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ADVISORY

ORGANIZATION AND CONTENTS OF OPERATIONS MANUAL

1. AUTHORITY

1.1 This circular is issued by the Executive Chairman of the Instituto de Aviação Civil de Moçambique (IACM) in pursuance of powers vested in him under Article 31 of Law Nº 21/2009 of 21 September and Article 12 of Resolution 19/2011 of 30 November.

2. PURPOSE

2.1 Provision of detailed regulatory requirements to the Operators related to Operations Manual.

2.2 Provision of expanded information to the Operators on contents of Operations Manual as provided in Appendix 2 of ICAO Annex 6 Part 1.

3. SCOPE

3.1 This Circular sets the minimum requirements, conditions and obligations for an Operator on Operations Manual.

3.2 Operations Manual, which may be issued in separate parts corresponding to specific aspects of operations, in accordance with MOZCATs, part 121.04.2 and ICAO Annex 6, Part 1 Appendix 2 shall contain at least the contents detailed by this Circular.

4. OPERATOR'S OBLIGATION

4.1 An Operator, prior to commencement of operation shall:

- a) Prepare a Flight Safety Document System (Set of inter-related documentation) that is easily accessible, validated and consistent in use, with organized information necessary for flight and ground operations, and comprising, as a minimum, the Operations Manual and the Operator's Maintenance Control Manual;
- b) Prepare and submit an operations manual (02 copies) as a part of its flight safety document system for the use and guidance of operations personnel concerned, in English language, which shall contain all applicable requirements, information and instructions on the contents of the operations manual provided herein, as part of the flight safety documents system, shall be taken into account. This shall be reviewed by OPS, IACM and after approval; it shall be implemented by the operator before grant of AOC.

4.2 The Operator shall ensure that:

- a) The contents of the Operations Manual, including all amendments or revisions, do not contravene the conditions intended/contained in the Air Operator Certificate (AOC) or any applicable regulations of IACM and the countries into or over which its aircraft are operated or planned to be operated and must have an approval of IACM. Approval will be issued in the form of an Approval letter, copy of which may be placed in the opening pages of manual(s);
- b) The Structure and contents of the Operations Manual are in accordance with this Circular;
- c) The Operations Manual contains all instructions and information necessary for operations personnel to perform their duties and the relationship of such duties to the operation as a whole ;
- d) The Operations Manual is amended and or revised as is necessary to ensure that the information contained therein is kept up to date and all such amendments or revisions after the Approval of OPS, IACM, are issued to all personnel that are required to use this manual. All amendments and revisions required by OPS, IACM shall be incorporated;
- e) The approved Operations Manual is provided at the Operators headquarter, flight dispatch, operating ports and with each member of his operating staff;
- f) OPS, IACM is provided with a copy of Approved Operations Manual, and all its amendments or revisions thereafter;
- g) Those current parts of the Operations Manual relevant to the duties of the crew are carried on each flight and are easily accessible to the crew on board the aeroplane;
- h) Such mandatory material as IACM may require is incorporated in the operations manual;
- i) The Approved Operations Manual is followed for all the facets of operations without any deviation;
- j) All operations personnel have easy access to a copy of each part of the Operations Manual, which is relevant to their duties. In addition, the operator shall supply crewmembers with a personal copy of, or sections from, Parts A, B and D of the Operations Manual as are relevant for personal study.

5. GENERAL RULES FOR OPERATIONS MANUALS

- 5.1 The Operations Manual, which may be issued as one or more separate volumes, must provide:
- a) Clear, complete and detailed instructions, policies and procedures so that operational staff, are fully informed of what is required of them;
 - b) Procedures that are effective & represent a sound safety philosophy and are capable of implementation;
 - c) The necessary guidance and instructions to personnel in a suitable and easy to read, easy to amend format;
 - d) Adequate guidance with any other personnel directly involved with the operations of any aircraft.

6. STRUCTURE OF THE OPERATIONS MANUAL

- 6.1 An operator shall ensure that the main structure of the Operations Manual is as follows:
- a) **Part A. General/Basic**
This part shall comprise all non type-related operational policies, instructions and procedures needed for a safe operation;
 - b) **Part B. Aircraft operating information**
This part shall comprise all type-related instructions and procedures needed for a safe operation. It shall take account of any differences between types, variants or individual aeroplanes used by the operator;
 - c) **Part C. Areas, routes and aerodromes**
This part shall comprise all instructions and information needed for the area of operation;
 - d) **Part D. Training**
This part shall comprise all training instructions for personnel required for a safe operation.

7. CONTENTS OF THE OPERATIONS MANUAL (Contents of this section are numbered with reference to the parts of Operations Manual with different format)

7.1 Part A - GENERAL

A1 Administration and Control of Operations Manual

A1.1 Introductions: It shall contain the following:

- a) A statement that the manual complies with all applicable regulations and with the terms and conditions of the applicable Air Operator Certificate;
- b) A statement that the manual contains operational instructions those are to be complied with by the relevant personnel;
- c) A list and brief description of the various parts, their contents, applicability and use;
- d) Explanations and definitions of terms and words needed for the use of the manual.

A1.2 System of amendment and revision: These pages shall include:

- a) Name of the IACM approved person responsible for the issuance and dissemination of amendments and revisions. This responsibility shall be given to the most experienced person out of the Key management. For airlines it shall be Chief of Operations/Director Operations, or the Chief Pilot. Charter and Aerial work operators may give this responsibility to either chief pilot or any next senior person in the operations;
- b) A record of amendments and revisions;
- c) A statement that handwritten amendments and revisions are not permitted;
- d) A list of effective pages;
- e) A description of the distribution system for the manuals, amendments and revisions.

A2 Organisation and Responsibilities

A2.1 A description of the organizational structure including the general company organogram and operations department organogram. The organogram must depict the relationship between the Operations Department and the other Departments of the company. In particular, the subordination and reporting lines of all Divisions, Departments etc, which pertain to the safety of flight operations, must be shown.

A2.2 The name of each nominated post holder responsible for flight operations, the maintenance system, crew training, flight safety, ground handling and safety management system. A description of their function and responsibilities must be included.

A2.3 A description of the duties, responsibilities and authority of operations management personnel pertaining to the safety of flight operations and the compliance with the applicable regulations.

A2.4 Authority, duties and responsibilities of the Pilot-in-Command as required by Appendix 2 of Annex 6 Pt. 1

A2.5 Duties and responsibilities of crew members other than the Pilot-in-Command and operational personnel including FOO as required by MOZCATs and Appendix 2 of Annex 6 Pt. 1

A3 Operational Control and Supervision: Following topics shall be included:

A3.1 An organization and management system for the operational control of all flights in accordance with specific operating regulations applicable to aircraft operations

A3.2 Responsibilities for operational control and development of related policies, processes, standards and procedures shall be provided.

A3.3 A description of the system for supervision of the operation by the operator. This must show how the safety of flight operations and the qualifications of

personnel are supervised. The procedures related to the following items must be described:

- a) Licence and qualification validity;
- b) Competence of operations personnel;
- c) Control, analysis and storage of records, flight documents, additional information and data.

Note: Accident prevention and flight safety programme shall be covered along with safety management system

A3.4 System of promulgation of additional operational instructions and information

A3.5 Powers of the IACM: A description of the powers of the Authority and guidance to staff on how to facilitate inspections by Authority personnel.

A4 Quality control system

A4.1 The quality system should enable the operator to monitor compliance with the MOZCAR and MOZCATS, the operations manual, the operator's maintenance management policy, and any other standards specified by that operator or the Authority to ensure airworthiness of aircraft its safe operations.

