MOZAMBIQUE CIVIL AVIATION

TECHNICAL STANDARDS

PART 121
MOZ-CATS-OPS 121
AIR TRANSPORT OPERATIONS – LARGE AEROPLANES

MOZAMBIQUE CIVIL AVIATION TECHNICAL STANDARDS: CATS
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MOZAMBIQUE CIVIL AVIATION TECHNICAL STANDARDS: CATS RELATING TO AIR TRANSPORT OPERATIONS – LARGE AEROPLANES

INTRODUCTION

1. GENERAL

Decree 41 of 2001 empowers the Director General for Civil Aviation to issue technical standards for civil aviation on the matters which are prescribed by regulation.

2. PURPOSE

Document MOZ-CATS-OPS 121 contains the standards, rules, requirements, methods, specifications, characteristics and procedures, which are applicable in respect of Air Operator operating large aeroplanes

Each reference to a technical standard in this document, is a reference to the corresponding regulation in the Mozambique Civil Aviation Regulations, for example, technical standard 121.01.3 refers to regulation 3 of Subpart 01 of Part 121 of the Regulations.

The abbreviation “MOZ-CAR” is used throughout this document when referring to any regulation.

The abbreviation “TS” refers to any technical standard.

3. SCHEDULES AND NOTES

Guidelines and recommendations in support of any particular technical standard are contained in schedules to, and/or notes inserted throughout the technical standards.

LIST OF TECHNICAL STANDARDS

121.01.3 EXEMPTIONS

1. Exemptions

(1) The Director may, on application, exempt any person or aeroplane involved in or used for emergency operations, from the provisions of Part 121, on condition that the Director is satisfied that –

(a) exceptional circumstances prevail which necessitates the exemption;

(b) there is a need for the exemption; and

(c) an acceptable level of safety is maintained.

(d) an acceptable alternative means of compliance .

(2) The Director may determine any supplementary condition that he or she deems necessary in order to ensure that an acceptable level of safety is maintained and the public interest is served.

(3) An application for an exemption must be made pursuant to the provisions of Part 11.

121.01.11 SUBCHARTERING

1. Subchartering

An operator may subcharter an aeroplane in circumstances where such operator is faced with an immediate, urgent and unforeseen need for a replacement aeroplane .

121.02.3 CREW MEMBER EMERGENCY DUTIES

1. Emergency evacuation demonstration

An emergency evacuation demonstration must be performed by the flight crew members in accordance with the following:

(1) Actual operation of all types of exits;

(2) demonstration of the method used to operate a slide where fitted;

(3) actual fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire except that, with Halon extinguishers, an approved alternative method may be used;

(4) the effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment;

(5) actual handling of pyrotechnics, real or simulated, where fitted; and

(6) demonstration in the use of the life-raft(s) where fitted.

2. Aborted take-off demonstration

(1) The demonstration must be conducted either during the dark or during daylight with the dark simulated. If the demonstration is conducted indoors during daylight hours, it must be conducted with each window covered and each door closed to minimise the daylight effect. Illumination on the floor or ground may be used, but it must be kept low and shielded against shining into the aeroplane's window or doors.

(2) The aeroplane must be in normal ground attitude with landing gear extended.

(3) Unless the aeroplane is equipped with an off-wing descent means, stands or ramps may be used for descent from the wing to the ground. Safety equipment such as mats or inverted life rafts may be placed on the floor or ground to protect participants. No other equipment that is not part of the emergency evacuation equipment of the aeroplane may be used to aid the participants in reaching the ground.

(4) The aeroplane's normal electrical power sources must be de-energised.

(5) All emergency equipment for the type of passenger-carrying operation involved must be installed in accordance with the operations manual.

(6) Each external door and exit, and each internal door or curtain must be in position to simulate a normal take-off.

(7) A representative passenger load of persons in normal health must be used. At least 40 percent of the passenger load must be females. At least 35 percent of the passenger load must be over 50 years of age. At least 15 percent of the passenger load must be female and over 50 years of age. Three life-size dolls, not included as part of the total passenger load, must be carried by passengers to simulate live infants 2 years old or

younger. Flight crew members, mechanics, and training personnel, who maintain or operate the aeroplane in the normal course of their duties, may not be used as passengers.

(8) No passenger may be assigned a specific seat except as the Authority may require. Except as required by item (12) of this paragraph, an employee of the operator may be seated next to an emergency exit.

(9) Seat belts and shoulder harnesses (as required) must be fastened.

(10) Before the start of the demonstration, approximately one-half of the total average amount of carry-on baggage, blankets, pillows, and other similar articles must be distributed at several locations in the aisles and emergency exit access ways to create minor obstructions.

(11) The seating density and arrangement of the aeroplane must be representative of the highest capacity passenger version of that aeroplane the operator operates or proposes to operate.

(12) Each flight crew member must be a member of a regularly scheduled line crew, except that flight crew members need not be members of a regularly scheduled line crew, provided they have knowledge of the aeroplane. Each flight crew member must be seated in the seat the flight crew member is normally assigned for take-off, and must remain in that seat until the signal for commencement of the demonstration is received.

(13) No flight crew member or passenger may be given prior knowledge of the emergency exits available for the demonstration.

(14) The operator may not practice, rehearse, or describe the demonstration for the participants nor may any participant have taken part in this type of demonstration within the preceding 6 months.

(15) The pre-take-off passenger briefing may be given in accordance with the operations manual. The passengers may also be warned to follow directions of flight crew members, but may not be instructed on the procedures to be followed in the demonstration.

(16) If safety equipment as allowed by item (3) of this paragraph is provided, either all passenger and flight deck windows must be blacked out or all of the emergency exits must have safety equipment in order to prevent disclosure of the available emergency exits.

(17) Not more than 50 percent of the emergency exits in the sides of the fuselage of an aeroplane that meet all of the requirements applicable to the required emergency exits for that aeroplane, may be used for the demonstration. Exits that are not to be used in the demonstration, must have the exit handle deactivated or must be indicated by red lights, red tape, or other acceptable means, placed outside the exits to indicate fire or other reason that they are unusable. The exits to be used must be representative of all of the emergency exits on the aeroplane and must be designated by the operator, subject to approval by the Director. At least one floor level exit must be used.

(18) Except as provided in item (3), all evacuees must leave the aeroplane by a means provided as part of the aeroplane's equipment.

(19) The operator's approved procedures and all of the emergency equipment that is normally available, including slides, ropes, lights, and megaphones, must be fully utilised during the demonstration, except that the flight crew must take no active role in assisting others inside the cabin during the demonstration.

(20) The evacuation time period is completed when the last occupant has evacuated the aeroplane and is on the ground. Evacuees using stands or ramps allowed by item (3) above are considered to be on the ground when they are on the stand or ramp: Provided that the acceptance rate of the stands or ramps is no greater than the acceptance rate of the means available on the aeroplane for descent from the wing during an actual crash situation.

3. Ditching demonstration

The demonstration must assume that daylight hours exist outside the aeroplane, and that all required flight crew members are available for the demonstration.

(1) If the operations manual requires the use of passengers to assist in the launching of liferafts, the needed passengers must be on board the aeroplane and participate in the demonstration according to the manual.

(2) A stand must be placed at each emergency exit and wing, with the top of the platform at a height simulating the water level of the aeroplane following a ditching.

(3) After the ditching signal has been received, each evacuee must don a life vest according to the operations manual.

(4) Each liferaft must be launched and inflated, according to the operations manual, and all other required emergency equipment must be placed in rafts.

(5) Each evacuee must enter a liferaft, and the flight crew members assigned to each liferaft must indicate the location of emergency equipment aboard the raft and describe its use.

(6) Either the aeroplane, a mockup of the aeroplane or a floating device simulating a passenger compartment must be used as follows:

(a) If a mockup of the aeroplane is used, it must be a life-size mockup of the interior and representative of the aeroplane currently used by or proposed to be used by the operator, and must contain adequate seats for use of the evacuees. Operation of the emergency exits and the doors must closely simulate those on the aeroplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation;

(b) if a floating device simulating a passenger compartment is used, it must be representative, to the extent possible, of the passenger compartment of the aeroplane used in operations. Operation of the emergency exits and the doors must closely simulate operation on that aeroplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation. The device must be equipped with the same survival equipment as is installed on the aeroplane, to accommodate all persons participating in the demonstration.

121.02.5 CABIN CREW MEMBER COMPLEMENT

1. Minimum number of cabin crew

(1) An operator must ensure that, when carrying one or more passengers, not less than one cabin crew member is carried for every 50 passenger seats, or part thereof, installed on the same deck of the large aeroplane: Provided that the minimum number of cabin crew members carried is not less than the number of cabin crew members who actually participated in the emergency evacuation demonstration referred to in MCAR 121.02.3 or were assumed to have taken part in the relevant analysis required during the certification of the large aeroplane.

(2) A large aeroplane with a maximum certificated passenger seating capacity of more than nine seats but less than 20 seats, which is crewed by two flight deck crew members, need not carry a cabin crew member: Provided that the duties of the flight deck crew members regarding briefing and control of passengers in all situations are specified in the operations manual referred to in MCAR 121.04.2, and such flight deck crew members are qualified to perform such duties and responsibilities.

(3) An air operator certificate holder shall schedule, and the pilot-in-command shall ensure that the minimum number of required cabin crew members are on board passenger-carrying flights.

(4) The number of cabin crew members may not be less than the minimum prescribed by the Authority in the air operator certificate holders' operations provisions or the following, whichever is greater-

(a) in the case of an aircraft with a total seating capacity of twenty to fifty passengers, one cabin crew member;

(b) in the case of an aircraft with a total seating capacity of not more than two hundred, the number of cabin crew members carried on the flight shall be not less than one cabin crew member for every fifty, or a fraction of fifty passengers carried;

(c) in the case of an aircraft with a total seating capacity of more than two hundred, the number of cabin crew members carried on the flight shall be not less than half the number of the main exits in the aircraft, and in addition, when more than two hundred passengers are carried, one additional cabin crew member for every twenty-five, or a fraction of twenty-five, of the passengers above two hundred.

(5) Where the number of cabin crew members specified in sub-regulation (2), calculated in accordance with that sub-regulation exceeds the number of main exits in the aircraft, it shall be sufficient compliance with this regulation if the number of cabin crew members carried is equal to the number of main exits in the aircraft.

(6) Where passengers are on board a parked aircraft, the minimum number of cabin crew members shall be half of the number required for the flight operation, but in any case a minimum of one cabin crew member or another person qualified in the emergency evacuation procedures for the aircraft.

(7)Where one-half of the cabin crew members specified in sub-regulation (1) would result in a fractional number, the tally of requisite cabin crew members may be rounded down to the next whole number.

(8) Notwithstanding the provisions of this regulation, the Authority may direct an air operator certificate holder to include among the crew, whenever the aircraft is flying for the purpose of commercial air transport operations, at least one cabin crew members notwithstanding that the aircraft may be carrying fewer than twenty passengers.

121.02.6 OPERATING ON MORE THAN ONE TYPE OR VARIANT BY CABIN CREW MEMBER

1. Type or variant of aeroplane

(1) With the approval of the Authority cabin crew may operate on four aeroplane types if emergency exits and safety equipment are similar.

(2) When assessing if a fourth aeroplane type is permissible the following factors must be taken into consideration:

(a) Similarity of emergency procedure and drills; and
(b) similarity and location of emergency equipment.

(3) When assessing aeroplane variants as same types the following factors must be taken into consideration:

(a) The variant has the same type of exits with identical operating mechanisms;

(b) emergency procedure and drills are essentially the same; and

(c) emergency equipment on board each variant is essentially the same and that its location is standardised. Aeroplane variants not meeting these criteria are considered to be a separate aeroplane type.

