards

Purpose

The purpose of this plan is to document the process of hazard management so that hazards are identified and evaluated using an identical criterion.

Scope

This plan covers all hazards that arise due to operations of the Air Traffic management, Aeronautical Information Management, Communications, Navigation and surveillance within the Entebbe Flight Information Region. The category scope of hazards shall include but not limited to aviation hazards, Occupational Safety and Health and Environment (OSHE) hazards

Sources of hazards

The hazards shall be determined from the following sources.

1. Incident analyses
2. Issue and hazard report forms
3. Situational reports
4. Client /customer complaints
5. Operational safety logs
6. Specialist advice
7. Audit, Inspection, and survey reports
8. Monitoring of "day-to-day" normal operations and environment reports
9. Industry reports

Hazard Categories

The following hazard/issue categories shall be adopted for now;

1. Aviation hazards (AV)

Any hazard/issues that can have an impact (whether directly or indirectly) on the operational safety of aircraft or aviation safety-related equipment, products and services should be deemed pertinent to an aviation SMS.

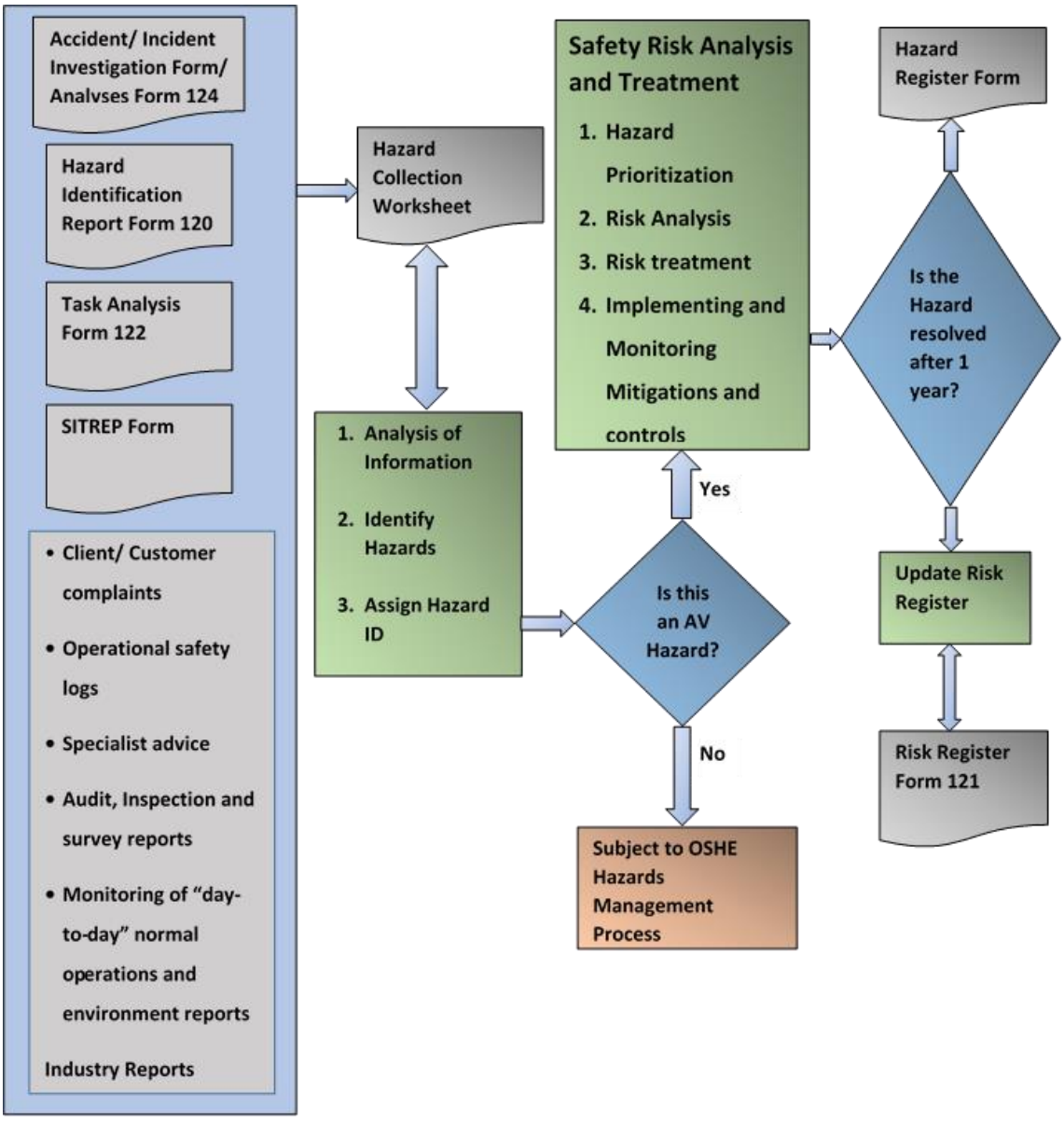
2. Occupational Safety Health and Environment (OSHE) Hazards

Hazards/issues related to the safety, health and welfare of people engaged in work or employment. The purpose of reviewing occupational safety and health issues/hazards include fostering a safe and healthy work environment.