A4.2 Requirements:

- a) The operator shall establish a quality system and designate a quality manager to give effect to the requirements of paragraph 5.1 above.
- b) The quality system must include a quality assurance programme that contains procedures, designed to verify that all operations are being conducted in accordance with all applicable requirements, standards, and procedures.
- c) The quality system and the quality manager must be acceptable to the Authority.
- d) The quality system must be described in relevant documentation.

A5 Crew Composition

A5.1 Crew Composition. The number and composition of the flight crew which shall not be less than that specified in the operations manual. The flight crews shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness. A description and the method for determining crew compositions/minimum crew composition taking account of the following:

- a) The type of aeroplane being used;
- b) The area and type of operation being undertaken;
- c) The phase of the flight;
- d) The minimum crew requirement and flight duty period planned;
- e) Experience total and on type), recency and qualification of the crew members.

A5.2 When necessitated by considerations related to the type of aeroplane used, the type of operation involved, following crewmembers may be required:

- a) Radio operator: The flight crew shall include at least one member who holds a valid licence, issued or rendered valid by the State of Registry, authorizing operation of the type of radio transmitting equipment to be used;
- b) Flight engineer: When a separate flight engineer's station is incorporated in the design of an aeroplane, the flight crew shall include at least one flight engineer especially assigned to that station, unless the duties associated with that station can be satisfactorily performed by another flight crew member, holding a flight engineer licence, without interference with regular duties;
- c) Flight navigator: The flight crew shall include at least one member who holds a flight navigator licence in all operations where, as determined by the State of the Operator, navigation necessary for the safe conduct of the flight cannot be adequately accomplished by the pilots from the pilot station.

A5.3 Designation of Pilot-in-Command. The regulations applicable for the designation of the Pilot-in-Command (IFR, VFR) and, if necessitated by the duration of the flight, the procedures for the relief of the Pilot-in-Command or other members of the flight crew.

A5.4 The designation of the cabin crew, lead cabin crew and, if necessitated by the duration of the flight, the procedures for the relief of the lead cabin crew member and any other member of the cabin crew.

A5.5 Flight crew incapacitation. Instructions on the succession of command in the event of flight crew incapacitation.

A5.6 Operation on more than one type or variant.

A6 Qualification Requirements

A6.1 A description of the required (licence, ratings) qualification/competency e.g. for routes and aerodromes), experience, training, checking and recency for operations personnel to conduct their duties with consideration to the aeroplane type, kind of operation and composition of the crew.

A6.2 Flight crew Qualification: Details shall be provided on qualification requirements with reference to the MOZCARs and relevant MOZCATs for the following:

- a) Pilot-in-Command and co-pilot:
 - i) Recent experience of Take off and landing;
 - ii) Area, route, aerodrome qualification with adequacy of knowledge;
 - iii) Actual approach and landing requirement;
 - iv) One trip on that route or area in the capacity of pilot or observer in preceeding 12 months;
 - v) Pilot unable to perform the above in preceeding 12 months;
 - vi) Pilot proficiency checks.
- b) Cruise relief pilot Recent experience requirements;

- c) Requirement of Single pilot operations under IFR or at night;
- d) Co-pilot;
- e) Pilot under supervision;
- f) Flight Engineer;
- g) Flight Crew Training, checking and supervision personnel.

A6.3 Cabin crew

Details shall be provided on qualification requirements in accordance with relevant MOZCARs and MOZCATs for the following:

- a) Cabin crew;
- b) Lead Cabin crew/purser;
- c) Required cabin crew;
- c) Training, checking and supervision personnel.

A6.4 Flight Operations Officer

FOO shall not be assigned to duty unless that person has:

- a) Satisfactorily completed IACM license specific training course that addresses all the components of method of control and supervision of flight operations;
- b) Holds a valid Licence from IACM;
- c) Made within the preceding 12 months, at least a one-way qualification flight in the flight crew compartment of an aeroplane over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable, and the FOO must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew during the flight;
- d) Demonstrated to the operator a knowledge of:
 - i) The contents of the operations manual as described in this circular;
 - ii) The radio equipment in the aeroplanes used;
 - iii) The navigation equipment in the aeroplanes used.
- e) Demonstrated the knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:
 - i) The seasonal meteorological conditions and the sources of meteorological information;
 - ii) The effects of meteorological conditions on radio reception in the aeroplanes used;
 - iii) The peculiarities and limitations of each navigation system, which is used by the operation;
 - iv) The aeroplane loading instructions.
- f) Demonstrated the knowledge and skills related to human performance relevant to dispatch duties;
- g) Demonstrated the ability to perform the duties specified in MOZCATs.

A6.5 Other operations personnel in accordance with the requirements specified in relevant MOZCATs.

A6.6 Record keeping requirements that are sufficient to satisfy the Authority of the qualification of the pilots and other operations personnel; and of the manner in which such qualification has been achieved.

A7 Crew Health Precautions

A7.1 Crew health precautions. The relevant regulations and guidance to crew members concerning health including:

- a) Alcohol and other intoxicating liquor;
- b) Narcotics;
- c) Drugs;
- d) Tranquilizers;
- e) Pharmaceutical preparations;
- f) Immunisation;
- g) Deep diving;
- h) Blood donation;
- i) Surgical operations;
- j) Sleep and rest;
- k) Meal precautions prior to and during flight.

A8 Flight and Duty Time Limitations and Rest Requirements

A8.1 A detailed policy limiting the flight time and flight duty periods and providing for adequate rest periods for flight crew members and cabin crew as required by and in accordance with MOZCARs and MOZCATs.

A8.2 Adequate System and procedures to maintain current records of flight time, flight duty periods and rest periods of all its crewmembers in accordance with MOZCATs.

A8.3 Conditions under which flight and duty time may be exceeded or rest periods may be reduced and the procedures used to report these cases.

A9 Operating Procedures

A9.1 **Flight Preparation Instructions.** As applicable to the operation.

- a) Minimum Flight Altitudes. A description of the method of determination and application of minimum altitudes including procedures to establish the minimum altitudes/flight levels for VFR flights; and for IFR flights;
- b) Criteria for determining the usability of aerodromes;
- c) The method for establishing aerodrome operating minima for each aerodrome to be used in operations be provided;
- d) En-route Operating Minima for VFR Flights or VFR portions of a flight and, where single engined aeroplanes are used, instructions for route selection with respect to the availability of surfaces which permit a safe forced landing.
- e) Presentation and Application of Aerodrome and En-route Operating Minima;
- f) Interpretation of meteorological information. Explanatory material on the decoding of MET forecasts and MET reports relevant to the area of operations, including the interpretation of conditional expressions;

- g) Specific instructions for the computation of the quantities of fuel and oil to be carried, having regard to all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more power units while en-route;
- h) Mass and Centre of Gravity. The general principles and instructions for mass and balance control including:
- i) Definitions, Methods, procedures and responsibilities for preparation and acceptance of mass and centre of gravity calculations;
 - ii) The policy for using standard and/or actual masses;
 - iii) The method for determining the applicable passenger, baggage and cargo mass;
 - iv) The applicable passenger and baggage masses for various types of operations and aeroplane type;
 - v) General instruction and information necessary for verification of the various types of mass and balance documentation in use;
 - vi) Specific gravity of fuel, oil and water methanol;
 - vii) Seating policy/procedures and Last Minute Changes procedures;
 - viii) ATS Flight Plan. Procedures and responsibilities for the preparation and submission of the air traffic services flight plan. Factors to be considered include the means of submission for both individual and repetitive flight plans;
 - ix) Operational Flight Plan. Procedures and responsibilities for the preparation and acceptance of the operational flight plan;
 - x) Operator's Aeroplane Technical Log. The responsibilities and the use of the operator's Aeroplane Technical Log must be described, including samples of the format used;
 - xi) Contents of journey log book and the corresponding roman numerals as:
 - Aeroplane nationality and registration;
 - Date;
 - Names of crew members;
 - Duty assignments of crew;
 - Place of departure;
 - Place of arrival;
 - Time of departure;
 - Time of arrival.
 - Hours of flight;
 - Nature of flight (private, aerial work, scheduled or non-scheduled);
 - Incidents, observations, if any;
 - Signature of person in charge.
 - xii) Entries in the journey log book should be made currently and in ink or indelible pencil;
 - xiii) Completed journey logbook should be retained to provide a continuous record of the last six months' operations;
 - xiv) List of documents, forms and additional information: For each flight, documents and forms listed in Ops-Circular Ops-1 must be carried on board either in original or as a certified true copy. When the certificates and the associated authorizations, conditions and limitations are issued in a language other than English, an English translation of all shall be included.