121.02.10 FLIGHT TIME AND DUTY PERIODS

1. Definitions

"days off" means periods available for leisure and relaxation, no part of which forms part of a duty period. A single day off must include two local nights. Consecutive days off must include a further local night for each consecutive day off. A rest period may be included as part of a day off;

"duty period" means any continuous period throughout which either a flight crew member flies in any aeroplane, whether as a flight crew member or as a passenger, at the behest of his or her employer, or otherwise carries out a required duty in the course of his or her employment. It includes any flight duty period, positioning at the behest of the operator, ground training, office duties, flight watch, home reserve and standby duty;

"flight duty period" means any time during which a person operates in an aeroplane as a member of its flight crew. It starts when the flight crew member is required by an operator to report for a flight, and finishes at on-chocks or engines off, on the final sector for that flight crew member;

"flight watch" means a period of time during which a flight crew member be required to check with the operator at specified times as to whether his or her services as a flight crew member will be required and, should this be the case, will report for duty at the time then specified;

"home reserve" means a period of time during which a flight crew member must be prepared to respond to a call out for flight duties as yet unspecified. The flight crew member must report for duty within a specified time from call out;

"local night" means a period of eight hours falling within the ten hour period from 21h00 to 07h00 local time;

"positioning" means the practice of transferring flight crew from place to place as passengers in surface or air transport at the behest of the operator;

"rest period" means the period of time during which a crewmember is released from all official duty or contact by the company. This period must exclude all time spent commuting by the most direct route, between the company designated rest facility and assigned duty station, but in no case less than one half hour in each direction and, a specified period of prone rest with at least one additional hour provided for physiological needs;

"split duty" means a flight duty period which consists of two or more flight duties which are separated by less than the minimum rest period;

"standby duty" means a period of time during which a flight crew member is in a position to commence a flight duty at once.

2. Requirements of the MCAR

(1) MOZCAR 121.02.10 requires that an operator of an aeroplane must have a scheme for the regulation of flight times and duty times of his or her flight crews.

(2) MOZCAR 121.02.10 also requires that a flight crew member may not fly, and an operator may not require that flight crew member to fly, if either has reason to believe

that he or she is suffering or is likely to suffer while flying, from such fatigue as may endanger the safety of the aeroplane or of its occupants.

(3) Every flight crew member is required to inform the operator of all flying he or she has undertaken if the cumulative amount of such flying and any scheduled duties is likely to exceed the maximum laid down in the Regulations.

3. Operators' schemes and their approval

(1) An operator must submit a proposed scheme for the regulation of flight time and duty periods and minimum rest periods to the Authority for approval and the flight time should not exceed a hundred and five hours in twenty eight consecutive days.

(2) Any deviation from the approved scheme must be submitted to the Authority for consideration.

(3) Non-availability of auto pilot or auto stabilisation systems requires a reduction in flight time and duty period in respect of public air transport and IFR operations.

4. General principles of control of flight, duty and rest time

(1) The prime objective of any scheme of flight time limitations is to ensure that flight crew members are adequately rested at the beginning of each flight duty period. Aeroplane operators will therefore need to take account of inter-related planning constraints on –

(a) individual duty and rest periods;

(b) the length of cycles of duty and the associated periods of time off; and

(c) cumulative duty hours within specific periods.

(2) Duties must be scheduled within the limits of the operator's scheme. To allow for unforeseeable delays the pilot-in-command may, within prescribed conditions, use his or her discretion to exceed the limits on the day. Nevertheless, flight schedules must be realistic, and the planning of duties must be designed to avoid as far as possible exceeding the flight duty limits.

(3) Other general considerations in the sensible planning of duties are –

(a) the need to construct consecutive work patterns which will avoid as far as possible such undesirable rostering practices as alternating day/night duties and the positioning of flight crews in a manner likely to result in a serious disruption of established sleep/work patterns;

(b) the need, particularly where flights are carried out on a programmed basis, to allow a reasonable period for the preflight notification of duty to flight crews, other than those on standby; and

(c) the need to plan time off and also to ensure that flight crews are notified of their allocation well in advance.

5. Responsibilities of flight crew members

It is the responsibility of all flight crew members to make optimum use of the opportunities and facilities for rest provided by the operator, and to plan and use their rest periods properly so as to minimise the risk of fatigue.

6. Standard provisions required for an operator's scheme

(1) The standard provisions which the Authority regards as the basis for an acceptable scheme of flight and duty limitations and which, if included in an operator's scheme, will facilitate approval by the Authority are contained in paragraphs 7 to 13 below.

(2) Although operators are expected to plan their schemes in accordance with the requirements, it is however, recognised that the standard provisions will not necessarily be completely adaptable to every kind of operation. In exceptional circumstances therefore operators may apply to have variations from the standard provisions included in their schemes. However, such variations should be kept to a minimum and approval will only be granted where an operator can show that these proposed provisions will ensure an equivalent level of protection against fatigue.

7. Limitations of single flight duty periods – flight deck crew

7.1 Maximum rostered flight duty periods

The maximum rostered flight duty period (FDP) (in hours) must be in accordance with Table 1, or Table 2 or 3, or Table 4 or 5 below. Rostering limits in the tables may be extended by in-flight relief or split duty under the terms of paragraphs 7.2 and 7.3. On the day, the pilot-in-command may at his or her discretion further extend the FDP actually worked in accordance with paragraph 7.6.

(1) Maximum FDP – Two pilot crews: Aeroplanes

Table 2 applies when the FDP starts at a place where the flight crew member is acclimatised to local time, and Table 3 applies to other times. To be considered acclimatised for the purpose of this technical standard, a flight crew member must be allowed three consecutive local nights free of duty within a local time zone band which is two hours wide. He or she will thereafter be considered to remain acclimatised to that same time zone band until he or she ends a duty period at a place where local time falls outside this time zone band.

(2) Maximum FDP – Two pilots plus additional flight crew member: Aeroplanes

Table 4 applies when the FDP starts at a place where the flight crew member is acclimatised to local time, and Table 5 applies at other times. To be considered acclimatised for the purposes of this technical standard, a flight crew member must be allowed three consecutive local nights free of duty within a local time zone band which is two hours wide. He or she will thereafter be considered to remain acclimatised to that same time zone band until he or she ends a duty period at a place where local time falls outside this time zone band.

TABLE 1: MAXIMUM FLIGHT DUTY PERIOD: SINGLE PILOT CREWS
Aeroplanes certified for single pilot operations

Report for duty Local time	Sectors vs Maximum Duty Periods				
	0 to 4	5	6	7	8 or more

0500 – 0659	10	11	6	8.5	8
0700 – 1359	10	10.25	9.25	8.75	8
1400 – 2059	9	9.25	9.5	8	8
2100 – 2159	9	8.25	8	8	8

TABLE 2: MAXIMUM FLIGHT DUTY PERIOD: TWO FLIGHT CREW MEMBERS
Aeroplanes: Acclimatised to local time

Report for duty Local Time	Sectors vs Maximum Duty Periods							
	1	2	3	4	5	6	7	8 +
0500 – 0659	13	12.25	11.5	10.75	10	9.25	9	9
0700 – 1359	14	13.25	12.5	11.75	11	10.25	9.5	9
1400 – 2059	13	12.25	11.5	10.75	10	9.25	9	9
2100 – 2159	12	11.25	10.5	9.75	9	9	9	9
2200 – 0459	11	10.25	9.5	9	9	9	9	9

TABLE 3: MAXIMUM FLIGHT DUTY PERIOD: TWO FLIGHT CREW MEMBERS
Aeroplanes: Not acclimatised to local time

Previous Crew Rest Period In Hours	Sectors vs Maximum Flight Duty Periods						
	1	2	3	4	5	6	7+
Up to 18 hrs or, over 30 hrs.	13	12.25	11.5	10.75	10	9.25	9
Between 18 and 30 hrs.	12	11.25	10.5	9.75	9	9	9

TABLE 4: MAXIMUM FLIGHT DUTY PERIOD: THREE FLIGHT CREW MEMBERS
Aeroplanes certified for three crews members: Acclimatised to local time

Report for Duty Local Time	Sectors vs Maximum Flight Duty Periods							
	1	2	3	4	5	6	7	8 +
0500 – 0659	13	12.25	11.5	10.75	10	9.25	9	9

0700 – 1359	14	13.25	12.5	11.75	11	10.25	9.5	9
1400 – 2059	13	12.25	11.5	10.75	10	9.25	9	9
2100 – 2159	12	11.25	10.5	9.75	9	9	9	9
2200 – 0459	11	10.25	9.5	9	9	9	9	9

TABLE 5: MAXIMUM FLIGHT DUTY PERIOD: THREE FLIGHT CREW MEMBERS
Aeroplanes certified for three flight crew members: Not acclimatised to local time.

Previous Crew Rest Period In Hours	Sectors vs Maximum Flight Duty Periods						
	1	2	3	4	5	6	7+
Up to 18 hrs or, over 30 hrs.	13	12.25	11.5	10.75	10	9.25	9
Between 18 and 30 hrs.	12	11.25	10.5	9.75	9	9	9

7.2 Extension of flight duty period by in-flight relief

(1) When any additional flight crew member is carried to provide in-flight relief for the purpose of extending a FDP, he or she must hold qualifications which will meet the requirements of the operational duty for which he or she is required as a relief.

(2) When in-flight relief is provided, there must be available, for the flight crew member who is resting, a comfortable reclining seat or bunk separated and screened from the flight deck and passengers.

(3) A total of in-flight rest of less than three hours will not count towards extension of an FDP, but where the total of in-flight rest (which need not be consecutive) is three hours or more, the rostered FDP may be extended beyond that permitted in Tables 2 and 3 or 4 and 5 by:

(a) If rest is taken in a bunk, a period equal to one half of the total of rest taken, provided that the maximum FDP permissible is 18 hrs (or 19 hrs in the case of cabin crew members); and

(b) if rest is taken in a seat, a period equal to one third of the total of rest taken, provided that the maximum FDP permissible is 15 hrs (or 16 hrs in the case of cabin crew members).The maximum extension allowable is equivalent to that applying to the basic flight crew member with the least rest.

(4) Where a flight crew member undertakes a period of in-flight relief and after its completion is wholly free of duty for the remainder of the flight, that part of the flight following completion of duty may be classed as positioning and be subject to the controls on positioning detailed in paragraph 7.4.

7.3 Extension of flying duty period by split duty

(1) When a FDP consists of two or more duties separated by less than a minimum rest period, then the FDP may be extended beyond that permitted in the tables by the amounts indicated below:

Consecutive hour rest	Maximum extension of the FDP
Less then 3 hours	Nil
3 – 10 hours	A period equal to one-half of the consecutive hours of rest taken

(2) The rest period must not include the time required for immediate post-flight and pre-flight duties. When the rest period is not more than six hours it will be sufficient if a quiet and comfortable place with convenient facilities for physiological needs and not open to the public is available, but if the rest period is more than six consecutive hours, then a full rest facility must be provided.

7.4 Positioning

All time spent on positioning as required by the operator is classed as duty, but positioning does not count as a sector when assessing the maximum permissible FDP. Positioning, as required by the operator, which immediately precedes a FDP, is included as part of the FDP for the purpose of paragraph 7.1.

7.5 Traveling time

(1) Traveling time other than that time spent on positioning may not be classed as duty time and may not be included in cumulative totals of duty hours.

Note: Traveling time from home to departure aerodrome can become an important factor if long distances are involved. If the journey time from home to the normal departure aerodrome is lengthy, flight crew members should make arrangements for accommodation nearer to their bases to ensure adequate pre-flight rest.

(2) Where traveling time between the aerodrome and sleeping accommodation provided by the operator exceeds thirty minutes each way, the rest period must be increased by the amount of the excess, or such lesser time as is consistent with a minimum of ten hours at the sleeping accommodation.

(3) When flight crew members are required to travel from their home to an aerodrome other than the one from which they normally operate, the assumed traveling time from the normal aerodrome to the other aerodrome is classed as positioning and is subject to the controls of positioning detailed in paragraph 7.4.

7.6 Pilot-in-command's discretion to extend a flight duty period

(1) A pilot-in-command may, at his or her discretion, extend a FDP beyond the maximum normally permitted, provided he or she is satisfied that the flight can safely be made. In these circumstances the maximum normally permitted is calculated according to what actually happens, not on what was planned to happen. The operator's scheme must include guidance to pilots-in-command on the limits within which discretion to extend a FDP may be exercised. An extension of three hours beyond the maximum normally permitted should be regarded as the maximum, except in cases of emergency.

(2) Whenever a pilot-in-command so exercises his or her discretion, he or she must report it to the operator and, should the maximum normally permitted be exceeded by more than two hours, both the pilot-in-command and the operator

must submit a written pilot-in-command's discretion report – extension of flying duty period, to the Director within thirty days.

Notes:

1. **Discretion reports either concerning extension of a flight duty period or reduction of a rest period must be submitted in the form contained in Annexure A. Those reports will be used by the Director when assessing the realism of particular schedules.**

2. **An emergency in respect of an extension of a flight duty period is a situation which in the judgment of the pilot-in-command presents serious risk to health or safety.**

7.7 Delayed reporting time

When flight crew members are informed of a delay before leaving their place of rest the FDP starts at the new reporting time or four hours after the original reporting time, whichever is the earlier. The maximum FDP is based on the original reporting time. This paragraph does not apply if flight crew members are given ten hours or more notice of a new reporting time.