STEPS FOR HANDLING HAZARDS/ISSUES

1. Collect information from all available sources of hazards.
2. Send acknowledgement of receipt of information to the source as appropriate.
3. Analyse collected reports/information and identify hazards.
4. Categorise hazards and assign hazard tracking number for each hazard identified (HZD/A-001/14 for aviation (AV) hazard number 001 in 2014 or HZD/O-001/14 for Occupational Safety, health and environmental (OSHE) hazard number 001 in 2014).
5. OSHE hazards shall be forwarded to appropriate offices for further action while the AV hazards shall be subjected to the SRM process.
6. The AV Hazards shall be ranked/prioritised for purposes of determining the order in which they are taken through the Safety Risk Management process. The ranking/ prioritisation shall depend on the number of persons likely to be affected and/or associated financial costs. A hazard representing a threat to the greatest number of people and /or highest associated financial cost will be subjected to the SRM process before the others.
7. Complete the Safety Risk Management Process for each AV hazard using a pre-determined methodology (Complete SMS form 121) that shall be conspicuously be pinned on the notice board in the SMS office.
8. The risk register shall be reviewed regularly to determine the continuous effectiveness of the mitigation controls.
9. All AV hazards that still appear at the close of the year in the risk register will be transferred to the hazard register (SMS Form 125)

SCHEMATIC FLOW OF THE HAZARD MANAGEMENT PLAN



13. Procedure for management of change before introduction of new technologies, new procedures or system changes that affect aviation operations

Purpose

The purpose of this procedure is to guide the management of change process whenever there are pertinent changes to operations/processes, procedures, airspace re- organisation, facilities/equipment/software, activities potentially hazardous to aircraft operations, key safety personnel or pertinent changes external to DANS, such as regulatory/industry standards, best practices or technology.

Responsibility

The department head where the change is to take place shall be accountable for implementation of this procedure.

The section heads shall monitor and recommend changes to the safety manager or his/her designee for acceptance prior to implementation.

Steps

i. The departmental heads shall identify any proposed new technologies, procedures or system changes and notify the safety manger accordingly using email or memo.

ii. The departmental heads shall then formally nominate a team using SMS Form 115 (UCAA/DANS/SMS/FORM 115) to carry out a safety review of the proposed new changes using SMS form 121 (UCAA/DANS/SMS/FORM 121) to identify all potential hazards to the system introduced by the change.

iii. The identified hazards shall then be broadly categorised into Safety hazards or OSHE hazards or Enterprise.

iv. The Aviation hazards shall then be extracted from the form 121 and subjected to a Safety Risk Assessment using SMS form 122 (UCAA/DANS/SMS/FORM 122) in which the actual risk index column shall be left blank and filled at step (xi).

v. Appropriate mitigations shall be proposed to ensure that the risk is acceptable to the system in accordance to the on risk ratings in paragraph 3.7.

vi. The OSHE hazards will be forwarded to the relevant office(s) for appropriate follow up action.

vii. After the Safety assessment, the team shall fill the change management form 115 (a) (UCAA/DANS/SMS/FORM 115(a)) describing the change, justification, areas affected by the change and back out plan if the change is unsuccessful.

viii. The draft forms 121, 122 and 115 (a) shall then be presented to the Safety Action Group (SAG) for review prior to endorsement by the department Manager.

ix. After endorsement by the department manager, the change management forms 121, 122 115 and 115 (a) shall then be submitted to the Safety manager for acceptance.

x. The original copy shall be kept in the department and duplicate copy with the SMS office.

xi. HoD or her/his designee shall monitor and ensure implementation of the proposed hazard mitigation controls (technical and administrative defence) using SMS form 115 (b) UCAA/DANS/SMS/FORM 115(b).

xii. The actual risk index column in form 122 shall be filled after implementation of the change (stipulated next evaluation date).

xiii. Completed SMS forms 115(b) and 122 (in xii above) shall be submitted to safety office immediately after implementing the change for review.

APPENDIX J: Key Job Functions for Elements of the SMS Functional Chart and other staff categories

1. The Accountable Executive - Director General (DG)

The Director General is the accountable executive who has ultimate authority over the safe operation of the organization. S/he is accountable for the organization's safety risks and has final responsibility for the resolution of all safety issues. The Director General is specifically responsible for; -

a. Providing resources needed for the effective and efficient performance of SMS in the organization.
b. Convening/chairing the Corporate Safety Review Committee meetings.
c. Establishing and facilitating implementation of the safety policy
d. Promoting safety as a core organizational value.
e. Ensuring that the SMS is properly implemented and maintained.
f. Facilitating timely implementation of CAPs, safety recommendations and risk mitigation controls.

2. Director Air Navigation Services (Accountable Manager)

The Director is accountable for the Directorate's safety performance and contribution of the directorate towards the overall safety performance of the organization. The director is responsible for;

a. Actively participating in Corporate Safety Review Committee meetings.
b. Convening the Directorate Safety Review Committee meetings
c. Facilitating directorate safety promotion activities.
d. Facilitating development and/or implementation of safety policy and objectives
e. Fostering a positive safety culture within the directorate.
f. Facilitating timely implementation of CAPs, safety recommendations and risk mitigations.
g. Allocating the resources for SMS operations within the directorate by;-
    i) Availing staff required for safety office, safety audits/inspections, trainings and workshops, and other SMS activities.

ii) Ensuring appropriate budget and training plan provisions for SMS implementation and operation.

iii) Providing a conducive working environment and tools for SMS implementation and operation.

iv) Committing time for SMS implementation and operation activities e.g. avoid planning activities on dates/times with/known scheduled SMS activities.

h. Promoting voluntary and mandatory reporting of hazards within the directorate.

i. Facilitating development of safety performance indicators and targets in the directorate.