A9.2 Ground handling

- a) For all ground handling operations;
- b) An organizational structure which includes the responsibilities and authority for the management of all ground handling functions prior to the issuance of an AOC;
- c) Line of responsibilities is clearly defined for ground handling functions and associated with the following, when applicable:
 - i) Ramp operations;
 - ii) Passenger services;
 - iii) Baggage services;
 - iv) Cabin services;
 - v) Weight and balance control;
 - vi) Ground support equipment;
 - vii) Fuel services.
- d) In case where all or a part of the functions and tasks related to ground handling services have been contracted to a Ground Handling Agencies(GHA), all the above requirements shall be applicable to him.

Notes:

- 1) Before contracting out the ground handling to a GHA, it has to be ensured that he is appropriately licenced, his operational facilities are approved by IACM. He has to be equipped with ground handling manual and other related publications for handling the AOC holder aircraft. Required training may also imparted to the staff of GHA by the operator if required;
- 2) Ground-handling responsibility shall be permanently maintained by the operator, even if all or part of the functions and tasks related to ground handling services have been contracted to a Ground Handling Agency.
- e) Fuelling procedures. A description of fuelling procedures, including:
 - i) Safety precautions during refuelling and defuelling including when an APU is in operation or when a turbine engine is running and the prop-brakes are on;
 - ii) Refuelling and defuelling when passengers are embarking, on board or disembarking;
 - iii) Precautions to be taken to avoid mixing fuels.
- f) Aeroplane, passengers and cargo handling procedures related to safety. A description of the handling procedures to be used when allocating seats and embarking and disembarking passengers and when loading and unloading the aeroplane. Further procedures, aimed at achieving safety whilst the aeroplane is on the ramp, must also be given;
- g) Instructions for the conduct and control of ground de-icing/anti-icing operations and description of policy and procedures. These shall include descriptions of the types and effects of icing and other contaminants on aeroplanes whilst stationary, during ground movements and during take-off. In addition, a description of the fluid types used must be given including:
 - i) Proprietary or commercial names;
 - ii) Characteristics;
 - iii) Effects on aeroplane performance;
 - iv) Hold-over times; and

- v) Precautions during usage.

A9.3 Flight Procedures

- a) VFR/IFR Policy. A description of the policy for allowing flights to be made under VFR, or of requiring flights to be made under IFR, or of changing from one to the other;
- b) Navigation Procedures. A description of all navigation procedures relevant to the types) and areas) of operation. Consideration must be given to:
 - i) Standard navigational procedures including policy for carrying out independent cross-checks of keyboard entries where these affect the flight path to be followed by the aeroplane;
 - ii) MNPS navigation and navigation in other designated areas;
 - iii) RNAV;
 - iv) In-flight replanning;
 - v) Procedures in the event of system degradation;
 - vi) RVSM.
- c) Altimeter setting procedures;
- d) Altitude alerting system procedures;
- e) Ground Proximity Warning System (GPWS): EGPWS with a forward looking terrain avoidance system as a requirement on each aircraft. Instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system EGPWS);
- f) Policy and procedure on TCAS/ACAS/ FDR: Policy, instructions, procedures and training requirements for the avoidance of collisions, use of the airborne collision avoidance system (ACAS) and flight recorder;
- g) Policy and procedures for in-flight fuel management;
- h) Adverse and potentially hazardous atmospheric conditions. Procedures for operating in, and/or avoiding, adverse and potentially hazardous atmospheric conditions including:
 - i) Thunderstorms;
 - ii) Icing conditions;
 - iii) Turbulence;
 - iv) Windshear;
 - v) Jet stream;
 - vi) Volcanic ash clouds;
 - vii) Heavy precipitation;
 - viii) Sand storms;
 - ix) Mountain waves;
 - x) Significant Temperature inversions;
 - xi) A policy and procedures for flight crew to record and report on volcanic activity.
- i) Wake Turbulence. Wake turbulence separation criteria, taking into account aeroplane types, wind conditions and runway location;
- j) Crew members at their stations. The requirements for crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interest of safety;
- k) Use of safety belts for crew and passengers. The requirements for crew members and passengers to use safety belts and/or harnesses during the

different phases of flight or whenever deemed necessary in the interest of safety;

- l) Admission to Flight Deck. The conditions for the admission to the flight deck of persons other than the flight crew. The policy regarding the admission of Inspectors from the Authority must also be included;
- m) Use of vacant crew seats. The conditions and procedures for the use of vacant crew seats;
- n) Incapacitation of crew members. Procedures to be followed in the event of incapacitation of crew members in flight. Examples of the types of incapacitation and the means for recognizing them must be included;
- o) Cabin Safety Requirements. Procedures pertinent to:
 - i) Cabin preparation for flight, in-flight requirements and preparation for landing including procedures for securing the cabin and galleys;
 - ii) Passengers seating, where in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aeroplane;
 - iii) Passenger embarkation and disembarkation;
 - iv) Refuelling/defuelling with passengers embarking on board or disembarking..
- p) Passenger briefing: The contents, means and timing of passenger briefing;
- q) Procedures for aeroplanes to be operated above 15 000 m (49 000 ft) to determine the best course of action to take;
- r) Requirement for carriage of cosmic or solar radiation detection equipment. Procedures for use and recording the readings including actions to be taken in the event that limit values specified in the Operations Manual are exceeded.

A9.4 All Weather Operations. A description of the operational procedures associated with all weather operations.

- a) Non-Precision and Category I Operations;
- b) Low Visibility Operations.

A9.5 Extended Range Twin Engine Operations (ETOPS): Where relevant to the operations, the long-range navigation and operational procedures, engine failure procedure for ETOPS, dispatch requirements, operating and planning minima and the nomination and utilization of diversion aerodromes.

A9.6 Use of the Minimum Equipment and Configuration Deviation Lists

- a) Unserviceabilities;
- b) MEL;
- c) Specific MEL & CDL.

A9.7 Non revenue flights. Procedures and limitations for:

- a) Passenger Carrying Flights;
- b) Non-Passenger Flights like:
 - i) Training flights;
 - ii) Demonstration Test flights;
 - iii) Ferry flights;
 - iv) Demonstration flights;

v) Positioning flights.