8. Rest periods

(1) It is the responsibility of the operator to notify flight crew members of a flight duty period so that adequate and within reason, uninterrupted pre-flight rest can be obtained by the flight crew. Also, once a flight, or series of flights is in progress, it is normally the company's responsibility to make arrangements for transportation and adequate crew rest facilities. The operator must release the crew from duty for that purpose and in accordance with all regulatory requirements and approved company policy. Should occasions arise where unforeseen operational situations make it more expeditious for the crew members to obtain proper rest, the company may authorize the pilot in command to secure such accommodation.

(2) (a) Each duty period, including flight watch and home reserve, must be preceded by a rest period of at least:

(i) Nine consecutive hours including a local night; or

(ii) ten consecutive hours; or

(iii) if the preceding FDP, adjusted for split duty, exceeds eleven hours, an additional rest period must be provided for in the operator's scheme to the satisfaction of the Commissioner.

(b) Where a flight crew member has completed two consecutive duty periods, the aggregate of which exceeds eight hours flight time or eleven hours duty time (extensions by in-flight relief or split-duty disregarded), and the intervening rest period has been less than twelve consecutive hours embracing the hours between 11h00 and 06h00 local time, he or she must have a rest period on the ground of at least twelve consecutive hours embracing the hours between 22h00 and 06h00 local time or so much longer as to embrace these hours prior to commencing any further duties, but not necessarily larger than twenty four consecutive hours; provided that this requirement does not apply in respect of consecutive flight watch and home reserve duties.

(c) Following fifty hours of duty of any nature associated with his of her employment, except flight watch and home reserve duty, a flight crew member must have a

rest period of not less than twenty-four consecutive hours before commencing further duties.

(d) When a flight crew member has completed a flight time and duty period in excess of eighteen hours, he or she must receive a rest period of at least eighteen hours including a local night before he or she commences any further duties.

(e) Time on flight watch and home reserve duty may be counted towards the required rest periods preceding a period of duty.

(3) Pilot-in-command's discretion to reduce a rest period.

A pilot-in-command may, at his or her discretion, reduce a rest period to below the minimum required by paragraph 8(2) and 12(2)(b). The exercise of such discretion must be considered exceptional and should not be used to reduce successive rest periods. A rest period must be long enough to allow flight crew members at least eight hours, at the accommodation where the rest is taken. If a rest period is reduced, the pilot-in-command must submit a report to his or her employer, and if the reduction exceeds two hours, must submit a written report to the Director within thirty days. (See note 1 to paragraph 7.6(2)).

(4) For the purpose of calculating the minimum rest period before commencement of duties, the required post flight duties on completion of the previous FDP is added to such FDP.

9. Duty periods

The following limits apply:

(1) Maximum Duty Period for an FOO or FFO on Flight Watch Duty.

(a) No operator may schedule a flight operations officer or flight following officer to duty in excess of 10 consecutive duty hours in any 24 hour period except:

(i) where circumstances or emergency conditions beyond the control of the air operator require otherwise, and

(ii) such extension does not exceed 14 consecutive hours.

(b) Where a flight operations officer or flight following officer is required to remain on duty for more than 10 hours in any 24 consecutive hours, the subsequent rest period will be extended by an amount equal to twice that of the extension of duty.

(c) An air operator shall provide each flight operations officer or flight following officer a rest period of at least 10 hours at the conclusion of each duty period.

Duty	Maximum duration
Home reserve	No limit*
Positioning	No maximum**
Standby	Maximum 12 hours (not necessarily consecutive) in any 24 hour period

Standby + FDP	20 hours

* the provisions of item (2) applies.

** the provisions of paragraph 7.4 applies.

(2) For the purpose of calculating duty time, the following applies:

(a) For the calculation of accumulated duty time in terms of paragraph 11, flight watch and home reserve is credited on the basis of eight hours for every period of twenty four or fewer consecutive hours, or on a one-for-one basis, whichever is the lesser.

(b) Standby duty time must count fully as duty time for the calculation of accumulated duty time in terms of paragraphs 8(2)(c) and (d) and 11.

(c) See paragraph 7.4 in respect of positioning time.

10. Days off

Flight crew members must –

(1) not work more than seven consecutive days between days off; and

(2) have two consecutive days off in any consecutive fourteen days; and

(3) have a minimum of six days off in any consecutive four weeks at the aerodrome from which they normally operate; and

(4) have an average of at least eight days off in each consecutive four week period, averaged over three such periods.

11. Cumulative duty and flying hours

Maximum cumulative duty hours: The average weekly total of duty hours may not exceed sixty hours over seven days, or fifty hours averaged over any four consecutive weeks. All types of duty, flight duty, ground duty, split duty, stand-by and positioning is counted in full for this purpose. Any period of seven or more consecutive days within which the flight crew member is employed on duties other than flight duties, flight watch or home reserve, standby, office duties or positioning is not included in calculating the above average weekly total of duty hours.

12. Cabin crew members

(1) The requirements detailed in this paragraph are applicable to all cabin crew members carried as cabin crew members.

(2) The limitations which apply to cabin crew members are those contained in paragraphs 7 to 11 applicable to flight deck crew members, but with the following adjustment:

(a) Rostered flight duty periods may not be more than one hour longer than those permitted to flight deck crew members and contained in paragraph 7.1. In order to remove anomalies which might arise when cabin crew members and flight deck crew members report at different times for the same flight, the maximum

FDP for cabin crew members must be based on the time at which the flight deck crew start their flight duty period.

(b) Rostered minimum rest periods must not be more than one hour shorter than those required by flight deck crew and contained in paragraph 8(2).

(c) (i) For the purpose of a FDP extension following in-flight rest by cabin crew members, a period of a minimum of two consecutive hours of rest must allow for the extension of such FDP by half the actual rest period.

(ii) Where in-flight rest is provided for more than three hours, the provisions of paragraph 8.2(iii) apply.

(d) The combined sum of standby duty and following FDP may not exceed twenty-one hours.

(e) The average weekly total of duty hours may not exceed fifty-five hours.

(f) The annual and monthly limits on flying hours need not be applied.

13. Records to be maintained

An operator must retain all pilot-in-command discretion reports of extended flight duty periods and reduced rest periods for a period of at least six months.

121.03.1 TRAINING AND CHECKING OF CREW MEMBERS

1. Training syllabus

The training syllabus for flight crew members required in terms of MCAR 121.03.1, is –

(1) the syllabus prescribed in Parts 61, 63 and TS 121.03.9 for initial training;

(2) the syllabus prescribed in TS 121.03.3 and 121.03.10 for conversion training;

(3) the syllabus prescribed in TS 121.03.6, 121.03.12, 121.03.13 and 121.03.14 for recurrent training and checking and refresher training; and

(4) the syllabus prescribed in Part 92 for initial and refresher dangerous goods training courses.

121.03.3 CONVERSION TRAINING

1. Operator's conversion training course syllabus

(1) An operator's conversion course syllabus must include the following items:

(a) Ground training and checking including aeroplane systems, normal, abnormal and emergency procedures;

(b) emergency and safety equipment training and checking which must be completed before aeroplane training commences;

(c) flight deck crew resource management training;

(d) aeroplane/flight simulator training and checking; and

(e) line flying under supervision and line check.

(2) The conversion course must be conducted in the order set out in subparagraph (1) above.

2. Flight deck crew resource management training

The flight deck crew resource management training referred to in MCAR 121.03.3(1)(h) is the flight deck crew resource management training contemplated in TS 121.03.5.

121.03.5 UPGRADING TO PILOT-IN-COMMAND

1. Flight deck crew resource management training

1.1 Procedures

(1) If the flight deck crew member has not previously completed an operator's conversion course then the operator should ensure that a flight deck crew resource management (CRM) course with a full length syllabus is completed. The flight deck crew member should not be assessed either during or upon completion of this course.

(2) If the flight deck crew member undergoes a subsequent conversion course with the same or a change of operator, he or she should complete the appropriate elements of the CRM course. The flight deck crew member should not be assessed either during or upon completion of this training.

(3) Recurrent training:

(a) Where an operator utilizes line orientated flying training (LOFT) in the recurrent training programme, the flight deck crew member should complete elements of CRM training The flight deck crew member should not be assessed.

(b) Where an operator does not utilize LOFT, the flight deck crew member should complete elements of CRM training every year. The flight deck crew member should not be assessed.

(c) An operator should ensure that flight deck crew members complete the major elements of the full length CRM course over a four year recurrent training cycle. The flight deck crew member completing this refresher training should not be assessed.

(d) When a flight deck crew member undergoes an operator proficiency check, line check or command course, then CRM skills should be included in the overall assessment.

(4) Operators should, as far as is practicable, provide combined training for flight deck crew and cabin crew.

(5) There should be an effective liaison between flight deck crew and cabin crew training departments. Provision should be made for flight deck and cabin crew instructors to observe and comment on each others training.

(6) The successful resolution of aeroplane emergencies requires interaction between flight deck crew and cabin crew and emphasis should be placed on the importance of effective coordination and two-way communication between all flight deck crew members in various emergency situations. Initial and recurrent CRM training should include joint practice in aeroplane evacuations so that all who are involved are aware of the duties other flight crew members should

perform. When such practice is not possible, combined flight deck crew and cabin crew training should include joint discussion of emergency scenarios.

1.2 Objective and contents

(1) CRM is the effective utilisation of all available resources (e.g. flight crew members, aeroplane systems and supporting facilities) to achieve safe and efficient operation.

(2) The objective of CRM is to enhance the communication and management skills of the flight deck crew member concerned. The emphasis is placed on the non-technical aspects of flight deck crew performance.

(3) CRM training should include the following elements:

(a) Statistics and examples of human factor related accidents;

(b) human perception, learning process;

(c) situational awareness;

(d) management of workload, tired-ness or fatigue, and vigilance – management of stress;

(e) operator's standard operating procedures;

(f) personality type, delegation, leadership, effective communication skills;

(g) the CRM loop:

Concept of senergy
- Inquiry (or explore, examine, scrutinize)
- Conflict resolution
- Decision making
- Critique
- Feedback

(h) effective communication and co-ordination within the flight deck crew, and between flight crew members and other operational personnel (air traffic controllers, maintenance personnel etc);

(i) error chain and taking actions to break the error chain; and

(j) implications of automation on CRM.

(4) CRM training should also address the nature of the operator's operations as well as the associated flight crew operating procedures. This will include areas of operations which produce particular difficulties, adverse climatological conditions and any unusual hazards.

(5) CRM training should include both:

(a) Classroom training; and

(b) practical exercises including group discussions and accident reviews to analyse communication problems and instances or examples of a lack of information or flight crew management.

(6) Ideally, the CRM training course should last a minimum of 3 days, but providing the whole syllabus is covered, then a 2 day course may be acceptable. A one day course for single pilot operations may be acceptable.

(7) As part of the operations manual, the CRM course (for conversion and recurrent training) will be approved by the Director. An operator may use a course provided by another operator, if that course has already been accepted.

121.03.6 RECURRENT TRAINING AND CHECKING

1. Flight deck crew resource management training

The flight deck crew resource management training referred to in MOZCARs 121.03.6(8), is the flight deck crew resource management training contemplated in TS 121.03.5.

121.03.7 PILOT QUALIFICATION TO OPERATE IN EITHER PILOT'S SEAT

1. Training

(1) A pilot-in-command whose duties also require him or her to operate in the right-hand seat and carry out the duties of co-pilot, or a pilot-in-command required to conduct training or examining duties from the right-hand seat, must complete additional training and checking as specified in the operations manual, concurrent with the operator proficiency checks prescribed in MCAR 121.03.6. This additional training must include at least the following:

(a) An engine failure during take-off;

(b) a one engine inoperative approach and go-around;

(c) a one engine inoperative landing; and

(d) Category II or Category III operations, if applicable.

(2) When engine-out manoeuvres are carried out in an aeroplane, the engine failure must be simulated.

(3) When operating in the right-hand seat, the checks required for operating in the left-hand seat must, in addition, be valid and current.