3. Corporate/Directorate Safety Review Committee (SRC).

The CSRC/DSRC provides a formal process for CAA/DANS to assess the effectiveness and efficiency of any mitigation strategies used to achieve the agreed safety performance targets of the organization. The CSRC/DSRC provides a platform to achieve the objectives of resource allocation and to assess the effectiveness and efficiency risk mitigation strategies. The CSRC /DSRC is responsible for

a. Monitoring:

i) The effectiveness of the SMS.

ii) That necessary corrective action is taken in a timely manner.

iii) Safety performance against the organizations/DANS safety policy and objectives.

iv) The effectiveness of the organization's/DANS safety management processes.

v) The effectiveness of the safety supervision of subcontracted operations.

b. Ensuring that appropriate resources are allocated to achieve safety performance beyond that required by regulatory compliance.

Note: Corporate SRC fulfils the above at Organization level while Directorate SRC fulfills at directorate level.

4. Line Manager

a. Members of the DSRC

b. Members of the CSRC

c. Ensure development and implementation of safety CAPS, recommendations and risk mitigation controls within respective departments.

d. Ensure changes within their respective department are subjected to the management of change process prior to implementation.

e. Ensure timely implementation of CAPs from safety audit/inspection and risk mitigation controls from other departments/directorates as needed.

f. Ensure safety policy is understood by department staff.
g. Facilitate and participate in the implementation of the safety policy.
h. Facilitate staff in respective department to participate in safety promotion, safety assurance and safety risk management activities as appropriate.
i. Promote voluntary and mandatory reporting of hazards within the department.

5. Safety Manager - Manager SMS/QA

a. Prepare SMS implementation plan, coordinate and monitor its implementation.
b. Monitor and review implementation of safety policy and objectives within the directorate.
c. Monitor/facilitate hazard identification, safety risk assessment and mitigation.
d. Develop and maintain directorate hazard register.
e. Provide periodic reports on organisation's safety performance.
f. Develop and maintain SMS documentation and records.
g. Plan for and facilitate staff aviation safety awareness and training.
h. Provide independent advice on safety matters.
i. Monitor safety concerns in the aviation industry and their perceived impact on the organization's operations.
j. Coordinate and communicate (on behalf of the directorate) with the State's oversight authority and other State agencies as necessary on issues relating to safety.
k. Coordinate and communicate (on behalf of the directorate) with international organizations on issues relating to safety.
l. Disseminate and articulate safety related information to management, organizational staff, contractors and stakeholders through established communication processes.
m. Conduct/coordinate ATS incident investigation.
n. Analyse directorate safety data for trends related to hazards, events and occurrences.
o. Coordinate/conduct safety audits/inspections, safety reviews and safety studies.
p. Coordinate/administer safety related surveys.
q. Monitor the management of and approve changes.
r. Ensure development and implementation of safety CAPS, recommendations and risk mitigation controls within the SMS department
s. Monitor development and implementation of safety CAPS, recommendations and risk mitigation controls within the directorate.
t. Review and present to management the status of implementation of CAPs, risk mitigation controls and safety recommendations.
u. Review and compile safety reports for the SRC/B.
v. Facilitate and monitor directorate safety committee activities.
w. Participate in the development and review of emergency response plan.
x. Coordinate emergency response exercises.
y. Represent the organization on government, international organization and aviation safety industry committees (e.g. ICAO, IATA, CANSO, etc.)
z. Model and promote an organizational safety culture that fosters safety practices through effective leadership.

6. Safety Action Group

a. The duties and responsibilities of Safety Action group (SAG) shall include, but not necessarily limited to;
b. Oversees operational safety performance within the functional areas of the organization and ensures that appropriate safety risk management activities are carried out with staff involvement as necessary to build up safety awareness;
c. Coordinates the resolution of mitigation strategies for the identified consequences of hazards and ensures that satisfactory arrangements exist for safety data capture and employee feedback;
d. Assesses the safety impact related to the introduction of operational changes or new technologies; coordinates the implementation of corrective action plans and ensures that corrective action is taken in a timely manner;
e. Reviews the effectiveness of previous safety recommendations;
f. Oversees safety promotion activities as necessary to increase employee awareness of safety issues and to ensure that they

7. Principal officers

a. Members of DSRC
b. Members of SAG
c. Develop, implement, track and document implementation of CAPs in respective section.
d. Implement, track and document implementation of risk controls / mitigations within his/her section.
e. Report potential hazards, safety occurrences, etc.
f. Facilitate staff under their supervision to participate in aviation safety activities.
g. Participate in safety communication within their section.
h. Initiate management of change for changes within respective sections
i. Participate in safety assessments within the respective section.
j. Prepare safety assessment reports for their respective section.
k. Report on the effectiveness of CAPs, risk mitigation controls and safety recommendations within respective section.