A9.8 Oxygen requirement: Conditions under which Oxygen shall be used and the amount of Oxygen requirement to supply all the crew members and passengers in accordance with MOZCATs

- a) Non-Pressurised Aeroplanes;
- b) Pressurised Aeroplanes;
- c) Crew Protective Breathing Equipment –Pressurised Aeroplanes;
- d) Crew Protective Breathing Equipment--Non-Pressurised Aeroplanes

A9.9 Navigation and Communication Equipment

- a) A List of the Communication Equipment sufficient for conducting two-way communication, receiving meteorological information and communications on the aeronautical emergency frequency 121.5 MHz and 406 hertz.
- b) A list of Navigation equipment that will enable each aircraft to proceed in accordance with its operational flight plan and with the requirements of air traffic services;
- c) The equipment listed shall be sufficient to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane to navigate in accordance with operational flight plan and with the requirements of air traffic services;
- d) Required Navigation equipment for flights in defined portions of airspace or on routes where:
 - i) RNP type has been prescribed;
 - ii) Minimum navigation performance specifications (MNPS) are prescribed;
 - iii) A reduced vertical separation minimum (RVSM) of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive;
 - iv) On flights in which it is intended to land in instrument meteorological conditions.
- e) Requirement of equipment installation in such a way that the failure of any single unit will not result in the failure of another unit;
- f) Adequate procedures and their implementation to ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that requires it. This shall include monitoring both the processes and the products by IACM.

A10 Dangerous Goods and Weapons

A10.1 Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.

A10.2 Operator's policy on the transport of dangerous goods.

A10.3 Preparation and usage of acceptance checklist to prevent acceptance of dangerous goods for transport by air unless they are accompanied by a completed dangerous goods transport document and their marking, package, overpack or freight container have been inspected in accordance with the Technical Instructions on Dangerous Goods.

A10.4 Guidance on the requirements for acceptance, labelling, handling, stowage and segregation of dangerous goods.

A10.5 Provision of information to employees as will enable them to comply with the requirements in the Technical Instruction and instructions as to the action to be taken in the event of any emergency that might arise involving dangerous goods.

A10.6 Provision of Instructions on Dangerous goods not to be loaded into the aircraft unless the appropriate loading, segregation and inspection for damage or leakage procedures are followed.

A10.7 Provision of written information (NOTOC) to the pilot-in-command on an aircraft in which dangerous goods are carried in accordance with ICAO Technical Instructions.

A10.8 Provision of written & verbal information to the intending passengers in his aircraft of the types of goods which are forbidden for transport aboard an aircraft either in checked baggage or in carry on baggage. This shall be done through briefings, notices on check-in counter, information on tickets etc.

A10.9 Procedure for retention of NOTOC on ground and its immediate accessibility to the aerodromes of last departure and next scheduled arrival for each of its flights on which dangerous goods are carried.

A10.10 Adequate in-flight procedures for emergency response for aircraft incidents involving dangerous goods.

A10.11 Duties of personnel.

A10.12 Carriage of employees.

A10.13 Regular and random Inspection, surveillance and enforcement procedures by IACM for achieving compliance with its dangerous goods regulations. in accordance with ICAO Technical Instructions.

A10.14 Procedures to convey information to emergency services and to appropriate authorities in the event of an incident or accident of an aircraft carrying dangerous goods.

A10.15 The conditions under which weapons, munitions of war and sporting weapons may be carried.

A10.16 Initial and recurrent dangerous goods training programmes have been established and maintained by the organizations or agencies, which are involved in the transport of dangerous goods.

A11 Security

A11.1 The authority and responsibilities of operations personnel.

A11.2 Security instructions and guidance of a non-confidential nature which must include policy and adequate procedures:

- a) For handling and reporting crime on board such as unlawful interference, sabotage, bomb threats, and hijacking must also be included;
- b) To enable cabin crew to discreetly communicate to flight crew in the event of suspicious activity or security breaches in the passenger cabin;
- c) In relation to the flight crew compartment access;
- d) In relation to a bomb threat or warning, when the aircraft is on the ground or in flight.

A11.3 Provision of a checklist on board the aircraft of the procedures to be followed in searching for a bomb and for concealed weapons, explosives or other dangerous devices that may be the object of an act of unlawful interference. The checklist shall be supported by guidance on the appropriate course of action and information on the least-risk bomb location specific to the aeroplane.

A11.4 Establishment of preventative security measures and a security-training programme that will require an approval by the authority before the AOC is granted.

A12 Safety Management System and Handling of aviation accidents and incidents

A12.1 SMS of the Operator shall essentially cover the following:

- a) A comprehensive corporate approach to safety that shall include safety policy based on human factors, formation of a safety committee, audits, safety meetings, actions on the safety issues and risk management. SMS of the Operator shall:
 - i) Identify safety hazards;
 - ii) Ensure that remedial action necessary to maintain an acceptable level of safety is implemented;
 - iii) Provides for continuous monitoring and regular assessment of the safety level achieved;
 - iv) Aims to make continuous improvement to the overall level of safety.
- b) A safety management system shall clearly define lines of safety accountability throughout the operators, organization, including a direct accountability for safety on the part of senior management;
- d) Nomination of a post holder responsible for the development and establishment of the safety management system and his/her functions and responsibilities clearly defined and documented in the flight safety documents system;
- e) Safety policy statement and responsibilities of the personnel.
- f) Systems to achieve safety oversight;

g) Handling & Notification of Accidents and Incidents: The procedures must include:

- i) Definition of occurrences and of the relevant responsibilities of all persons involved;
- ii) Illustrations of forms used for reporting all types of occurrences or copies of the forms themselves), instructions on how they are to be completed, the addresses to which they should be sent and the time allowed for this to be done;
- iii) In the event of an accident, descriptions of which company departments, Authorities and other organisations that have to be notified, how this will be done and in what sequence;
- iv) Procedures for verbal notification to air traffic service units of incidents involving ACAS RAs, bird hazards, dangerous goods and hazardous conditions;
- v) Procedures for submitting written reports on air traffic incidents, ACAS RAs, bird strikes, dangerous goods incidents or accidents, and unlawful interference;
- vi) Internal safety related reporting procedures, designed in a way so that the Pilot-in-Command is informed immediately of any incident that has endangered, or may have endangered, safety during flight and that he is provided with all relevant information;
- vii) Policy and procedures for flight crew to record and report on volcanic activity;
- viii) Policy and procedures for flight crew to record and report on routine meteorological observation during departure and en-route and climb-out phases of the flight and special and other non-routine observations during any phase of the flight.

h) Flight Data Analysis Programme. This programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data. An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

A13 Rules of the Air

A13.1 Visual and instrument flight rules.

A13.2 Territorial application of the Rules of the Air.

A13.3 Communication procedures including COM-failure procedures.

A13.4 The circumstances in which a radio listening watch is to be maintained.

A13.5 Signals.

A13.6 Time system used in operation;

A13.7 ATC clearances (reading back, confirmation and conformance) adherence to flight plan and position reports.

A13.8 Visual signals used to warn an unauthorised aeroplane flying in or about to enter a restricted, prohibited or danger area.

A13.9 Information and instructions relating to the interception of civil aeroplanes.

A13.10 Procedures for pilots observing an accident or receiving a distress transmission.

A13.11 The ground/air visual codes for use by survivors, description and use of signal aids.

A13.12 Distress and urgency signals.

A13.13 Policy and adequate procedures for the:

- a) Flight crew to record and report on routine meteorological observation during flight and other non-routine & special observations during any phase of the flight;
- b) Provision of pre-flight aeronautical information essential for the safety, regularity and efficiency of air navigation to flight crew and operational personnel, at any aerodrome authorized in its AOC and corresponding Operations Specifications;
- c) Preparation and dissemination of NOTAM to flight crew and operations personnel;
- d) Preparation and dissemination of the information to flight crew and operations personnel contained in the:
 - i) Aeronautical Information Publication (AIP);
 - ii) Aeronautical Information Regulation and Control (AIRAC);
 - iii) Aeronautical Information Circular (AIC).