(4) A pilot relieving as pilot-in-command must demonstrate practice of drills and procedures concurrent with the operator proficiency checks prescribed in MCAR 121.03.6, which would otherwise have been the responsibility of the pilot-in-command. Where the differences between left and right seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

(5) A pilot other than the pilot-in-command occupying the left-hand seat must demonstrate practice of drills and procedures, concurrent with the operator proficiency checks prescribed in MCAR 121.03.6 which would otherwise have been the pilot-in-command's responsibility acting as pilot non-flying. Where the differences between left and right seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

121.03.9 INITIAL TRAINING

1. Aim of training course

The aim of the cabin crew member training course is to train aspiring cabin crew members to the level of proficiency required for the issue of a cabin crew member licence. The course must comprise:

(1) A theoretical knowledge course;

(2) a practical training course;

(3) an aviation security course; and

(4) a first aid course.

2. Theoretical knowledge course

The theoretical knowledge course must consist of the following subjects:

(1) Aviation - general

(a) regulatory overview

(b) aviation terminology

(c) theory of flight

(d) physiology of flight

(e) flight deck observation flight

(2) Responsibilities

(a) operator

(b) cabin crew member

(c) civil aviation inspector

(3) Safety procedures

(a) crew coordination

(b) communication

(c) surface contamination

(d) briefings

(e) pre-flight and safety checks

(f) passenger handling

(g) passenger and flight crew seats/restraints

(h) cabin baggage

(i) electronic devices

(j) service to passengers on the ground

(k) fuelling with passengers on board

(l) pre-take-off and pre-landing

(m) propeller abnormalities

(n) apron/ramp safety

(o) turbulence

(p) crew member incapacitation

(q) flight deck protocol

(r) fuel dumping

(s) post flight duties

(t) oxygen administration

(4) Emergency procedures

(a) fire fighting

(b) smoke/fumes in the cabin

(c) rapid decompression and decompression problems

(d) evacuations

(5) Emergency equipment

(a) equipment overview

(6) Aircraft specific subjects

(a) physical description

(b) galleys

(c) communication systems

(d) lighting system

(e) water and waste systems

(f) heating and ventilation systems

(g) oxygen systems

(h) exits

(i) unique features

3. Practical training course

The practical training course must consist of the following drills and checks:

(1) Public address system and interphone system drill;

(2) passenger briefing drill;

(3) aircraft exit operation drill;

(4) evacuation drill;

(5) life raft drill;

(6) aircraft slide drill;

(7) fire fighting drill;

(8) oxygen equipment drill;

(9) pre-flight check;

(10) pre-take-off check;

(11) pre-landing check;

(12) post landing check; and

(13) pilot incapacitation drill.

4. Aviation security course

The aviation security course must consist of the following subjects:

(1) Introduction to operator security

(a) Requirement for cabin crew members to comply with minimum aviation security standards prescribed by the IACM and organisation security policies/ procedures

(b) An overview of passenger screening, carry-on baggage screening, checked baggage security, mail/cargo security as it relates to cabin crew members.

(c) Responsibilities of holders of airport restricted areas passes including the requirement to challenge persons in restricted areas who are not wearing passes.

(d) Protection of cabin crew members' personal belongings.

(e) Flight crew baggage – identification/procedures.

(f) Protection of organisation property – manuals, procedures, uniforms, passes, videos, identification and inadvertent communication of information.

(g) An overview of the regulations pertaining to operator security and the minimum aviation security standards and other aeronautical legislation pertain-ing to security issues, prescribed by the IACM.

(2) Passenger security

(a) Pilot-in-command's authority.

(b) Restraint of passengers.

(c) Crew procedures for passenger restraint.

(d) Procedures on the ground.

(e) Assault by passengers on cabin crew members.

(f) Passenger restraining equipment.

(g) Disruptive/intoxicated passengers.

(h) Carriage of persons in custody/ deportees.

(i) Measures relating to VIP passengers.

(3) Security of the aircraft

(a) Communication between cabin crew members of possible threats to security.

(b) Pre-flight checks/inspection of an aircraft prior to departure (cabin).

(c) Admittance to the flight deck operating crew, passengers and IACM inspectors.

(d) Measures to prevent unauthorised access to aircraft not in service.

(e) Security measures relating to catering.

(f) Post-flight checks/inspections of an aircraft after landing (cabin).

(4) Management of security incidents

(a) An understanding of the role and responsibilities of aerodrome operators, police and other agencies in the management of a security incident.

(b) Requirement to report incidents and procedures.

(c) Information required at time of reporting a security related incident.

(5) Definitions

The cabin crew members must have the knowledge of the following terms:

(a) Bomb threat;

(b) disembarking/evacuation;

(c) explosives disposal expert;

(d) firearms;

(e) hijacking;

(f) peace officer;

(g) restricted area;

(h) sabotage;

(i) sterile area; and

(j) weapon

(6) Bomb threats - aircraft on the ground

(a) Crew advisory/briefing.

(b) Disembarkation/evacuation.

(c) Search of the aircraft after disembarkation/evacuation.

(d) Re-entering the aircraft.

(e) Communication with passengers.

(f) Communication with authorities and organisation.

(7) Bomb threat - aircraft in flight

(a) Pilot-in-command responsibilities.

(b) Crew advisory/briefing.

(c) Communication with pas-sengers.

(d) Search of the aircraft while in flight.

(e) Awareness of components of an explosive device.

(f) Locating a suspect device.

(g) Protecting a suspect device.

(h) Awareness of procedure empl-oyed when moving a suspect device.

(i) Areas of lowest risk for re-locating of suspect device.

(j) Disposal of suspect device over-board.

(k) Disembarkation/evacuation upon landing.

(l) Re-entering the aircraft.

(m) Communication with authorities and organisation.

(8) Hi-jacking

(a) Crew-advisory/briefing.

(b) Company policies.

(c) General tactics.

(d) Tactics specific to on-flight.

(e) Tactics specific to on-ground.

(f) Coded signals.

(g) Conclusion of hi-jack incident.

(h) Communication with authorities and organisation.

5. First aid

The first aid course must consist of the following subjects:

(1) Principles of first aid

(a) Objectives of first aid

(b) Responsibility of cabin crew member

(c) First aid equipment and materials

(2) In-flight medical emergency scene management

(3) Casualty assessment and movement/ positioning

(a) Examine and assess a casualty

(b) Move and positioning a casualty

(4) Artificial respiration - adult

(a) Respiratory emergencies

(b) Mouth-to-mouth direct method of artificial respiration

(c) Mouth-to-mouth direct method of artificial respiration - casualty with a suspected neck injury.

(d) Follow-up care - restored breathing

(5) Artificial respiration - child and infant

(a) Artificial respiration - child

(b) Mouth-to-mouth and nose method of artificial respiration - infant

(6) Choking - Adult, child and infant

(a) Causes of choking

(b) Recognise choking

(c) Choking adult and child

(d) The methods by which a conscious choking adult and child can assist themselves.

(e) The first aid for a complete airway obstruction on a simulated, choking adult and child casualty when the adult or child is -

(i) conscious;

(ii) conscious who becomes unconscious; and

(iii) found unconscious.

(f) State two instances when chest thrusts should be used on an adult casualty:

(i) Advanced pregnancy; and

(ii) markedly obese.

(g) State how to perform chest thrusts on a woman casualty in the advanced stages of pregnancy or a markedly obese casualty:

(i) Conscious; and

(ii) unconscious.

(h) Choking infant

(i) Follow-up care - complete airway obstruction

(k) Allergic reaction

(l) Describe the treatment:

(m) Respiratory emergencies

(n) First aid - Respiratory emergencies

(7) Shock, unconsciousness, fainting, stroke and seizures

(a) Shock.

(b) Shock positions.

(c) Levels of consciousness.

(d) Unconscious casualty.

(e) Fainting.

(f) First aid - fainting.

(g) Recognise a stroke.

(h) First aid - stroke.

(i) Epileptic seizure.

(j) First aid - epileptic seizure.

(k) Convulsions - children and adults.

(l) First aid - convulsions - children and adults.

(8) Wounds and bleedings

(a) External and internal bleeding

(b) Contamination and infection of wounds

(c) Control external bleeding from wounds

(d) External bleeding from a wound - embedded object

(e) First aid - internal bleeding

(f) First aid - nose bleed

(g) First aid - protruding intestines

(h) Tourniquets

(9) Fractures, dislocations and sprains

(a) Fractures

(b) Rules of first aid - fractures

(c) Immobilise a fracture of the forearm

(d) Immobilise a fracture of the lower leg

(e) Immobilise a fracture of the femur

(f) Immobilise a fracture of the clavicle

(g) Joint injuries

(h) First aid - joint injuries

(i) Immobilise joint injuries

(10) Burns

(a) List the types of burns:

(b) State the classification of burns:

(c) First aid - burns

(11) Miscellaneous conditions I

(a) Head injury

(b) First aid - head injury

(c) Spinal injury

(d) Unconscious casualty - suspected spinal injury

(e) Acute abdominal distress (acute abdomen)

(f) Acute abdominal distress

(g) Poison emergencies

(h) First aid - poison by ingestion

(i) Diabetic emergencies

(j) First aid - diabetic emergencies

(12) Miscellaneous conditions II

(a) Earache (Barotrauma)

(b) Sinusitis

(c) First aid - earache and sinusitis

(d) Hyperventilation

(e) First aid - hyperventilation

(f) Air sickness

(g) First aid - air sickness

(13) Aviation medicine (physiology of flight)

(a) The physiology of respiration and circulation.

(b) Identify the body's requirement for oxygen and the potential for flight crew member incapacitation due to lack of oxygen.

(c) Describe the most common physio-logical effects of altitude and the pressurised cabin, including but not limited to dehydration, effects of trapped gases and water rentention.

(d) Effect of altitude

(14) CPR - Adult, child and infant

(a) Cardiac arrest

(b) One-rescuer CPR adult, child and infant

(15) Emergency childbirth

(a) Childbirth - imminent

(b) Preparations - emergency delivery

(c) First aid - emergency delivery

(16) Death on board

(17) Self medication

(18) Frostbite, hypothermia

(a) Cold injuries

(b) First aid - cold injuries

(19) Hypothermia

(a) Heat illnesses

(b) First aid - heat illnesses

(20) Toothache

(a) Toohache

(b) First aid - toothache

(21) Environment - passengers with respiratory problems

(a) Describe the precautions to be taken when the interior of aircraft has been sprayed with disinfectants or insecticides.

(22) Most commonly used medication

(a) Analgesics (painkillers, antihistamines, anti- allergic, anti congestants, blocked nasal passages).

(b) Appetite suppressants

(c) Anti-acids

(d) Anti nausea drugs

(e) Anti diarrhoea

(f) Anti hypertensive drugs (for high blood pressure)

(g) Flight environment changes

(h) Social chemical substances

(i) Recommendations

(i) Don't use over the counter medication on flight duty unless you have cleared it with your designated aviation medical examiner.

(ii) Avoid taking different types of medications simultaneously.

(iii) If taking "allowable" medication while on flight duty, monitor your performance and skills continuously and ask colleagues to co-monitor your performance.

(iv) If temporarily on medication which makes grounding mandatory, remember that the body should be clear of all that medicine. This may take several days after the last dosage has been taken.

Notes:

1. Equipment and procedures criteria
Training programme content and delivery must be consistent with the amount and type of equipment carried on the operator's aircraft and the operator's procedures that have been published. This should be as practical as possible.

2. Regulatory approval process
Any organisation conducting cabin crew member training must be approved by the Authority in terms of Part 141.

121.03.10 TYPE AND DIFFERENCES TRAINING

1. General

An operator must ensure that –

(1) type and differences training is con-ducted by suitably qualified persons; and

(2) during type and differences training, training is given on the location, removal and use of all emergency and survival equipment carried in the aeroplane, as well as all emergency procedures and emergency training related to the aeroplane type, variant and configuration to be operated.

2. Fire and smoke training

An operator must ensure that either –

(1) each cabin crew member is given realistic and practical training in the use of all fire fighting equipment including protective clothing representative of that carried in the aeroplane. This training must include –

(a) each cabin crew member ex-tinguishing a fire characteristic of an aeroplane interior fire except that, in the case of Halon extinguishers, an alternative ex-tinguishing agent may be used; and

(b) the donning and use of protective breathing equipment by each cabin crew member in an enclosed, simulated smoke-filled environ-ment; or

(2) each cabin crew member fulfils the recurrent training requirements of TS 121.03.12.

3. Operation of doors and exits

An operator must ensure that –

(1) each cabin crew member operates and actually opens all normal and emergency exits for passenger evacuation in an aeroplane or representative training device; and

(2) the operation of all other exits is demonstrated.

4. Evacuation slide training

An operator must ensure that –

(1) each cabin crew member descends an evacuation slide from a height representative of the aeroplane main deck sill height;

(2) the slide is fitted to an aeroplane or a representative training device; and

(3) a further descent is made when the cabin crew member qualifies on an aeroplane type in which the main deck exit sill height differs significantly from any aeroplane type previously operated.