8. Safety personnel - Principal SMS officers

a. Coordinate implementation and operation of SMS within respective department.
b. Participate in and Monitor the implementation of the safety policy and objectives in the respective department
c. Advise MSMS/QA on SMS related issues in respective department.
d. Coordinate/participate in the directorate Safety Risk Management (SRM) activities.
e. Coordinate/participate in the preparation and update the directorate's hazard register.
f. Coordinate/participate in the development and monitor implementation of Corrective Action Plans (CAPS) from Audits and Inspections as well as safety recommendations for the directorate.

g. Coordinate/participate the Change Management process for directorate.
h. Coordinate/Participate in the preparation and implementation of SMS/QA department budget and training plan.
i. Coordinate and participate in directorate ATS incident investigations.
j. Monitor implementation of safety recommendations from ATS incident investigations.
k. Participates in Risk assessment and mitigation of respective department safety risks.
l. Monitor change management in respective department.
m. Collect and analyse safety data/information from respective department.
n. Conduct safety audits/ inspections.
o. Review and/or accept respective department CAPs.
p. Monitor implementation and review effectiveness of CAPs, risk mitigation controls and safety recommendations in respective department.
q. Follow-up and Review respective department safety assessments.
r. Monitor and review respective department safety investigations.
s. Ensures that respective department staff are aware of safety-critical information and areas that require special attention/care.
t. Promote participation of respective department staff in safety management activities.
u. Update SMS documentation and records.
v. Participate in safety reviews, safety studies and safety surveys.
w. Participate in the development and implementation of the SMS/QA department budget and training plan.
x. Compile information for safety communication (SMS safety Electronics display, safety publications, etc.).
y. Coordinate and facilitate SMS workshops
z. Review respective department's incident investigations reports.
aa. Coordinate and record Directorate safety meetings
bb. Tasks assigned by MSMS/QA.

9. Senior officers

a. Participate in SAG activities when required.
b. Participate in development of CAPs when required
c. Participate in the implementation of CAPs, risk mitigation controls and safety recommendations from incident investigations as appropriate.
d. Report potential hazards and safety occurrences
e. Participate in safety promotion activities.
f. Participate in safety assessments.
g. Propose or recommend possible solutions to reported potential hazards and/or safety occurrences.
h. Report on the effectiveness of implemented CAPs, risk mitigation controls and safety recommendations.

10. Officers and Trainees

a. Report potential hazards, safety occurrences, incidents, etc
b. Report faulty procedures, unserviceability, malfunctions, etc
c. Participate in safety communication activities
d. Participate in safety assurance activities
e. Participate in safety risk management activities
f. Contribute articles for safety publications.

11. Contract Managers

a. Coordinate the preparation of safety assessment prior to implementation of contract.
b. Share safety assessment report with HoD and SMS/QA department for follow up.
c. Monitor and document implementation of risk mitigation controls prior to and during implementation of the contract

12. Casual workers

a. Report potential hazards, safety occurrences, incidents, etc
b. Report faulty procedures, unserviceability, malfunctions, etc.
c. Contribute articles for safety publications

13. Contractors and other service providers

a. Familiarize oneself with safety requirements of user department/directorate applicable to contract activities
b. Understand the organization safety policy and objectives and adhere to all the applicable requirements established under them in the course of executing their contractual duties.
c. Prepare safety assessment of the works to be accomplish and share it user department/directorate for review prior to commencement of works.
d. Implement safety recommendations and/or risk mitigation controls from the safety assessment prior to or during implementation of the contract as required.
e. Identify and report any potential/actual hazard while executing the contractual duties.
f. Get acquainted with the Emergency procedures.
g. Report any incident/accident while executing contractual duties.

Appendix K: ANS SAFETY REVIEW CHECKLIST

Area for Review /Audit Query		Reference	Compliance
C – Compliant, P – partial compliance, NC – Non-compliant, NA – Not applicable.			
Regulatory			
Are the MANSOPS, USOI, SSI, ATC Coordination procedures complete, accurate, concise and updated regularly?	a) Endorsed documents b) Latest revision c) Latest regulatory, , d) Random document review		C P NC NA
Does the ATS route structure and existing separation minima support efficient and safe aircraft operations?	a) Adequate route spacing b) Location of crossing points minimizes need for controller intervention and inter/intra unit coordination. c) Separation minima in the airspace and at aerodrome are appropriate. d) Provisions associated with separation minima are complied with.		C P NC NA
Does the unit have adequate provisions for monitoring and controlling access to the manoeuvring area?	a) Adequate visibility of manoeuvring area. b) Procedures for accessing the runway. c) Follow up action in event non-adherence to procedure.		C P NC NA
Are there procedures for low visibility aerodrome operations?	a) Applicability and documentation of the procedures. b) Record of application		C P NC NA
Does the department have procedures for regulating traffic volumes whenever necessary?	a) Applicability b) Documented procedure specifying traffic volumes, associated controller workload and defined safe levels		C P NC NA

Area for Review /Audit Query		Reference	Compliance
C – Compliant, P – partial compliance, NC – Non-compliant, NA – Not applicable.			
Has the department developed procedures to be applied in the event of failures or degradations of ANS systems?	a) Documented procedures b) Relevancy c) Practicability		C P NC NA
Does the department have a procedure for handling incidents and other safety related occurrences?	a) Documentation ➢ Reporting ➢ Identification of deficiencies or hazards ➢ Implementation of remedial action b) Evidence of implementation of the procedure c) Promotion of safety reporting		C P NC NA
Operational/Technical			
Are the staff provided with a conducive working environment that facilitate their performance?	The temperature levels, humidity, ventilation, noise, and ambient lighting do not adversely affect controller performance.		C P NC NA
Are the automation systems for handling data for ATC efficient and user friendly?	a) The provided is; - i. Timely ii. Accurate, and iii. Easily recognizable manner. b) Systems provide data in accordance with HF principles.		C P NC NA
Does the design and positioning of systems/equipment/facilities including input/output devices take into consideration ergonomic principles?	a) Documentation b) Record of ergonomic considerations during design and positioning of equipment/facilities/systems.		C P NC NA