A14 Standard Operating Procedures

- a) Standard operating procedures (SOP) that provide guidance to flight operational personnel for each phase of flight including crew briefing as its integral part;
- b) The normal procedures and duties assigned to the crew, normal checklists, the system and the timing for use of the checklists and a statement covering the necessary coordination procedures between flight and cabin crew as an integral part of SOP;
- c) Departure contingency procedures;
- d) Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved;
- e) The normal procedures and duties must be included for Pre-flight, Pre-departure, Altimeter setting and checking, Taxi, Take-Off and Climb;
- f) Departure, approach and landing briefings;
- g) Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out;
- h) Instructions on the use of autopilots and auto-throttles in IMC;
- i) Stabilized approach procedure;
- j) Procedures for familiarization with areas, routes and aerodromes;
- k) Limitation on high rates of descent near the surface;
- l) Conditions required to commence or to continue an instrument approach;
- m) Instructions for the conduct of precision and non-precision instrument approach procedures;
- n) Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach and landing operations.

A15 Leasing

A description of the operational arrangements for lease, charter and all such other arrangements and associated procedures and management responsibilities in accordance with Article 83*bis* of Chicago convention. This shall include transfer agreement between State to State for safety oversight, Lease agreement between operator to Operator and subsequent responsibility of safety oversight of the aircraft being operated.

7.2 Part B- AIRCRAFT OPERATING INFORMATION

Note: All the manuals in this including AOM, FCOM and Flight Manuals are updated by implementing changes made mandatory or approved by IACM, Manufacturer or the State of Registry if not registered in Mozambique.

Provision of a system to provide aircraft operating information to its operations staff and flight crew, including mandatory revisions taking account of the differences between types, and variants of types, under the following headings:

B1 General Information & Units of Measurement

B1.1 General Information e.g. aeroplane dimensions, including a description of the units of measurement used for the operation of the aeroplane type concerned and conversion tables.

B2 Certification limitations and operating limitations

B2.1 A description of the certification limitations and the applicable operational limitations including:

- a) Certification status;
- b) Passenger seating configuration for each aeroplane type including a pictorial presentation;
- c) Types of operation that are approved e.g. VFR/IFR, CAT II/III, RNP Type, flights in known icing conditions etc);
- d) Crew composition;
- e) Mass and centre of gravity;
- f) Speed limitations;
- g) Flight envelopes;
- h) Wind limits including operations on contaminated runways;
- i) Performance limitations for applicable configurations;
- j) Limitations on wet or contaminated runways;
- k) Airframe contamination;
- l) Runway slope;
- m) System limitations.

B3 Normal, Abnormal and Emergency Procedures

Provision of an aircraft operating manual and the checklists relating thereto as a part of operations manual, for each aircraft type operated that contains the

normal, abnormal and emergency procedures relating to the operation of the aircraft to operations staff and flight crew. Aircraft operating manual shall include details of the aircraft systems, associated controls and instructions for their use, and its design shall be in accordance with human factors principles.

B3.1 Normal Procedures

The normal procedures and duties assigned to the crew, the appropriate checklists, the system for use of the checklists and a statement covering the necessary coordination procedures between flight and cabin crew. The following normal procedures and duties must be included:

- a) Pre-flight;
- b) Pre-departure;
- c) Altimeter setting and checking;
- d) Taxi, Take-Off and Climb;
- e) Noise abatement;
- f) Cruise and descent;
- g) Approach, Landing preparation & briefing;
- h) VFR Approach;
- i) Instrument approach;
- j) Visual Approach and circling;
- k) Missed Approach;
- l) Normal Landing;
- m) Post Landing;
- n) Operation on wet and contaminated runways.

B3.2 Abnormal and Emergency Procedures

The abnormal and emergency procedures and duties assigned to the crew, the appropriate checklists, the system for use of the check-lists and a statement covering the necessary co-ordination procedures between flight and cabin crew. The following abnormal and emergency procedures and duties must be included:

- a) Crew Incapacitation;
- b) Fire and Smoke Drills;
- c) Un-pressurised and partially pressurised flight;
- d) Exceeding structural limits such as overweight landing;
- e) Exceeding cosmic radiation limits;
- f) Lightning Strikes;
- g) Distress Communications and alerting ATC to Emergencies;
- h) Engine failure;
- i) System failures;
- j) Guidance for Diversion in case of Serious Technical Failure;
- k) Enhanced Ground Proximity Warning;
- l) TCAS Warning;
- m) Windshear;
- n) Emergency Landing/Ditching.

B4 Aircraft Performance

Operating instructions and information on climb performance with all engines operating, to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique, as is specified in ICAO Annex 6 Pt-1.

B4.1 Aircraft Performance which provides the necessary data for compliance with the performance requirements must be included to allow the determination of:

- a) Take-off climb limits e.g. Mass, Altitude, Temperature;
- b) Take-off field length dry, wet, contaminated);
- c) Net flight path data for obstacle clearance calculation or, where applicable, take-off flight path;
- d) The gradient losses for banked climb outs;
- e) En-route climb limits;
- f) Approach climb limits;
- g) Landing climb limits;
- h) Landing field length dry, wet, contaminated) including the effects of an in-flight failure of a system or device, if it affects the landing distance;
- i) Brake energy limits;
- j) Speeds applicable for the various flight stages also considering wet or contaminated runways).

B4.2 Supplementary data covering flights in icing conditions. Any certificated performance related to an allowable configuration, or configuration deviation, such as anti-skid inoperative, must be included.

B4.3 If performance Data, as required for the appropriate performance class, is not available in the approved AFM, then other data acceptable to the Authority must be included.

B4.4 The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.

B4.5 Additional Performance Data. Additional performance data where applicable including:

- a) All engine climb gradients;
- b) Drift-down data;
- c) Effect of de-icing/anti-icing fluids;
- d) Flight with landing gear down;
- e) For aeroplanes with 3 or more engines, one engine inoperative ferry flights;
- f) Flights conducted under the provisions of the CDL.

B5 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings:

- a) Data and instructions necessary for pre-flight and in-flight planning including factors such as speed schedules and power settings. Where applicable, procedures for engine-out operations, ETOPS particularly one-engine-inoperative cruise speed and maximum distance to an adequate aerodrome determined and flights to isolated aerodromes must be included;
- b) The method for calculating fuel needed for the various stages of flight.

B6 Mass and Balance: Instructions and data for the calculation of the mass and balance including:

- a) Calculation system e.g. Index system;
- b) Information and instructions for completion of mass and balance documentation, including manual and computer generated types;
- c) Limiting masses and centre of gravity for the types, variants or individual aeroplanes used by the operator;
- d) Dry Operating mass and corresponding centre of gravity or index.

B7 Loading: Instructions, procedures and provisions for aircraft loading and securing of load.

B8 Minimum Equipment List (MEL) and Configuration Deviation List(CDL)

- a) The minimum equipment list and configuration deviation list for the aeroplane types operated and specific operations authorized, including any requirements relating to operations in RNP airspace;
- b) MEL shall include the navigational equipment and take into account the required navigation performance for the route and area of operation;
- c) It shall take account of the aeroplane types and variants operated and the types/areas) of operation including procedures to be followed when an aeroplane is being despatched under the terms of its MEL/CDL.

B9 Survival and Emergency Equipment Including Oxygen

B9.1 A list of the survival equipment to be carried for the routes to be flown and the procedures to verify the serviceability of this equipment prior to take-off. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated checklists must also be included.

B9.2 The procedure for determining the amount of oxygen required and the quantity that is available. The flight profile, number of occupants and possible cabin decompression must be considered. The information provided must be in a form in which it can be used without difficulty.