5. Evacuation procedures and emergency situations

An operator must ensure that –

(1) emergency evacuation training includes the recognition of planned or unplanned evacuations on land or water. This training must include recognition of when exits are unusable or when evacuation equipment is unserviceable; and

(2) each cabin crew member is trained to deal with the following:

(a) An in-flight fire, with particular emphasis on identifying the actual source of the fire;

(b) severe air turbulence;

(c) sudden decompression, including the donning of portable oxygen equipment by each cabin crew member; and

(d) other in-flight emergencies.

6. Crowd control

An operator must ensure that training is provided on the practical aspects of crowd control in various emergency situations, as applicable to the aeroplane type.

7. Pilot incapacitation

An operator must ensure that, unless the minimum flight crew is more than two, each cabin crew member is trained to assist if a pilot becomes incapacitated. This training must include a demonstration of –

(1) the pilot's seat mechanism;

(2) fastening and unfastening the pilot's seat harness;

(3) use of the pilot's oxygen equipment; and

(4) use of pilots' checklists.

8. Safety equipment

An operator must ensure that each cabin crew member is given realistic training on, and demonstration of, the location and use of safety equipment where applicable, including the following:

(1) Slides, and where non self-supporting slides are carried, the use of any associated ropes;

(2) life-rafts and slide-rafts, including the equipment attached to, and/or carried in, the raft;

(3) life-jackets, infant life-jackets and flotation cots;

(4) dropout oxygen system;

(5) first aid oxygen;

(6) fire extinguishers;

(7) fire axe or crow-bar;

(8) emergency lights including torches;

(9) communications equipment, including megaphones;

(10) survival packs, including their contents;

(11) pyrotechnics (actual or representative devices);

(12) first aid kits, their contents and emergency medical equipment; and

(13) other cabin safety equipment or systems where applicable.

9. Passenger briefing/safety demonstrations

An operator must ensure that training is given in the preparation of passengers for normal and emergency situations in accordance with MOZCAR 91.07.20.

121.03.12 RECURRENT TRAINING

1. Aviation – general

1.1 Regulatory overview

1.1.1 Training objective

The cabin crew member must identify and describe the legislation relating to flight crew members.

1.1.2 Syllabus

(1) Identify and describe the specific regulations applicable to flight crew members and cabin safety and outline the applicable operator's policies and procedures including –

(a) seatbelts and related restraint systems;

(b) survival equipment, ie life rafts, life vests, survival kits;

(c) oxygen equipment;

(d) first aid kits;

(e) minimum equipment lists;

(f) floor proximity lighting;

(g) cabin fire protection;

(h) flight crew stations;

(i) infant (ie definition of);

(j) minimum flight crew requirements;

(k) passenger safety briefings;

(l) emergency duties;

(m) passenger safety briefing cards;

(n) surface contamination training;

(o) carry-on baggage;

(p) aircraft journey log/cabin log book (equivalent);

(q) liquor/drugs;

(r) refuelling (fuelling with one engine running);

(s) emergency equipment;

(t) survival equipment;

(u) duty time limitations – flight crew/cabin crew;

(v) crew rest – flight crew/cabin crew;

(w) designated flight crew rest areas/policies;

(x) cabin crew manual as part of operations manual;

(y) non-smokers legislation; and

(z) take-off and landing stations.

1.2 Physiology of flight

1.2.1 Training objective

The cabin crew member will be able to identify and describe the most common physiological effects of flight in pressurized and non-pressurized aircraft including likely causes, recognition and ways to minimize these effects.

1.2.2 Syllabus

(1) General
(Reserved.)

(2) Effect of altitude

(a) Define what is meant by decompression sickness and describe the physiological effects of pressure changes on gases in the body. Define ‘safe’ times between scuba-diving and flight.

(b) Define what is meant by hypoxia, the hazards associated with it, signs and symptoms, ways to detect it and minimize its effects.

(c) Define time of useful con-sciousness and factors affecting it.

(d) Describe the effects of oxygen deficiency on human performance and identify the importance of recognizing these signs and symptoms in other flight crew members.

(e) Identify persons most susceptible to the effects of hypoxia.

(f) Describe the effects of altitude on night vision and the impact this has on flight safety and personal safety.

1.3 Drills: Flight deck observation flights

1.3.1 Training objective

The cabin crew member will be able to recognize the duties and expectations of flight crew members as they apply to different aircraft the cabin crew member will be operating on.

1.3.2 Syllabus

(1) General

(a) Flight crew communication and flight crew coordination depend on each flight crew member having an understanding of each other's duties, responsibilities, workloads and expectations for all phases of flight. While this knowledge can be taught in a classroom, a more valid forum would be in an actual operating environment.

(b) At least one flight deck observation flight will be completed prior to a cabin crew member becoming qualified and thereafter on an annual basis. The following conditions will apply:

(i) Cabin crew members will be in uniform; however they will be in addition to the minimum flight crew and will not be assigned any normal safety or cabin service duties;

(ii) each flight deck observation flight will include a minimum of 2 take-offs and 2 landings over a total flight time of not less than 1 hour;

(iii) each flight deck observation flight will begin at the regular check-in time for the flight deck crew. Crew members will observe the normal pre-flight pilot duties ie. flight planning, weather briefing, flight deck crew briefing, pre-flight walk-around:

• Flight deck workloads and safety duties;
• flight crew communication procedures;
• flight crew coordination procedures;
• flight deck layout;
• location of emergency equipment;
• location and operation of flight deck windows;
• location and operation of flight deck escape hatches;
• location of controls and operation of pilot and observer seats;
• location and operation of flight deck oxygen; and
• location of emergency checklists.

(iv) Each cabin crew member will participate in a post-flight debriefing on the flight deck observation flight.

2. Roles and responsibilities

2.1 Training objective

The cabin crew member will be able to describe their legislated roles and responsibilities relating to their duties and in the interests of aviation safety.

2.2 Syllabus

(1) General

(a) Describe the responsibility of cabin crew members to maintain knowledge of all safety and emergency procedures relating to their duties.

(b) Identify the requirement for cabin crew members to perform their duties in accordance with the operations manual.

(c) Outline cabin crew member responsibilities to ensure all flight documentation, publications, ma-nuals are up to date and available on board and that cabin crew members are familiar with their contents. Cabin crew members are required to ensure that –

(i) competency qualification documents signed by the authorized operator personnel, as designated in the operations manual, date of expiry, specific aircraft types and series which the cabin crew member is qualified to operate on;

(ii) a record of revisions is in the FAM tracking the amendments received and when they were inserted into the FAM;

(iii) all amendments are inserted in the appropriate section of the FAM and not in their issued format, ie stapled, cello-wrapped; and

(iv) operations manual and revisions – see roles and responsibilities.

(d) Identify the responsibility of cabin crew members to report any on-board safety concerns to the pilot-in-command.

(e) Identify the requirement to keep all documentation relative to flight duties up to date at all times ie. passport, security pass.

(f) Outline cabin crew member responsibilities to ensure that all equipment and supplies are available and in good working order.

(g) Review the responsibility of cabin crew members to report unserviceable equipment following establish-ed company procedures.

(h) Review the responsibility for cabin crew members to successfully complete required training and qualifications.

(i) Define the chain-of-command and describe the authority of the pilot-in-command and describe their importance relating to flight safety.

(j) Describe the requirement to be aware of the duties and responsibilities of other flight crew members and be prepared to assume those duties, if necessary.

(k) Define the procedure regarding attending and participating in cabin crew briefings.

(l) Describe a cabin crew member under training and the duties they may perform when assigned to a flight.

(m) Review the importance of cabin crew members to be constantly alert and therefore prepared to handle any abnormal/emergency situation as it may occur.

(n) Identify the importance of cabin crew members to be constantly alert and therefore prepared to handle any abnormal/emergency situation as it may occur.

(o) Identify uniform policies and the importance of the uniform as an identifier especially in abnormal and emergency situations, and the operator's policy regarding the wearing of uniform in an emergency.

3. Safety procedures training

3.1 Flight crew coordination

3.1.1 Training objective

The cabin crew member will review the components of flight crew coordination and its importance to operational safety.

3.1.2 Syllabus

(1) Describe the importance of flight crew coordination when applying approved procedures.

(2) List the positive effects of flight crew coordination in enhancing flight safety.

(3) Outline the benefits of flight crew coordination on working environment and morale and the effect this has on flight safety.

(4) Define the one crew concept and list ways this may be achieved.

(5) Review the importance of flight crew coordination especially in abnormal and emergency situations.

(6) Discuss how poor flight crew coordination has contributed to aviation accidents and incidents and outline strategies to improve flight crew coordination.

(7) Flight deck crew to be included in the review discussions.

3.2 Communication training

3.2.1 Training objective

The cabin crew member will be able to describe and demonstrate the importance and the procedures for effective communication in normal, abnormal/ non-routine and emergency situations.

3.2.2 Syllabus

(1) General

(a) Describe the procedures for normal, abnormal/non-routine and emergency communication.

(b) Describe the importance of effective communication especially when dealing with abnormal and emergency situations.

(c) Describe the responsibility of cabin crew members to provide complete and accurate information to the pilot-in-command to assist in decision-making.

(2) Communication

(a) Review the difference between verbal and non-verbal communication and describe the effects of communicating different messages. Describe the potential hazards to flight safety if communication is not effective.

(b) Review how poor communication has contributed to aviation accidents and incidents and discuss ways to minimize these communication deficiencies.

3.3 Surface contamination training

3.3.1 Training objective

The cabin crew member will be able to define what is meant by surface contamination, describe his or her responsibilities and identify the procedures for reporting suspected surface contamination to the pilot-in-command.

3.3.2 Syllabus

(1) General

(a) Define surface contamination and hazards to flight associated with surface contamination.

(b) Define aircraft critical surfaces for each of the aircraft types in the operator's fleet.

(c) Identify an awareness of the conditions most likely to produce surface contamination.

(d) Give examples of a clean wing, and visible signs of surface contamination, eg frost, ice, snow, including rain and clear, etc.

(2) Cabin crew responsibilities

(a) Define the responsibilities of cabin crew members to report suspected surface contamination prior to take-off roll to the pilot-in-command as soon as it is discovered.

(b) State the requirement for the pilot-in-command or a person designated by the pilot-in-command, to investigate reports of suspected surface contamination.

(c) Describe the advice to passengers whenever aircraft de-icing is taking place and who is responsible for this announcement.

(3) De-icing

(a) Describe when the senior cabin crew member will be advised in adverse weather conditions whether or not de-icing will occur.

(b) Describe the different types of equipment used to accomplish de-icing. Example: cherry-picker, MCAR wash, rope, etc.

Note: Use of video or photographic material is recommended.

(c) Identify that icing conditions can recur on critical surfaces of the aircraft if the take-off is prolonged for any period of time after de-icing has occurred.

(d) Describe the possible hazards whenever de-icing is taking place, ie inhaling de-icing fluid, de-icing fluid entering cabin through open doorways, the presence of glycol fumes in the cabin. Identify the procedures to deal with these situations.

3.4 Briefings training

3.4.1 Training objective

The cabin crew member will be able to identify the different types of briefings which are required by the operations manual and the information which must be included in each.

3.4.2 Syllabus

(1) Cabin crew briefings

(a) Identify the importance of cabin crew briefings including enhancing cabin crew communication and coordination, establishing expectations and clarifying procedures. (Where operationally practicable, the pilots and cabin crew members should be encouraged to combine their briefings.)

(b) Outline when cabin crew briefings are required including normal, abnormal and emergency situations.

(c) Identify the types of flight crew briefings, ie pilot-in-command/cabin crew member and senior cabin crew member/other cabin crew members.

(d) Describe the topics to be covered in the cabin crew briefing(s).

(e) Identify the cabin crew member responsibility to ask questions if all the required information has not been given in a briefing or if the information is unclear.

(f) Identify who is required to attend each type of briefing and their expected level of preparedness and participation.

(2) Passenger briefings

(a) Review the contents of the following mandatory announcements and when they must be performed:

(i) Cabin baggage;

(ii) pre-flight safety announcement/demonstration;

(iii) after take-off;

(iv) en route turbulence;

(v) pre-landing;

(vi) after landing; and

(vii) individual pre-flight briefing for special attention passengers.

3.5 Pre-flight checks training

3.5.1 Training objective

The cabin crew member will be able to identify the importance of pre-flight checks and will define what is meant by the aircraft minimum equipment list.