Area for Review /Audit Query		Reference	Compliance
C – Compliant, P – partial compliance, NC – Non-compliant, NA – Not applicable.			
Are CNS and other safety significant systems and equipment, efficient, maintained and have redundant systems?	a) Evidence of testing, detection of system degradation, failure warnings, b) Records of consequences of system degradation and failures. c) Measures to minimize failures and degradations. d) Evidence of backup systems, reliability and availability of systems.		C P NC NA
Does the unit have a systemic way of monitoring system and equipment serviceability?	a) Documentation b) Records		C P NC NA
Licensing/Training			
Are the controllers appropriately qualified for their job?	a) Adequate training. b) Have ATC licenses. c) Valid ratings.		C P NC NA
Do you have a process/mechanism to maintain the competency of controllers?	a) Refresher training b) Including refresher in handling of aircraft emergencies, operations under conditions with failed and degraded systems		C P NC NA
Are controllers provided with relevant and adequate training to ensure efficient teamwork?	Supervisory training for team leaders/supervisors Training that provides knowledge and skills on how to work as team for team members (C.F. – crew resource management for flight crew)		C P NC NA
Are controllers adequately prepared	Whether appropriate training and/or instruction is provided prior to introduction of changes.		C P

Area for Review /Audit Query		Reference	Compliance
C – Compliant, P – partial compliance, NC – Non-compliant, NA – Not applicable.			
for changes to procedures and systems before their implementation?			NC NA
Do controllers have the necessary competences to communicate effectively in the course of executing their duty?	a) Competence in English language b) Use standard phraseology		C P NC NA
Note: — In the context above, the terms reliability and availability have the following meanings: 1. *Reliability. The probability that a device or system will function without failure over a specified time period or amount of usage; and* 2. *Availability. The ratio of percentage of the time that a system is operating correctly to the total time in that period. 2-4 Air Traffic Management (PANS-ATM) 10/11/16*			

Appendix L: JOB DESCRIPTIONS OF SMS PERSONNEL

DANS/05 GRADE: 13

JOB TITLE: MANAGER SAFETY MANAGEMENT SYSTEMS AND QUALITY ASSURANCE (M/SMS/QA)

REPORTS TO: DIRECTOR AIR NAVIGATION SERVICES

JOB PURPOSE: To provide guidance and direction for the planning, implementation and operation of the Directorate's safety management system (SMS), quality assurance(QA) and to coodinate techinical training for the directorate so that safe aviation standards and procedures are achieved

PRINCIPAL ACCOUNTABILITIES

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
1.	Understanding the Strategic Intentions	• The Manager SMS/QA is responsible for providing information and advice to senior management, and to the Accountable Executive on matters relating to safe operations. Tact, diplomacy and a high degree of integrity are prerequisites • Understands the Direction of CAA and the Air Navigation Services Directorate and convert these into the Departmental objectives and priorities • Understands the overall vision and values of CAA and ensure that Air Navigation services development is aligned to them • Understands the National interests in the development of the Aviation industry in Uganda and ensure that projects undertaken are aligned to the National Objectives • Understands ICAO's strategy of improving Civil Aviation and ensures CAA's plans are in line with the regional aviation plans.
2.	Financial Resource Management	• Understands the financial requirements of the department and integrates them into the business planning process • Participates in the business planning and review process and provides the forecasts required.

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
		• Accounts for all assets, financial and material that have been assigned to the SMS department • Provides budget inputs for the SMS department and ensures that projects are undertaken within their planned parameters. • Provides financial accountabilities as may be required
3.	Safety Management Systems	• Demonstrate an excellent safety behaviour and attitude, follow regulatory practices and rules. • Performs the safety responsibilities of manager SMS detailed in the UCAA Aviation Safety Handbook.
4.	Aviation safety training	• Understands the current and future safety training needs of DANS' staff and design programmes to meet the requirements. • Understands SMS training providers (Approved Training Organizations) and ensures that they meet the required standard. • Monitors the departmental 's training plans and programmes to ensure that the meet the required safety standards. • Conduct post training evaluations in order to assess the effectiveness of training programmes. • Participates in training and instruction.
5.	Quality assurance	• Understands CAA's quality policy and ensures its implementation within the directorate. • Understands the international quality certification process and its application in Air Navigation Services. • Ensures maintenance of service standards and their improvements through effective monitoring of service delivery by carrying out inspections and service audit to check compliance with established national and ICAO standards. • Coordinates the implementation of quality programmes with the CAA's Quality department.
6.	Human Resources Management	• Understands CAA's policies to attract, develop and retain staff and ensures that staff is dedicated and highly motivated. • Participates in identification and recruitment of appropriate calibre staff to ensure high staff performance. • Monitors staff performance within the directorate by coordinating periodic staff appraisals. • Identifies and quantifies skills and competency gaps and implements programmes to improve performance.