B10 Cabin crew- Checklist for emergency, safety equipment & instructions for its use

The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.

B11 Emergency Evacuation Procedures

Emergency evacuation procedures, including typespecific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.

B11.1 Emergency evacuation procedures. A description of the duties of all members of the crew for the rapid evacuation of an aeroplane and the handling of the passengers in the event of a forced landing, ditching or other emergency.

B11.2 The ground/air visual codes for use by survivors, description and use of signal aids.

B12 Aeroplane Systems

A description of the aeroplane systems, related controls, indications and operating instructions.

B13 Aeroplane Instruments, Equipment and Flight Documents that includes the requirements for MEL, all aircraft on all flights, flight recorder, all aeroplanes operated as VFR flights and IFR flights, over designated land areas, on flights over water, on long-range over-water flights, , high altitude flights, icing conditions, operated at night, weather radar, radiation indicator, complying with the noise certification Standards, Mach number indicator, ground proximity warning systems (GPWS), cabin crew seats, Emergency locator transmitter (ELT), airborne collision avoidance system (ACAS II), pressure-altitude reporting transponder, Microphones, forward-looking wind shear warning system, a single pilot under the Instrument Flight Rules (IFR) or at night, is followed.

B13.1 Instructions for the preservation of flight recorder records and, if necessary, associated flight recorders to the extent possible, in the event that the aeroplane becomes involved in an accident or incident.

B13.2 Procedures for the retention of flight recorder records and flight recorders in safe custody pending their disposition.

7.3 Part C - AREAS, ROUTES AND AERODROMES

C1 Provision of a route guide as a part of flight safety document system, to ensure that the flight crew will have, for each flight, information relating to navigation aids, communication facilities, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.

C2 Instructions and information relating to including minimum flight levels and altitudes for each route to be flown and operating minima for each aerodrome planned to be used, including:

- a) Minimum flight level/altitude for each route to be flown;
- b) Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes;

- c) The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities.

C3 The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of:

- a) Take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;
- b) Take-off climb, En-route climb, Approach and landing climb limitations;
- c) Landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance; and
- d) Supplementary information, such as tire speed limitations
- e) Communication facilities and navigation aids;
- f) Availability of aerodrome facilities, runway data, communication failure procedures, MET services and aeronautical information;
- g) Approach, missed approach and departure procedures including noise abatement procedures;
- h) Search and rescue facilities in the area over which the aeroplane is to be flown;
- i) A description of the aeronautical charts that must be carried on board in relation to the type of flight and the route to be flown, including the method to check their validity;
- j) Aerodrome categorisation for flight crew competence qualification;

7.4 Part D- TRAINING REQUIREMENTS

D1 General

D1.1 A training manual (Part D of Operations Manual) as part of the flight safety documents system shall be developed, published, distributed and revised which shall includes training programmes and syllabi for initial, recurrent, transition (conversion), re-qualification, upgrade, recency of experience, familiarization, differences, safety management and/or other specialized training, as applicable. The Manual or a part thereof shall also include:

- a) Training policies and directives;
- b) Administrative support of air operator;
- c) List of designated instructors and line check airmen;
- d) Comprehensive syllabi, including lesson plans for approved training;
- e) Procedures for the conduct of examinations and manoeuvre tolerances;
- f) Procedures to require that flight crew members are properly trained and examined on abnormal and emergency conditions;
- g) Procedures for remedial training and subsequent examination of flight crew unable to achieve or maintain required standards;
- h) ACAS training programme for pilots on 'ACAS equipped aircraft';
- i) If a separate training organization is approved to provide air operators' crew training, the training provided and flight documentation used to correctly reflect the operators' flight safety documents system.

- D1.2 Provisions for adequate ground and flight training facilities, flight simulation training devices, computer-based training (CBT), etc.) and syllabus materials.
- D1.3 Adequate procedures to ensure that all the necessary requirements are included in the training manual, which shall be reviewed by the authority before granting the AOC.

D2 Flight Crew Training Programme

- D2.1 The training programme shall include details of the initial and recurrent flight crew training programme and shall:
- a) Consist of ground and flight training (in the types of aeroplane on which the flight crew member serves), and shall include proper flight crew coordination and training in all types of emergency or abnormal situations or procedures caused by powerplant, airframe or systems malfunctions, fire or other abnormalities;
 - b) Include training in knowledge and skills related to CRM, human performance and in the transport of dangerous goods;
 - c) Be given on a recurrent basis, as determined by the Authority and shall include an examination to determine competence;
 - d) Include annual training in accomplishing the emergency duties and functions and shall include instruction in the use of all emergency and lifesaving equipment required to be carried, and drills in the emergency evacuation of the aeroplane.
- D2.2 The training for each flight crew member, particularly which relates to abnormal or emergency procedures shall ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members. The requirement for recurrent flight training in a particular type of aeroplane shall be considered fulfilled by:
- a) The use, to the extent deemed feasible by the Authority, of aeroplane synthetic flight trainers approved by that State for that purpose; or
 - b) The completion within the appropriate period of the proficiency check in that type of aeroplane.
- D2.3 The training shall cater for the following:
- a) Prohibition of in-flight simulation of emergency or abnormal situations when passengers or cargo are being carried;
 - b) Flight training may, to the extent deemed appropriate by the Authority, be given in aeroplane synthetic flight trainers approved by the Authority or the State where it is located for that purpose;
 - c) The scope of the recurrent training may be varied and need not be as extensive as the initial training given in a particular type of aeroplane;
 - d) The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by the Authority, be utilized in meeting the requirements for periodic ground training.

D2.4 The requirement for recurrent flight training in a particular type of aeroplane may be considered fulfilled if:

- a) The use, to the extent deemed feasible by the Authority, of aeroplane synthetic flight trainers approved by the Authority for that purpose; or
- b) The completion of the proficiency check twice within any period of one year in that type of aeroplane to check Piloting technique, Ability to execute emergency procedures and Compliance with IFR.

D2.5 Part D shall also include:

- a) Instructions and training requirements for the avoidance of controlled flight into terrain (CFIT) and policy for the use of the enhanced ground proximity warning system (EGPWS);
- b) Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS);
- c) Established for its pilots an ACAS training programme for pilots on ACAS.

D3 Cabin Crew training programme

D3.1 The training Manual or a part thereof shall include:

- a) A training programme on cabin crew duties, approved by the Authority, to be completed by all persons before being assigned as a cabin crew prior to the issuance of an AOC;
- b) A recurrent training programme, approved by the Authority including an examination to determine competence, annually.

D3.2 The training programmes shall include theoretical and practical training addressing atleast the following:

- a) Basic indoctrination in the different functions, duties and responsibilities of cabin crew members;
- b) Introduction to aircraft systems and limitations;
- c) Aircraft emergency evacuation, life-safety equipment and related information to passengers;
- d) Cabin crew members assignment, coordination and two-way communication;
- e) Knowledge and skills related to the transport of dangerous goods;
- f) Security procedures to enable cabin crew to discreetly communicate to flight crew in the event of suspicious activity or security breaches in the passenger cabin;
- g) CRM.

D3.3 Competency, duties and Obligation

D3.4 Minimum requirements for selecting and appointing cabin crew instructors, LCC and DCCC.

- D3.5 Requirements for maintaining, on a recurrent basis, knowledge, skills and qualifications of cabin crew instructors and DCCCs.
- D3.6 A surveillance programme by the Authority to ensure that the appointed instructors and examiners for cabin crew maintain their competency with respect to delegated tasks.