3.5.2 Syllabus

(1) General

(a) Identify the importance of pre-flight checks and the impact on flight safety.

(b) Define what is meant by the Minimum Equipment List and identify the cabin items which are included.

(c) Identify types of conditions which may have airworthiness implications and which should be brought to the immediate attention of the pilot-in-command ie. cracked windows, damaged door seals, excessive water spills or leaks, obvious structural damage.

3.6 Passenger handling training

3.6.1 Training objective

The cabin crew member will be able to identify the types of passenger which may be carried and the general handling considerations which relate to safety.

3.6.2 Syllabus

(1) General

(a) Identify the requirement for passengers to comply with in-structions of flight crew members.

(b) Describe the types of passengers which may be carried including passengers who require special handling.

(c) Describe the procedures for acceptance and carriage of the following and include special handling considerations, seating and securing the persons and the equipment for all phases of the flight:

(i) Incubators;

(ii) stretchers;

(iii) disabled persons;

(iv) persons travelling with medical oxygen;

(v) child restraint system; and

(vi) guide and service animals.

(d) Identify the operator's policy for accepting or denying boarding to passengers and who is responsible for making this decision.

(e) Identify the procedures for handling special passengers including safety briefings and seating restrictions on different aircraft types.

(f) Outline the regulatory requirements regarding passengers who appear to be impaired due to alcohol or drugs, and the operator's policies and procedures regarding alcohol service to passengers. Include cabin crew responsibilities in serving passengers who appear to be impaired.

(2) Passenger boarding

(a) Define cabin crew member respon-sibilities for passenger supervision while the aircraft is on the ground, including boarding, disembarking and station stops. Include the number of cabin crew members that must be present in the aircraft for the above.

(b) Review the importance of safety duties over service duties during passenger boarding.

3.7 Passenger and flight crew seats/restraints training

3.7.1 Training objective

The cabin crew member will be able to identify the requirements and established procedures relating to on-board seating for passengers and flight crew members.

3.7.2 Syllabus

(1) Passenger seating

(a) Outline the requirement for each person to have a seat with an individual safety belt.

(b) Define exit row and describe the operator's policy and procedures regarding exit row seating, and who may not occupy seats in these rows.

(c) Describe the procedures associated with the relocation of passengers in compliance with exit row seating policies.

(d) Describe where special attention passengers may be seated, taking into consideration proximity to exits, availability of supplemental oxygen, ease of evacuation etc.

(e) Identify the passenger seating restriction on aircraft equipped with upper deck/lower deck passenger seating where applicable.

(f) Outline the seating restrictions regarding arm held infants.

(g) Describe the procedures for the use of on-board skycots, stating when these devices may be used, and restrictions regarding the occupant of the skycot.

(h) Describe the requirement for passengers to be seated in their assigned seats for take-off, landing and whenever advised by a cabin crew member. Describe the required positioning of seats for seats for take-off and landing.

(i) Describe the different types of seat belts/harnesses found on passenger seats on aircraft in the fleet, and the correct method of operation for each.

(j) Identify any placards or signage associated with passenger seating and describe appropriate usage. Example: "Seat Unserviceable", "For Crew Use Only".

(2) Flight crew seating

(a) Identify the persons authorized to occupy any of the flight crew seats on board and who has the authority to make this decision.

(b) Describe the importance of ensuring serviceability of cabin crew seats, who is responsible to ensure this, when to check serviceability.

(c) Identify the components of a pre-flight serviceability check for a cabin crew seat eg. "sit and fit" to enable quick access.

(d) Describe the procedures to follow and approved alternate seating in case of an unserviceable cabin crew seat.

(e) Describe the requirements for cabin crew to be seated with restraint system fastened for taxi (except for safety related duties), take-off, landing and turbulence whenever directed to do so by the pilot-in-command.

(f) Identify rationale behind wearing the seat belt and shoulder harness and the hazards of improper use. Examples: “Seat Unserviceable”, “For Crew Use Only”.

(g) Identify the signals/verbal command for cabin crew members to take their assigned seats and to secure themselves. State who is responsible for these signals.

3.8 Cabin baggage training

3.8.1 Training objective

The cabin crew member will be able to define what is meant by cabin baggage and will describe the procedures for accepting and stowing cabin baggage and any applicable restrictions.

3.8.2 Syllabus

(1) Passenger cabin baggage

(a) Describe cabin baggage policies and procedures with respect to approved storage areas.

(b) Identify the safety implications of improperly stowed cabin baggage.

(c) Identify the cabin crew responsibilities for ensuring that all carry-on baggage is correctly stowed when required.

(d) Describe the operator’s procedures for dealing with carry-on baggage that cannot be correctly stowed.

(e) Outline the operator’s policies and procedures for the carriage of live animals in the passenger cabin.

(f) Describe the cabin crew responsibility for monitoring cabin baggage security during flight.

(g) Identify the effects of cabin baggage on weight and balance (as applicable to the operator’s fleet).

(h) Describe the approved procedures for accepting and restraining seat-loaded baggage and cargo in the passenger cabin, and approved devices/equipment for accomplishing this.

(i) Describe the requirement to keep the exit areas clear and free from obstructions, such as cabin baggage.

(j) Describe the requirement to maintain clear access to emergency equipment.

(k) Describe safety precautions for cabin personnel when opening overhead bins, and when handling items of cabin baggage in order to prevent personal injury.

(2) Flight crew carry-on baggage

(a) Describe the policies and procedures for stowing flight crew baggage in the passenger cabin including accepting baggage from deadheading flight crew.

(b) Identify the flight crew carry-on baggage stowage locations for each aircraft type.

3.9 Electronic devices training

3.9.1 Training objective

The cabin crew member will be able to define what is meant by electronic devices, and describe policies and procedures for their acceptance and use on board aircraft.

3.9.2 Syllabus

(1) General

(a) Identify the electronic devices most likely to be carried on board aircraft.

(b) List the potential hazards to flight safety associated with these electronic devices.

(c) Describe the operator's policy/procedures relating to electronic devices and list exceptions to these regulations.

(d) Review the safety concerns associated with the use of "walkman" type headsets during critical phases of flight, abnormal operations, boarding and disembarking across an open ramp.

3.10 Service to passengers on the ground training

3.10.1 Training objective

The cabin crew member will be able to review what is meant by service to passengers on the ground, the conditions under which this can be accomplished and the procedures to do so.

3.10.2 Syllabus

(1) Cabin crew responsibilities

(a) Review the need for flight crew communication and whenever passenger service is being offered on the ground, ie cabin crew to let pilot know service is taking place and pilot to let cabin crew know how much time before taxiing.

(b) State the requirement for the pilot-in-command to give cabin crew adequate notice prior to taxi so that equipment and supplies may be stowed and pre-take-off duties can be completed.

3.11 Fuelling with passengers on board training

3.11.1 Training objective

The cabin crew member will be able to identify the regulatory requirements regarding fuelling with passengers on board and the procedures established for this situation.

3.11.2 Syllabus

(1) General

(a) List the potential hazards associated with fuelling aircraft to occupants and the aircraft.

(b) Identify the types of fuelling procedures which require that passengers and flight crew be off-loaded and why the potential hazard is greater.

(c) Describe the procedures and precautions for fuelling with passengers on board.

(d) Define what is meant by designated evacuation exits during fuelling and associated procedures.

(2) Cabin crew responsibilities

(a) Identify flight crew responsibilities and communication when fuelling with passengers on board.

(b) Describe the fuel leak or spill procedures and identify the communication and coordination procedures cabin crew members are responsible for as contained in the operations manual.

(c) Describe the procedures whenever fumes are detected in the cabin including flight crew communication and the decision to disembark passengers.

3.12 Pre-take-off and pre-landing training

3.12.1 Training objective

The cabin crew member will be able to identify safety procedures associated with take-off and landing and be able to implement them.

3.12.2 Syllabus

(1) Cabin crew responsibilities

(a) Identify when cabin crew members are required to violate the sterile flight deck rule. Describe safety related information that should be conveyed and the requirement to be clear, concise, specific and

(b) Define “silent review” and identify the components, when it must be done and who is required to complete it.

(2) Abnormal situations

(a) Define “rejected take-off”, and describe the associated procedures.

(b) Define “missed approach” and describe the associated procedures.

(c) Define abnormal landing situations eg. no landing gear, partial landing gear, burst tires/deflated tires.

(d) Identify cabin, galley and passenger safety checks.

3.13 Propeller abnormalities training

3.13.1 Training objective

The cabin crew member will be able to identify the characteristics of an overspeeding and a runaway propeller and be aware of the procedures associated with this situation.

3.13.2 Syllabus

(1) General

(a) Define what is meant by over-speeding propeller/runaway propeller, and emergencies that may occur as a result.

(b) Describe how to recognize these propeller malfunctions and their effect on flight characteristics.

(c) Identify the flight crew communication procedures associated with these propeller abnormalities.

(d) Outline the procedures for relocating passengers.

(e) Identify propeller abnormalities, propeller functioning turn/no turn.

3.14 Apron safety training

3.14.1 Training standard

The cabin crew member will be able to identify the components of apron safety, the responsibilities for passenger movement on aerodrome aprons and the procedures established to accomplish this safety.

3.14.2 Syllabus

(1) Hazards on aprons

(a) Identify the hazards associated with aerodrome apron example: aircraft/ground service traffic, noise and weather, foreign objects.

(b) Describe the hazards associated with traffic on the apron including aircraft movement, propellers, jet blast/exhaustion vehicles.

(2) Cabin crew responsibilities

(a) Identify the established procedures and requirements for escorting passengers across aerodrome aprons.

(b) Describe the coordination required between cabin crew members and ground staff to ensure passenger safety ie. stairs in place, props are secured and ways to achieve it.

3.15 Turbulence training

3.15.1 Training objective

The cabin crew member will be able to identify the hazards associated with turbulence and the procedures for ensuring passenger and cabin crew safety during periods of in-flight turbulence.

3.15.2 Syllabus

(1) General

(a) Describe turbulence and the classification of turbulence ie. light, moderate, severe. (A.I.P)

(b) List the potential hazards to aircraft, flight crew and passengers in turbulence.

(2) Cabin crew responsibilities

(a) Identify the importance of flight crew communication and flight crew coordination in conditions of turbulence and describe communication and coordination procedures.

(b) Describe safety advice to passengers during turbulence.

(c) Outline the cabin crew responsibilities to ensure that passengers comply with requirements and procedures.

3.16 Flight crew member incapacitation training

3.16.1 Training objective

The cabin crew member will be able to identify the procedures for dealing with an incapacitated flight crew member.

3.16.2 Syllabus

(1) General

(a) Define what is meant by incapacitated flight crew member and identify possible causes, ie. illness, injury, death, physical and mental incapacitation, food poisoning.

(b) Identify the impact on flight safety of an incapacitated pilot or cabin crew member on different aircraft types in the fleet.

(c) Identify the preferred locations for relocating incapacitated flight crew members on different aircraft in the operator's fleet.

(d) Identify how and where to secure an incapacitated flight crew member for landing or during periods of in-flight turbulence.

(e) Identify the flight crew communication procedures to advise of flight crew member incapacitation including flight deck/cabin, senior cabin crew member/other flight crew members.

(2) Pilot incapacitation

(a) Identify the assistance flight crew members will be required to provide in the flight deck.

(b) Describe the procedures for assisting an incapacitated pilot.

(c) Describe and demonstrate the procedures for administering first aid oxygen to an incapacitated pilot.

(d) Describe the procedures for removing an incapacitated pilot from the flight deck.

(3) Cabin crew incapacitation

(a) Identify the cabin crew coordi-nation procedures to ensure that the safety and emergency duties of the incapacitated cabin crew member are assumed; who is responsible for this decision.

(b) Outline the procedures associated with incapacitated cabin crew members (including procedures for dealing with more than one incapacitated cabin crew member).

3.17 Post-flight duties training

3.17.1 Training objective

The cabin crew member will be able to identify their post-flight safety related duties.

3.17.2 Syllabus

(1) Documentation

Describe the safety related documentation which must be completed after each flight and who is responsible for its completion.

(2) Communication

In instances of a flight crew change, identify the responsibility of the flight crew to brief the

new cabin crew regarding any unserviceabilities, special passengers, any other safety related matters pertinent to their flight.

4. Emergency procedures training

4.1 Fire fighting training

4.1.1 Training objective

The cabin crew member will be able to identify the types of fire, fire detection and fire fighting systems and the established fire fighting procedures.