QUALIFICATIONS/REQUIREMENTS:

1. A Master's degree in any of the following: Aeronautical/Aerospace, Communications or Electrical/Telecommunication/Electronics Engineering, computer science, software engineering, Physics, Mathematics, Statistics, ICT, Survey or Geography from a recognized university with relevant qualifications in any of the air navigation services (CNS, AIM or ATM) disciplines and work experience in Air Navigation Services Provider operations of at least ten (10) years in a recognized civil aviation organization including five (5) years at the level of principal.

   OR

   A bachelor's degree in any of the following: Aeronautical/Aerospace, Communications or Electrical/Telecommunication/Electronics Engineering, computer science, software engineering, Physics, Mathematics, Statistics, ICT, Survey or Geography from a recognized university with a Master's degree in Management discipline, with relevant qualifications in any of the air navigation services (CNS, AIM or ATM) disciplines and work experience in Air Navigation Services Provider operations of at least ten (10) years in a recognized civil aviation organization including five (5) years at the level of principal.

2. Relevant SMS training from an ICAO approved training organization in Basic SMS and at least two of the following i.e. safety/quality audit, incident investigations, SMS implementation, safety risk management, emergency response planning, etc.
3. At least four (4) years' experience in the implementation and management of Aviation Safety Management Systems.
4. Must be a seasoned People Manager with demonstrable prior experience and success in overseeing Staff productivity and Performance Management.

DANS/11 GRADE: 12

JOB TITLE: PRINCIPAL AIR TRAFFIC MANAGEMENT OFFICER, SMS/QA (PATMO-SMS/QA)

REPORTS TO: MANAGER SAFETY MANAGEMENT SYSTEMS

JOB PURPOSE: The job exists to ensure that SMS/QA processes are integrated with ATM functions to ensure safety and customer satisfaction of Air Navigation Services.

PRINCIPAL ACCOUNTABILITIES

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
1.	Safety Management System	• Coordinate implementation and operation of SMS within respective ATM department. • Participate in and Monitor the implementation of the safety policy and objectives in ATM department • Advise MSMS/QA on SMS related issues in ATM department. • Coordinate/participate in the directorate Safety Risk Management (SRM) activities. • Coordinate/participate in the preparation and update the directorate's hazard register. • Coordinate/participate in the development and monitor implementation of Corrective Action Plans (CAPS) from Audits and Inspections as well as safety recommendations for the directorate. • Coordinate/participate the Change Management process for directorate. • Coordinate/Participate in the preparation and implementation of SMS/QA department budget and training plan. • Coordinate and participate in directorate ATS incident investigations • Monitor implementation of safety recommendations from ATS incident investigations. • Participates in Risk assessment and mitigation of ATM department safety risks • Monitor change management in ATM department. • Collect and analyze safety data/information from ATM department • Conduct safety audits/ inspections • Review and/or accept ATM department CAPs • Monitor implementation and review effectiveness of CAPs, risk mitigation controls and safety recommendations in ATM department • Follow-up and Review ATM department safety assessments. • Monitor and review ATM department safety investigations. • Ensures that ATM department staff are aware of safety-critical information and areas that require special attention/care • Promote participation of ATM department staff in safety management activities. • Update SMS documentation and records. • Participate in safety reviews, safety studies and safety surveys

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
		• Compile information for safety communication (SMS safety Electronics display, safety publications, etc.). • Coordinate and facilitate SMS workshops • Review ATM department's incident investigations reports. • Coordinate and record Directorate safety meetings • Any other tasks assigned by MSMS/QA
2.	Quality Assurance	• Communicates the quality and SMS policy and objectives to all ATM staff • Participates in the international quality certification process and its application in Air Navigation Services
3.	Air Traffic Management	• ATM focal person for SMS • Reviews all ATM logs and endorses them on behalf on SMS • Coordinates with PATMO/OPS and OC ANS on ATM operational matters of key safety concerns
4.	Planning, budgeting and review process	• Participates and makes contributions to ensures that Business Plan provisions contain adequate allocations for the department's requirements • Participates in the preparation of annual budget inputs for the department • Participate in the development and implementation of the SMS/QA department training plan.
5.	Human Resources Management	• Monitor ATM department attendance for adherence to staffing requirements. • Makes input in attraction, retention, motivation and development of staff that are dedicated to outstanding performance in the department. • Coordinate/participate in preparation of annual leave roster.
6.	SMS Training	• Provides input to the current and future safety training needs of ATM staff. • Participate in training and instruction

QUALIFICATIONS/REQUIREMENTS:

1. A bachelor's in any of the following: Aeronautical/Aerospace, Communications or Electrical/Telecommunication/Electronics Engineering, computer science, software engineering, Physics, Mathematics, Statistics, ICT, Survey or Geography from a recognized university.
2. Be a fully licensed and rated Air Traffic Management Officer, with Four (4) ATC ratings and at least 8 years' experience in the air traffic control operations including 3 years at ATMS level.