D4 FOO Training Programme: The training Manual or a part there of shall include:

- D4.1 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision prior to the issuance of an AOC.
- D4.2 The training programme, duties and responsibilities (privileges) of flight operations officer/flight dispatcher shall essentially cover the contents as specified in ICAO Annex 6 Pt 1. The training programme shall cater for:
- a) Civil air law and regulations
 - b) Aviation indoctrination
 - c) Use of operations manual
 - d) Aircraft performance
 - e) Navigation
 - f) Flight planning and monitoring
 - g) Rules of the air, communication and air traffic management
 - h) Meteorology
 - i) Mass and balance control
 - j) Use of MEL/CDL
 - k) Transport of dangerous goods by air
 - l) Security procedures
 - m) Emergency response plan
 - n) Flight observation
 - o) Recurrent training programme
 - p) Minimum requirements for the air operator to select and appoint flight dispatch/flight operations officers ground instructors
 - r) Requirement to maintain on a recurrent basis, the knowledge, skills and qualifications of flight dispatch/flight operations officers ground instructors

D4.3 Minimum requirements to select and appoint flight dispatch/flight operations officers ground instructors in accordance with ICAO Annex 6 pt-1.

D4.4 Requirement to maintain, on a recurrent basis, the knowledge, skills and qualifications of flight dispatch/flight operations officers ground instructors in accordance with ICAO Annex 6 pt-1.

D5 Dangerous Goods: The training Manual (Ops Manual Part D) shall include:

D5.1 Dangerous Goods Training Requirements: In accordance with ICAO Technical instructions, specific training programmes to be established and

maintained for/by:

- a) Shippers of dangerous goods, including packers and shippers agents;
- b) Air operators;
- c) Agencies which perform, on behalf of the operator, the act of accepting, handling, loading, unloading, transferring or other processing of cargo;
- d) Agencies located at an aerodrome which perform, on behalf of the operator, the act of processing passengers;
- e) Agencies not located at an aerodrome which perform, on behalf of the operator, the act of checking in passengers;
- f) Agencies other than operators involved in processing cargo;
- g) Agencies engaged in the security screening of passengers and their baggage.

D5.2 Dangerous goods procedures and training programmes:

- a) Dangerous goods procedures and training programmes incorporated in either the operations manual or in a separate document as a part of the flight safety documents system;
- b) Dangerous goods training programmes review and approval requirement by OPS,IACM;
- c) A training programme for ground and flight personnel, still when not authorized to transport dangerous goods by air;
- d) Procedures to convey information to emergency services and to appropriate authorities in the event of an incident or accident of an aircraft carrying dangerous goods.

D6 Security: The training Manual (Ops Manual Part D) shall include:

D6.1 Security training programme addresses, as applicable, at least the following:

- a) Security of the flight crew compartment;
- b) Aircraft search procedure checklist and guidance on least-risk bomb locations where practicable;
- c) Determination of the seriousness of any occurrences;
- d) Crew communication and coordination;
- e) Appropriate self-defence responses;
- f) Use of non-lethal protective devices assigned to crew members whose use is authorized by the Authority or the State of the Operator;
- g) Understanding of behaviour of terrorists;
- h) Live situational training exercises regarding various threat conditions;
- i) Flight deck procedures to protect the aeroplane;
- j) Post-flight concerns for the crew.

D7 Crew Resource Management: Contents of training programme shall be in accordance with human factor principle and shall be approved by the Authority.

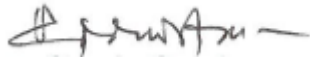
8. COMPLIANCE WITH OPERATIONS MANUAL

- 8.1 An Operator shall be responsible to ensure that the crew members of an aircraft and the personnel employed by an Operator on operational control duties comply with all instructions relating to their duties which are contained in Operations Manual.

9. IMPLEMENTATION

This Circular shall be implemented with immediate effect.

EXECUTIVE CHAIRMAN



Afonso Sande Cuinhane
Instituto de Aviação Civil de Moçambique

APPENDIX TO OPS CIRCULAR 40/12

ORGANIZATION AND CONTENTS OF AN AIR OPERATOR

- OPERATIONS MANUAL

1. ORGANIZATION

An operations manual, may be issued in separate parts corresponding to specific aspects of operation. The Operator shall provide, for the use and guidance of Operations personnel concerned, an Operations Manual. The Operations Manual shall be amended or revised as necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be approved by IACM and issued to all personnel that are required to use the manual. (Should include a statement that the Accountable Manager will ensure that the Operations Manual is kept current at all times). The Operations Manual should be organized with the following structure:-

PART A - GENERAL;

PART B - AIRCRAFT OPERATING INFORMATION;

PART C - AREAS, ROUTES AND AERODROMES; AND

PART D - TRAINING.

2. CONTENTS

2.1 In addition to other guidance, the Operations manual referred to above shall contain at least the following:

PART A - GENERAL

2.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.

2.1.2 Rules limiting the flight time and flight duty periods and providing for adequate rest periods for flight crew members and cabin crew as follows:-

An operator shall formulate rules to limit flight time and flight duty periods and for the provision of adequate rest periods for all its crew members. These rules shall be in accordance with the MOZCARs, and included in the operations manual.

2.1.3 A list of the navigational equipment to be carried including any requirements relating to operations where performance-based navigation is prescribed.

2.1.4 Where relevant to the operations, the long-range navigation procedures, engine failure procedure for ETOPS and the nomination and utilization of diversion aerodromes.

2.1.5 The circumstances in which a radio listening watch is to be maintained.

2.1.6 The method for determining minimum flight altitudes.

2.1.7 The methods for determining aerodrome operating minima.

2.1.8 Safety precautions during refueling with passengers on board.

2.1.9 Ground handling arrangements and procedures.

2.1.10 Procedures, as prescribed in Rules of the Air and Air Traffic Control, for pilots-in-command observing an accident.

2.1.11 The flight crew for each type of operation including the designation of the succession of command.

2.1.12 Specific instructions for the computation of the quantities of fuel and oil to be carried, having regard to all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more power-units while en route.

2.1.13 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with the following:-

A flight to be operated with a pressurized aeroplane shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa. In addition, when an aeroplane is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, if operated at flight altitudes at which the atmospheric pressure is more than 376 hPa and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, there shall be no less than a 10-minute supply for the occupants of the passenger compartment.

2.1.14 Instructions for mass and balance control.

2.1.15 Instructions for the conduct and control of ground de-icing/anti-icing operations.

2.1.16 The specifications for the operational flight plan.

2.1.17 Standard operating procedures (SOP) for each phase of flight.

2.1.18 Instructions on the use of normal checklists and the timing of their use.

2.1.19 Departure contingency procedures.

2.1.20 Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out.

2.1.21 Instructions on the use of autopilots and auto throttles in IMC.

2.1.22 Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.

2.1.23 Departure and approach briefings.

2.1.24 Procedures for familiarization with areas, routes and aerodromes.

2.1.25 Stabilized approach procedure.

2.1.26 Limitation on high rates of descent near the surface.

2.1.27 Conditions required to commence or to continue an instrument approach.

2.1.28 Instructions for the conduct of precision and nonprecision instrument approach procedures.

2.1.29 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach and landing operations.

2.1.30 Instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system (GPWS).

2.1.31 Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS).

Note.— Procedures for the operation of ACAS are contained in ICAO PANS-OPS (Doc 8168), Volume I, Part VIII, Chapter 3, and in PANS-ATM (Doc 4444), Chapters 12 and 15.

2.1.32 Information and instructions relating to the interception of civil aircraft including:

- a) Procedures, as prescribed in the Rules of the Air and Air Traffic Regulations, for pilots-in-command of intercepted aircraft; and
- b) Visual signals for use by intercepting and intercepted aircraft, as contained in the Rules of the Air and Air Traffic Regulations.