4.1.2 Syllabus

(1) General

(a) Identify hazards associated with on board fires including toxicity of fumes, flammability of cabin materials, variety of materials to burn.

(b) Identify the impediments to fire fighting on board aircraft including limited visibility due to smoke/fumes, fire fighting in confined space, difficulty in locating the source of the fire, limited resources to fight the fire and distance to suitable aerodrome for landing.

(c) Describe experience with fire accidents/incidents. Identify the safety lessons learned as a result.

(d) Define fire chemistry including the elements which must be present for fire to occur i.e. fuel, heat, oxygen, chemical reaction.

(e) List the classes of fire which may occur on aircraft Class A – combustible material fires; Class B – grease/spill fires; Class C – electrical and Class D – fire involving metals and the possible sources for these fires.

(f) Describe importance of early detection and correct recognition.

(g) Identify the characteristics and behavior of fire (i.e. what you will see, how the fire will behave) in different cabin environments, fire-propagation.

(h) Describe the means of fire smoke detection, ie. smell, auditory, visual, touch, tactile.

(i) Describe the chemical properties of each type of fire extinguisher including hazards to occupants and aircraft systems, how it extinguishes fire.

(2) Cabin crew responsibilities

(a) List fire prevention measures and cabin crew responsibilities for fire prevention including but not limited to –

(i) practising and maintaining safe work habits;

(ii) enforcing smoking regu-lations;

(iii) monitoring cabin, toilets, cargo compartments;

(iv) awareness of popped circuit breaker procedures; and

(v) prompt investigation of fire detection alarms, unusual odours, heat build-up, deformation of aircraft components, etc.

(b) Describe the importance of cabin crew coordination in fire fighting and identify ways that this may be achieved.

(c) Describe the importance of flight cabin crew communication in fire fighting and providing pilot-in-command with accurate information on fire source, location, extent/severity of fire/smoke, fire fighting actions.

(3) Procedures – cabin

(a) Describe the fire fighting procedures for specific types of fires, eg. galley, oven, lavatory, electrical, upholstery, etc.

(b) Describe the technique and procedures for fighting these fires including finding the source of the fire, type of extinguisher to use, additional fire fighting equipment needed,
technique for using extinguisher, complications to fighting this type of fire, limitations to fighting this type of fire, post-fire procedures, flight crew communication and flight crew coordination procedures, passenger-handling.

(c) Identify ways to maintain breathing comfort for cabin occupants.

(d) Define “smoke removal”, and smoke control, and describe the associated procedures on the different types of aircraft including flight crew communication, flight crew coordination and advice to passengers.

Note: May be in the aircraft type specific.

(e) Define flashover and flash-fire. Describe the cause of each and conditions under which each is likely to occur.

(4) Procedures – external

(a) Identify the types of external fires which could affect flight safety included but not limited to –

(i) engine fires;

(ii) APU and engine torching;

(iii) fuel spill/apron fires;

(iv) fires on loading bridges; and

(v) service vehicle fires.

(b) Describe established procedures for dealing with these fire situations including recognition, flight crew communication and flight crew coordination.

(c) Identify the communication and coordination required with ground personnel and describe the fire fighting assistance ground personnel can offer and the assistance cabin crew members can provide to ground personnel.

4.2 Smoke/fumes in the cabin training

4.2.1 Training objective

The cabin crew member will be able to identify the hazards associated with fumes and/or smoke in the cabin, potential sources and the established procedures if fumes and/or smoke are detected in the cabin in flight or on the ground.

4.2.2 Syllabus

(1) General
Identify the possible sources of fumes and smoke in the cabin.

(2) Flight crew responsibilities

(a) List the flight crew communication procedures associated with smoke/fumes in the cabin including how to notify the pilot-in-command of the situation and what information is required.

(b) Describe the procedures for dealing with smoke/fumes in the cabin including locating the source, notifying the pilot-in-command, flight crew coordination, ensuring passengers' breathing comfort, preparation for rapid disembarkation or evacuation.

(c) Describe the authority of the pilot-in-command to relocate passengers if smoke/fumes are present in the cabin and when this decision may be made.

4.3 Rapid decompression and decompression problems training

4.3.1 Training objective

The cabin crew member will be able to recognize the types of decompressions, cabin crew responsibilities and the established procedures for dealing with decompressions.

4.3.2 Syllabus

(1) General

(a) Identify the causes of each type of decompression (pressurisation loss) ie. fuselage failure (rapid).

(b) Describe the signs and physiological effects of each type of pressurisation loss.

(c) Describe the effects of oxygen deficiency on human performance and identify the importance in recognising these signs and symptoms in other flight crew members.

(d) Describe the effect of decompressions on any objects, persons in the immediate area.

(e) Describe the likely aircraft attitude (slow or rapid descent) in case of pressurisation loss, what is meant by safe altitude and the importance of reaching a safe altitude quickly.

(f) Identify the likely cabin conditions in all decompressions and the ways cabin crew members can ensure safety for themselves and passengers.

(2) Cabin crew responsibilities

(a) Describe the flight crew and passenger communication procedures for each type of decompression.

(b) Identify the immediate actions cabin crew members must take in the event of decompression.

(c) Describe the flight crew communication procedures ie. signal for beginning a post-decompression walkaround, who is responsible for giving this signal and when it will be given.

(d) List the cabin flight crew member duties in a post-decompression walkaround and safety priorities.

(e) Identify the importance of flight crew coordination including passenger relocation during decompressions and methods of achieving this coordination.

4.4 Evacuation training

4.4.1 Training objective

The cabin crew member will be able to identify the types of evacuations, cabin crew responsibilities and procedures relating to the different types of evacuation situations.

4.4.2 Syllabus

(1) General

(a) Identify the types of occurrences which may require evacuation or rapid disembarkation, who is responsible for this decision and the factors to be considered when making this decision.

(b) Describe the operator’s experience with accidents/incidents involving rapid disembarkments and evacuation.

(c) Outline factors affecting survivability in evacuation such as fuselage break-up, smoke, fire etc.

(d) Describe the flotation characteristics of aircraft in the fleet. Identify the factors which could adversely affect aircraft flotation in water landings ie. structural damage, weight, centre of gravity, outside conditions.

(e) Describe the different attitudes possible as a result of accidents/incidents ie. gear collapse, off-runway, shift in centre of gravity. Include the effect of different aircraft attitudes on exit usability.

(f) Describe the effect of environmental conditions in evacuations ie. strong winds, terrain, snow/ice.

(g) Identify the importance of time in evacuations and how time affects survivability in different accident situations.

(h) Describe the type of assistance which may be available at the various aerodromes in the operator's route system. Include ways cabin crew members can manage the evacuation to coordinate their actions with the ground rescue personnel.

(2) Cabin crew responsibilities

(a) Identify the responsibility of cabin crew members to assist passengers and fellow flight crew members in an evacuation and any limitation to this responsibility. Outline the conditions when cabin crew members should evacuate themselves.

(b) Describe ways to assist in-capacitated passengers and fellow flight crew members in evacuations.

(c) Describe the importance of flight crew communication in an evacuation and the established communication signals for evacuations. Include who is responsible for activating evacuation signals.

(d) Identify when cabin crew members have the authority and the responsibility to initiate an evacuation.

(e) Identify the briefings required between flight deck crew, cabin crew and passengers in an emergency situation which may require an evacuation. Include the following information in the description:

(i) Who is responsible to conduct briefing?

(ii) When and where to conduct the briefing?

(iii) What information is required?

(iv) How to conduct the briefing including time management?

(f) Describe the different types of passenger behaviour (passive, aggressive and hysteric) and identify effective ways of managing passenger behaviour in evacuations.

(g) Identify the responsibility of cabin crew members to provide leadership in an evacuation and list ways this may be achieved.

(h) Define an Able-Bodied-Person (ABP). Describe the types of persons a cabin crew member would choose for an ABP, the assistance they could provide and the special briefing instructions.

(i) Identify the responsibility of cabin crew members to assess conditions prior to opening any exit.

(3) Evacuation procedures

(a) Describe the established evacuation procedures for each of the following types of evacuation:

(i) Land evacuation – prepared and unprepared;

(ii) tidal flat;

(iii) ditching;

(iv) inadvertent water landing;

(v) evacuation with PTV mated to aircraft; and

(b) Define brace position. Describe the effect of seat pitch on preferred brace positions. Identify the brace positions for cabin crew members in forward or aft-facing seats, passengers (seat orientation as appropriate), including pregnant passengers, handicapped passengers and children and infants. Describe the effectiveness of each brace position and the importance of assuming the preferred brace position to minimize injury.

(c) Identify the signal for assuming the brace position in different evacuation situations, when it is given, who is responsible for giving it and the cabin crew responsibilities when the brace signal has been given. Identify when cabin crew members should assume the brace position if no signal has been given.

(d) Identify the shouted commands for each type of evacuation and describe the rationale behind each of the commands. Describe ways to increase the effectiveness of commands ie. voice tone, pace, volume, diction, body language, phraseology (commands in unison).

(e) Identify the evacuation procedures for each type of exit i.e. doors, windows, hatches, ventral exits, tailcones.

(f) Describe the procedures for using evacuation aids ie. slides, ramps, ropes or any other evacuation aid that is provided on the

operator's aircraft. Include instructions on operation, use and instructions to passengers for using these.

(g) Identify the inflation times for the different evacuation aids ie. slides, ramps, slide/rafts. Describe how to recognize if an evacuation device is fully inflated.

(h) Describe alternate procedures if initial inflation fails and if the inflation fails during the course of the evacuation.

(i) Describe the preferred techniques for special attention passengers using evacuation slides ie. elderly, handicapped, passengers with guide animals.

(j) Identify how cabin crew members can manage evacuations in adverse conditions ie. heavy smoke, darkness.

(k) Identify the importance of checking the cabin and flight deck, lavatories, after all passengers have been evacuated and describe how and under what conditions this should be accomplished.

(l) Identify the cabin crew responsibilities for removal of equipment when they evacuate the aircraft and under what conditions this should be accomplished.

(4) Post-evacuation

(a) Describe the responsibilities of cabin crew members after an evacuation ie. grouping passengers, assisting with first aid.

(b) Identify the importance of post-crash procedures to increase survivability in each of the survival situations. Include the following:

(i) First aid;

(ii) survival priorities;

(iii) hazards inherent in different environments;

(iv) survival skills for different environments based on aircraft and equipment and supplies carried;

(v) survival equipment; and

(vi) signalling and recovery techniques.

(c) Identify the on board equipment and supplies which cabin crew members could remove from an aircraft after an evacuation that would enhance survivability.

(d) Describe the process of accident investigation and describe the official groups tasked with accident investigation, internationally and nationally. Identify their mandate and their role in aviation safety.

(5) Accident/Incident review

(a) Describe the operator's accidents/ incidents and accidents of other operators.

(b) List the factors which had a positive and a negative effect on survivability.

Note: It is acceptable to use the accident/incident data from other operators when teaching points can be universally applied).

5. Equipment overview training

5.1 Training objective

The cabin crew member will be able to identify the location of each piece of safety and emergency equipment on board the operator's aircraft.

5.2 Syllabus

(1) General

(a) Review the location of each piece of safety and emergency equipment the operator has available on board each aircraft.

(b) Describe each piece of safety and emergency equipment the operator has available on board each aircraft on the following points:

(i) General description;

(ii) uses;

(iii) locations;

(iv) pre-flight serviceability check;

(v) removal from storage;

(vi) how to operate;

(vii) conditions for operation;

(viii) operational limitations;

(ix) operation under adverse conditions;

(x) precautions for use; and

(xi) care after use.

6. Aircraft specific training

6.1 Galleys

6.1.1 Training objectives

The cabin crew member will be able to identify the procedures relating to the use of galleys.

6.1.2 Syllabus

(1) General

(a) Identify the potential hazards of spills and leaks in galleys and describe the procedures for dealing with them.

(b) Describe what is meant by “water shut-off valves” in the galley and identify the responsibility of cabin crew members regarding these.

(c) Identify the cabin crew procedures for dealing with any electrical malfunctions in the galley.

(d) Where galleys are located on the lower deck, include the following:

(i) Policies and procedures relating to lower deck galleys;

(ii) maximum number of persons allowed in the lower deck galley;

(iii) communication procedures with lower galley cabin crew member; and

(iv) escape routes from the lower deck galley.

(e) Identify the procedures relating to lifts ie. cart-lifts/dumb waiter, how and when they are to be operated, safety features, alternate procedures if lift becomes unserviceable.