3. Practical experience at an ATM radar/surveillance facility equipped station, including supervisory/instructional experience in radar/surveillance assisted Approach or Area/Airways Control.
4. Completed Basic SMS training and at least one of the following; -
    a. Safety/quality Audit
    b. Accident/Incident investigation
    c. Safety risk management
    d. Emergency Response planning
    e. SMS implementation
5. Active participation in SMS implementation and operation for at least 2 years i.e. fulfilling respective safety responsibilities.
6. Quality Management Systems training.
7. Must be computer literate; experience in use of MS office applications.
8. Extensive knowledge of ICAO documentation and Publications
9. A Master's degree in a management discipline or one of the disciplines in "1" above is added advantage.

DANS/14 GRADE: 12

JOB TITLE: PRINCIPAL AERONAUTICAL INFORMATION MANAGEMENT OFFICER SAFETY AND QUALITY MANAGEMENT SYSTEMS (PAIMO-SMS/QMS)

REPORTS TO: MANAGER SMS/QA

JOB PURPOSE: The job exists to ensure that Safety and Quality Management Systems processes are integrated in AIM/MET functions to ensure safety and quality of air navigation services.

PRINCIPAL ACCOUNTABILITIES

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
1.	Safety Management System	• Coordinate implementation and operation of SMS within AIM department. • Participate in and Monitor the implementation of the safety policy and objectives in the AIM department. • Advise MSMS/QA on SMS related issues in AIM department. • Coordinate/participate in the directorate Safety Risk Management (SRM) activities. • Coordinate/participate in the preparation and update the directorate's hazard register. • Coordinate/participate in the development and monitor

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
		implementation of Corrective Action Plans (CAPS) from Audits and Inspections as well as safety recommendations in the directorate. • Coordinate/participate in the Management of Change process in the directorate. • Coordinate/Participate in the preparation and implementation of SMS/QA department budget and training plan. • Coordinate and participate in directorate ATS incident investigations. • Monitor implementation of safety recommendations from ATS incident investigations in the AIM department. • Participates in Risk assessment and mitigation of AIM department safety risks. • Monitor change management in AIM department. • Collect and analyze safety data/information from AIM department. • Conduct safety audits/ inspections. • Review and/or accept AIM department CAPs. • Monitor implementation and review effectiveness of CAPs, risk mitigation controls and safety recommendations in AIM department. • Follow-up and Review AIM department safety assessments. • Monitor and review AIM department safety investigations. • Ensures that AIM department staff are aware of safety-critical information and areas that require special attention/care. • Promote participation of AIM department staff in safety management activities. • Update SMS documentation and records. • Participate in safety reviews, safety studies and safety surveys • Compile information for safety communication (SMS safety Electronics display, safety publications, etc.). • Coordinate and facilitate SMS workshops. • Review AIM department's incident investigations reports. • Coordinate and record Directorate safety meetings. • Tasks assigned by MSMS/QA
2.	Quality Assurance	• Communicates the quality policy and objectives to all AIM. • Participates in the international quality certification process and its application in Air Navigation Services • Coordinates Internal Quality audits and corrective actions within AIM- department • Coordinate and prepare reports of the QMS management

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
		reviews for AIM • Coordinate the management and resolution of customer complaints • Prepare customer feedback reports
3.	Aeronautical Information Services Management	• AIM/ focal person for SMS and QMS • Monitors the quality and safety in AIM operations on day-to-day basis • Reviews all AIM logs on behalf of SMS • Coordinates with all AIM Section heads on operational matters of key safety and quality concerns
4.	Business Planning process and Budgeting	• Participates and makes contributions to ensure that Business Plan provisions contain adequate allocations for the department's requirements • Participate in the development and implementation of the SMS/QA department budget.
5.	Human Resources Management	• Supervises the section's staff and ensures correct manning levels in accordance with operating standards • Makes input in attraction, retention, motivation and development of staff that are dedicated to outstanding performance in the department. • Investigates complaints and reported irregularities concerning the work of his staff • Monitors staff working hours • Ensures provision of supplies for operations in AIM department.
6.	SMS Training	• Provides input to the current and future SMS training needs of AIM staff. • Participate in the development and implementation of the SMS/QA department training plan. • Conducts safety and quality training and sensitizations
7.	Customer Service Support	• Ensures prompt and efficient service to both internal and external customers. • Ensures customer requirements and individual needs are known and accurately documented. • Monitors and acts on measures of customer satisfaction. • Encourages other staff to value customers.

QUALIFICATIONS/REQUIREMENTS:

1. A bachelor's degree in any of the following: Aeronautical/Aerospace, Communications or Electrical/Telecommunication/Electronics Engineering, computer science, software

engineering, Physics, Mathematics, Statistics, ICT, Survey or Geography from a recognized university.

2. Must have undertaken all the core AIM training:
   a) Basic AIS Operations
   b) Automated AIS/AIM Systems
   c) AIS Supervisory and Management
   d) AIP/MAP production

3. Required to have undertaken full training in at least 3 of the following ICAO certified courses at an ICAO certified training institute including SMS and QMS courses.
   a. Transition from AIS to AIM
   b. AIXM
   c. Publication and Documentation (IAIP)
   d. Conventional/Digital cartography
   e. AMHS
   f. Quality management Systems (QMS)
   g. Advanced AIS Course
   h. AIS Team Resource Management

4. Completed Basic SMS training and at least one of the following; -
   a. Safety/quality Audit
   b. Accident/Incident investigation
   c. Safety risk management
   d. Emergency Response planning
   e. SMS implementation
5. Active participation in SMS implementation and operation for at least 2 years i.e. fulfilling safety responsibilities.
6. Must have at least eight (8) years of continuous experience in AIM operations, having worked at all AIS Units (NOF, Aerodrome AIS unit, Communication Centre and the AIS Headquarters) and at least 5 years of these at supervisory level.
7. A Master's degree in a management discipline or any of the disciplines in "1" above is added advantage.