2.1.33 For aeroplanes intended to be operated above 15 000 m (49 000 ft):

- a) Information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and
- b) Procedures in the event that a decision to descend is taken, covering:

- 1) the necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and
- 2) the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted.

2.1.34 Details of the accident prevention and flight safety programme provided in accordance and including a statement of safety policy and the responsibility of personnel, to be developed in accordance with the following:-

- a) An operator shall establish and maintain an accident prevention and flight safety programme.

Note.— Guidance on accident prevention is contained in the Accident Prevention Manual (Doc 9422) and in the Preparation of an Operations Manual (Doc 9376).

- b) *An operator of an aeroplane of a maximum certificated take-off mass in excess of 27 000 kg shall establish and maintain a flight data analysis programme as part of its accident prevention and flight safety programme.*

Note.— An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

- c) *A flight data analysis programme shall be nonpunitive and contain adequate safeguards to protect the source(s) of the data.*

Note.— Guidance on flight data analysis programmes is contained in the ICAO Accident Prevention Manual (Doc 9422).

2.1.35 Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.

Note.— Guidance material on the development of policies and procedures for dealing with dangerous goods incidents on board aircraft is contained in Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods (Doc 9481).

2.1.36 Security instructions and guidance.

2.1.37 The search procedure checklist provided in accordance with the following:-

An operator shall ensure that there is on board a checklist of the procedures to be followed in searching for a bomb in case of suspected sabotage and for inspecting aeroplanes for concealed weapons, explosives or other dangerous devices when a well-founded suspicion exists that the aeroplane may be the object of an act of unlawful interference. The checklist shall be supported by guidance on the appropriate course of action to be taken should a bomb or suspicious object be found and information on the least-risk bomb location specific to the aeroplane.

PART B - AIRCRAFT OPERATING INFORMATION

2.2.1 Certification limitations and operating limitations.

2.2.2 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto required as follows:-

The operator shall provide operations staff and flight crew with an aircraft operating manual, for each aircraft type operated, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual shall observe Human Factors principles

2.2.3 Operating instructions and information on climb performance with all engines operating,

The operator should issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique. This information should be included in the operations manual.

2.2.4 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.

2.2.5 The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.

2.2.6 Instructions and data for mass and balance calculations.

2.2.7 Instructions for aircraft loading and securing of load.

2.2.8 Aircraft systems, associated controls and instructions for their use

The operator shall provide operations staff and flight crew with an aircraft operating manual, for each aircraft type operated, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual shall observe Human Factors principles.

2.2.9 The minimum equipment list and configuration deviation list for the aeroplane types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.

2.2.10 Checklist of emergency and safety equipment and instructions for its use.

2.2.11 Emergency evacuation procedures, including type specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.

2.2.12 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.

2.2.13 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.

2.2.14 The ground-air visual signal code for use by survivors, as contained in the Rules of the Air and Air Traffic Control Regs.

PART C- ROUTES AND AERODROMES

2.3.1 A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.

2.3.2 The minimum flight altitudes for each route to be flown.

2.3.3 Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes.

2.3.4 The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities.

2.3.5 The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of:

- a) Take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;
- b) Take-off climb limitations;
- c) En-route climb limitations;
- d) Approach climb limitations and landing climb limitations;
- e) Landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance; and
- f) Supplementary information, such as tire speed limitations.

PART D - TRAINING

FLIGHT CREW TRAINING PROGRAMME

2.4.1 Details of the flight crew training programme, required as follows:-

An operator shall establish and maintain a ground and flight training programme, approved by the **IACM**, which ensures that all flight crew members are adequately trained to perform their assigned duties. Ground and flight training facilities and properly qualified instructors as determined by **IACM** shall be provided.

The training programme shall consist of ground and flight training in the type(s) of aeroplane on which the flight crew member serves, and shall include proper flight crew coordination and training in all types of emergency or abnormal situations or procedures caused by powerplant, airframe or systems malfunctions, fire or other abnormalities. The training programme shall also include training in knowledge and skills related to human performance and in the transport of dangerous goods. The training for each flight crew member, particularly that relating to abnormal or emergency procedures, shall ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members. The training programme shall be given on a recurrent basis, as determined by **IACM** and shall include an examination to determine competence.

Note 1.— An Operator shall ensure that when passengers or cargo are being carried, no emergency or abnormal situations shall be simulated..

Note 2.— Flight training may, to the extent deemed appropriate by IACM, be given in aeroplane synthetic flight trainers approved by IACM for that purpose.

Note 3.— The scope of the recurrent training required by Note 1 and Note 2 may be varied and need not be as extensive as the initial training given in a particular type of aeroplane.

Note 4.— The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by IACM,, be utilized in meeting the requirements for periodic ground training.

Note 5.— Provisions for training in the transport of dangerous goods are contained in MOZCARs Part 92. and

Note 6.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the ICAO Human Factors Training Manual (Doc 9683).

CABIN CREW TRAINING PROGRAMME

2.4.2 Details of the cabin crew duties training programme as required as follows:-

An operator shall establish and maintain a training programme, approved by the IACM, to be completed by all persons before being assigned as a cabin crew member. Cabin crew shall complete a recurrent training programme annually. These training programmes shall ensure that each person is:

- a) *Competent to execute those safety duties and functions which the cabin crew member is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;*
- b) *Drilled and capable in the use of emergency and lifesaving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment and first aid kits;*
- c) *When serving on aeroplanes operated above 3 000 m (10 000 ft), knowledgeable as regards the effect of lack of oxygen and, in the case of pressurized aeroplanes, as regards physiological phenomena accompanying a loss of pressurization;*
- d) *Aware of other crew members' assignments and functions in the event of an emergency so far as is necessary for the fulfilment of the cabin crew member's own duties;*
- e) *Aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin and has completed the dangerous goods training programme required by MOZCARs Part 92. and*
- f) *knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew coordination.*

Note.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the ICAO Human Factors Training Manual (Doc 9683).

- *Details on selection and appointment of Cabin Crew Instructors and Inspectors*
- *Details on maintenance on a recurrent basis, knowledge, skills and qualifications of Cabin Crew Instructors and Inspectors.*

FLIGHT OFFICER/DISPATCHER TRAINING PROGRAMME

2.4.3 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with operational and supervision duties.

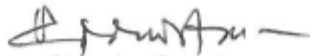
A flight operations officer/flight dispatcher should not be assigned to duty unless that officer has:

- a) *Made within the preceding 12 months, at least a one-way qualification flight on the flight deck of an aeroplane over any area in which that individual is*

authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

- b) Demonstrated to the operator a knowledge of:*
 - 1) the contents of the operations manual described in in this AIC.*
 - 2) the radio equipment in the aeroplanes used; and*
 - 3) the navigation equipment in the aeroplanes used;*
- c) Demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:*
 - 1) the seasonal meteorological conditions and the sources of meteorological information;*
 - 2) the effects of meteorological conditions on radio reception in the aeroplanes used;*
 - 3) the peculiarities and limitations of each navigation system which is used by the operation; and*
 - 4) the aeroplane loading instructions;*
- d) Demonstrated to the operator knowledge and skills related to human performance relevant to dispatch duties; and*
- e) Demonstrated to the operator the ability to perform the duties specified in 4.6.*
 - Details on minimum requirements for the Air Operator for the selection and appointment of Flight Dispatcher Officer Instructors.*
 - Details on the maintenance on a recurrent basis, knowledge, skills and qualifications for Flight Operation Officer Instructors.*

EXECUTIVE CHAIRMAN



Afonso Sande Cuinhane
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