DANS/19 GRADE: 12

JOB TITLE: PRINCIPAL TECHNICAL OFFICER –SMS/QA

REPORTS TO: MANAGER SAFETY MANAGEMENT SYSTEMS

JOB PURPOSE: The job exists to ensure that SMS/QA processes are integrated within CNS functions in line with ICAO SMS framework and ISO standards to ensure safety and customer satisfaction of air navigation services

PRINCIPAL ACCOUNTABILITIES

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
1.	Safety Management Systems	• Coordinate implementation and operation of SMS within CNS department. • Participate in and Monitor the implementation of the safety policy and objectives within the CNS department. • Advise MSMS/QA on SMS related issues in CNS department. • Coordinate/participate in the directorate Safety Risk Management (SRM) activities. • Coordinate/participate in the preparation and update the directorate's hazard register. • Coordinate/participate in the development and monitor implementation of Corrective Action Plans (CAPS) from Audits and Inspections as well as safety recommendations for the directorate. • Coordinate the Management of Change process for directorate. • Coordinate/Participate in the preparation and implementation of SMS/QA department budget and training plan. • Coordinate and participate in directorate ATS incident investigations. • Monitor implementation of safety recommendations from ATS incident investigations. • Participates in Risk assessment and mitigation of CNS department safety risks. • Monitor the management of changes in CNS department. • Collect and analyze safety data/information from CNS department • Conduct safety audits/ inspections 2.10.15Review and/or accept CNS department CAPs. • Monitor implementation and review effectiveness of CAPs, risk mitigation controls and safety recommendations in CNS department. • Follow-up and Review CNS department safety assessments. • Monitor and review CNS department safety investigations. • Ensures that CNS department staff are aware of safety-critical information and areas that require special attention/care • Promote participation of CNS department staff in safety management activities. • Update SMS documentation and records. • Participate in safety reviews, safety studies and safety surveys • Compile information for safety communication (SMS safety

S.NO	PRINCIPAL ACCOUNTABILITIES	DELIVERABLES
		Electronics display, safety publications, etc.). • Coordinate and facilitate SMS workshops. • Review CNS department's incident investigations reports. • Coordinate and record Directorate safety meetings. • Tasks assigned by MSMS/QA
2.	Quality Assurance	• Communicates the Quality policy and objectives to all CNS staff. • Participates in the international quality certification process and its application in Air Navigation Services. • Coordinates Internal Safety audits and development of corrective actions for CNS.
3.	CNS Maintenance process	• CNS focal person for SMS. • Supervises CNS operations on day-today basis. • Reviews all CNS logs and endorses them on behalf on SMS. • Coordinates with PTO/Maintenance, PTO/Radar and Engineer in Charge on CNS operational matters of key safety concerns. • Coordinate development of technical specifications for items to be procured by the safety department.
4.	Planning, budgeting and review process	• Participates and makes contributions to ensures that Business Plan provisions contain adequate allocations for the department's requirements • Follow up on Business plan implementation for the SMS/QA department. • Participate in the development and implementation of the SMS/QA department budget
5.	Human Resources Management	• Supervises the section's staff and ensures correct manning levels in accordance with operating standards • Makes input in attraction, retention, motivation and development of staff that are dedicated to outstanding performance in the department.
6.	SMS Training	• Provides input to the current and future safety training needs of CNS staff and costs and ensure that the designed programs to meet the Safety Management Systems requirements. • Coordinates/participate development & implementation of the SMS/QA department training plan. • Participates in training and instruction of staff.

QUALIFICATIONS/REQUIREMENTS:

1. A bachelor's degree in any of the following: Aeronautical/Aerospace Engineering, Electrical/Telecommunication/Electronics/Computer Engineering, or software engineering, from a recognized university with professional training in any of the Communication, Navigation and Surveillance disciplines.

2. 8 years relevant working experience 4 of which should have been at supervisory level in CNS
3. Institutional and Factory training in either Communications, NAVAIDS or Surveillance equipment
4. Relevant ATSEP certification level
5. Membership with Professional bodies such as Uganda Institute of Professional Engineers (UIPE), Institute of Electrical and Electronics Engineers (IEEE) are added advantage.
6. A Master's degree in one of the disciplines in "1" above or a management discipline is added advantage
7. Completed Basic SMS training and at least one of the following; -
    a. Safety/quality Audit
    b. Accident/Incident investigation
    c. Safety risk management
    d. Emergency Response planning
    e. SMS implementation
8. Active participation in SMS implementation and operation for at least 2 years i.e. fulfilling safety responsibilities.
9. KNOWLEDGE AND SKILLS;
    a. Knowledge in computer programming, computer networking (CCNA), Data Base management (DBM), computer repair and maintenance skills, Operating Systems (UNIX, LINUX, Windows), Software and hardware installation.
    b. Knowledge of ICAO documentation and publication.
    c. Communication and interpersonal skills
    d. Team leadership and management skills
    e. Technical Report Writing skills
    f. Project Management skills
    g. Quality Management Systems.