6.2 Lighting system

6.2.1 Training objective

The cabin crew member will be able to identify the different components of the interior and exterior lighting systems and be able to use them effectively in any situation.

6.2.2 Syllabus

(1) General

(a) Describe the components of the interior and exterior emergency lighting systems including portable components.

(b) Describe the duration of components of the emergency lighting system.

(c) Identify the responsibilities for activating components of the lighting system in normal and emergency situations.

(d) Describe the alternate procedures for use in case of system failure.

6.3 Water and waste systems

6.3.1 Training objective

The cabin crew member will be able to implement the correct procedures relating to these systems.

6.3.2 Syllabus

(1) General

(a) Identify the potential threat to flight safety in case of large leaks of either the water or the waste system.

(b) Describe the cabin crew responsibilities for the operation/malfunctions of the water and waste system.

(c) Describe the shut-off valves, importance, location, operation and identification.

6.4 Oxygen systems

6.4.1 Training objective

The cabin crew member will be able to recognize the components of the fixed oxygen systems and be able to use the systems effectively in any on board situation.

6.4.2 Syllabus

(1) General

(a) Describe the components of the oxygen system on board the aircraft, including flight deck, cabin sources and galleys.

(b) Describe when each of the oxygen system components is used. Include description of use for first aid, decompression and supplemental purposes.

(c) Identify the location of the components of the oxygen system including the location of O^2 masks and spares.

(d) Identify alternate procedures to access oxygen mask when the system fails.

(e) Describe the flight crew communication procedures required to activate the oxygen system.

6.5 Heating and ventilation systems

6.5.1 Training objective

The cabin crew member will be able to identify the components of the heating and ventilation systems and be able to implement correct procedures relating to these systems.

6.5.2 Syllabus

(1) General

(a) Identify the location of the heating and exhaust vents which cabin crew members need to be aware of.

(b) Describe any flight crew communication and flight crew coordination procedures when using the heating and ventilation system.

(c) Identify conditions that may occur in the cabin associated with the system ie. condensation, glycol fumes and residual oil smoke.

6.6 Exits

6.6.1 Training objective

The cabin crew member will be able to identify the features of different types of exits and be able to effectively use them in any on board situation.

6.6.2 Syllabus

(1) General

(a) Identify safety precautions associated with exit operation. Include potential hazards, eg. inadvertent slide deployment, injury to flight crew and ground personnel, etc.

(b) Identify the MEL relief given to operators when a door or slide is inoperative. Outline the conditions for this relief to be granted and the procedures which must be followed.

(2) Normal operation

(a) Describe the procedures for operating the exit in normal mode including arming/disarming and opening/closing.

(b) Identify the precautions associated with using this exit in normal mode/situations.

(c) Describe the flight crew com-munication and coordination pro-cedures, including any established signals associated with exit operation in normal situations. Identify who is responsible for ensuring that this communication occurs and the importance of this communication for flight safety.

(3) Abnormal operation (non-routine)

(a) Describe the procedures for abnormal/non-routine operation of this exit, including who is responsible for the exit operation, flight crew communication and flight crew coordination procedures.

(b) Identify any precautions for abnormal/non-routine operation of this exit.

(4) Emergency operation

(a) Describe the procedures for operating the exit in emergency mode.

(b) Identify the precautions for using this exit in emergency situations.

(c) Describe any alternate procedures for use of this exit in the event it becomes unserviceable.

(d) Identify the visual indicators that verify the off-wing slide, ramp is inflated.

(e) Describe the procedures for operating the airstairs in normal, abnormal and emergency situations. Identify the cabin crew member responsibility for airstair operation.

(f) Identify the precautions relating to use of the airstairs.

(g) Describe the flight crew communication and the coordination procedures whenever the airstairs are being used.

6.7 Unique features

6.7.1 Training objective

The cabin crew member will be able to recognize the unique features of this aircraft type or differences within the type as a result of interior configuration or manufacturer series differences.

6.7.2 Syllabus

(1) General

(a) Identify any features, procedures and/or equipment unique or different to each aircraft in the operator's fleet eg. electrical outlets, main deck cargo compartment fire/smoke detection systems.

(b) Describe each of the differences, their impact on the operator's standard operating procedures and the importance to flight safety of cabin crew members being familiar with them.

(c) Identify the function of circuit breakers in electrical panels and describe the procedures for tripped circuit breakers including reset and cabin crew communication procedures. Describe the potential hazards to flight safety if circuit breaker procedures are not followed.

7. Passenger briefing training

7.1 Passenger briefing drills

7.1.1 Equipment criteria

Demonstration equipment representative of all of the equipment used on the aircraft in the operator's fleet.

7.1.2 Performance criteria

Each cabin crew member will perform each of the following:

(1) Pre-flight safety briefing to a special attention passenger (ie. blind, physically disabled, unaccompanied minor);

(2) individual briefing to an ABP (ie. exit operation, crowd control, assisting a special attention passenger, assistance on the ground, life raft removal and launching); and

(3) perform a full passenger pre-flight safety demonstration (ie. signs, seat belts, exits, oxygen, life jacket, floor level lighting, safety features card etc.)

7.1.3 Evaluation criteria

Cabin crew member performance will be observed, rated and debriefed according to –

(1) completeness of briefing content (ie. all relevant points included);

(2) effective usage of communication techniques (ie. clarity, comprehension, absence of jargon for special attention and ABP briefing);

(3) correctly modified in accordance with requirements of the individual to whom briefing is being delivered;

(4) proper usage of eye contact body language;

(5) correct usage and simulation of the operation of each piece of demonstration equipment;

(6) synchronizes demonstrations with announcement;

(7) displays confidence and leadership;

(8) displays openness and ability to answer questions; and

(9) verifies that briefing points were understood.

7.2 Aircraft operation drills for each aircraft type

7.2.1 Equipment criteria

(1) Each drill will be performed using the appropriate aircraft or an approved training device.

(2) Individual aircraft exits may be substituted by an approved equivalent and as authorized in the training program. Exits equipped with slides must include slide attached or slide drag simulation for emergency mode operations.

(3) Floor level exits for which operations are identical under both normal and emergency conditions and which are a routine cabin crew member responsibility to open under normal conditions may be excluded from the drills specified under 7.2.2.

7.2.2 Performance criteria

(1) Each cabin crew member will operate each floor level exit type, for each aircraft type in the emergency mode that was not operated in the conduct of the drills required in 7.3.3 and perform the following:

(a) Recognise the signal for and/or the conditions under which the exit is to be opened in the emergency mode;

(b) verify the exit is in the correct mode;

(c) assess conditions outside the exit to determine exit usability (ie. clear of obstruction, fire, aircraft attitude);

(d) position escape device;

(e) open the exit in the emergency mode;

(f) secure exit in the fully open position;

(g) pull the manual inflation handle(s) and verify deployment inflation of ramp, slide);

(h) assume and maintain appropriate protective body and hand positions; and

(i) physically identify release handle(s) (ie. slide disconnect, ventral stairs, etc).

(2) Each cabin crew member will operate each cabin window or hatch exit type for each aircraft type that was not operated in the drills required in 7.3.3 and perform the following:

(a) Recognise the signal for and/or the conditions under which the exit is to be opened;

(b) assess conditions outside the exit to determine exit usability (ie. clear of obstruction, fire, aircraft attitude);

(c) open and correctly stow the exit;

(d) verbally describe correct exit placement following removal, if the training procedure differs from the operational procedure;

(e) pull the manual inflation handle(s) and verify deployment, inflation of ramp, slide;

(f) assume and maintain appropriate protective body and hand positions;

(g) physically identify location of the escape tapes or escape ropes; and

(h) physically identify release handle(s) (ie. slide disconnect, tail-cone jettison etc.)

7.2.3 Evaluation criteria

Cabin crew member performance will be observed, rated and debriefed according to the following:

(1) Acknowledgment and timely responses to signals;

(2) assessment of the conditions outside the exit to determine exit usability (ie. clear of obstruction, fire, aircraft attitude);

(3) correct usage of exit operating mechanisms including hand and body position;

(4) usage of proper terminologies and procedures;

(5) correctly positions escape device;

(6) secures exit in the fully opened position or ensures correct stowage position of exit door, window or hatch;

(7) pulls manual inflation handle(s) and verifies deployment and inflation of evacuation slide, ramp;

(8) assumes and maintains appropriate protective hand and body positions;

(9) correctly identifies release handle(s) (ie. slide disconnect, tailcone jettison, ventral stairs); and

(10) correctly applies procedures (ie. positioning of seatbacks, armrest, tray tables).

7.3 Evacuation drills

7.3.1 General

(1) Evacuations are emergency situations which cabin crew members must effectively manage using their knowledge of procedures and the resources available to them. Skills are developed and maintained through practice.

(2) It is recognized that on aircraft with more than one cabin crew member, an evacuation will likely involve multiple exits and cabin crew members. Therefore, where a drill is performed on an aircraft with more than one cabin crew member, the drill scenario will involve a “typical” number of cabin crew members. Where a cabin simulator is used to conduct the drills, the number of cabin crew members who could participate at any time, will be appropriate to the cabin simulator configuration.

(3) Each participant will perform the designated evacuation responsibilities for the assigned position. Where a double cabin crew member seat is available and would normally be occupied by two cabin crew members, the drill will be conducted to reflect this reality.

(4) A cabin crew member who is qualified exclusively on aircraft operating with one cabin crew member and who is being qualified on aircraft with more than one cabin crew member, must perform at least one drill with additional cabin crew members.

7.3.2 Simulation scenarios

(1) An evacuation drill is a training and evaluation scenario which must portray an operational flight and include abnormal and emergency occurrences and interaction amongst cabin crew members (if applicable), other cabin crew members and passengers.

(2) A drill scenario should not incorporate excessive or multiple unrelated variables that would overload a cabin crew member nor should it be limited so that there is reduced value to the exercise. The variables should differ in sequence from one drill to the next and can include, but are not limited to, the following:

(a) Unserviceable exits;

(b) inflation devices that fail or only partially inflate;

(c) aircraft attitude which will necessitate a decision to use the exit or redirect passengers;

(d) poor visibility (ie. darkness, smoke);

(e) incapacitated flight crew members;

(f) exits which become unusable during the evacuation;

(g) special needs passengers (ie. elderly, handicapped);

(h) passengers in panic (ie. positive, negative, false leadership);

(i) failure of aircraft emergency systems (ie. lighting, evacuation signal, communication);

(j) decompression; and

(k) exits which require the use of non-standard “commands” (ie. ramp with slide).

7.3.3 Unprepared land and unprepared water evacuation drill performance criteria

(1) Each cabin crew member will perform at least one land and one unprepared water evacuation drill that incorporates the procedures pertinent to a specific exit and perform the following; or

(2) provided the operator establishes and maintains a method to record the type of drill performed by each cabin crew member and the drill types are alternated annually, each cabin crew member will perform at least one land or one unprepared water evacuation drill that incorporates the procedures pertinent to a specific exit and perform the following:

(a) Secure themselves in a cabin crew member seat;

(b) recognise that an emergency situation is developing and react appropriately to the drill scenario;

(c) apply all applicable commands;

(d) recognise when and how to initiate the evacuation, (ie. commands, evacuation horn);

(e) activate emergency lights, evacuation horn;

(f) locate and don life jacket and command passengers as appropriate;

(g) assess conditions inside and outside the exit to determine exit usability throughout the evacuation;

(h) prepare and open the exit;

(i) secure exit in fully open position or ensure correct stowage;

(j) pull inflation handle(s) and verify deployment, inflation of ramp, slide;

(k) assume appropriate protective position;

(l) initiate passenger evacuation;

(m) final cabin and flight deck checks, and remove required emergency equipment;

(n) evacuate aircraft/trainer correctly;

(o) physically identify location of escape tapes or escape ropes; and

(p) physically identify release handle(s) (ie. slide disconnect, ventral stairs, tailcone jettison etc.)

7.3.4 Evaluation criteria

Cabin crew member performance will be observed, rated and debriefed according to the following:

(1) Correct usage of the seat mechanism, restraint system and brace position as appropriate for seat direction and location;

(2) correct and timely reaction to emergency situations;

(3) consistent usage of appropriate terminologies (ie. commands, ABP briefings) with clear, positive authoritative communication techniques, as appropriate for drill scenario;

(4) activates emergency lights, evacuation horn;

(5) selects appropriate exit for the evacuation scenario and the aircraft type;

(6) assessment of the conditions inside and outside the exit to determine exit usability throughout evacuation (ie. clear of obstruction, fire, aircraft attitude);

(7) preparation and correct operation of exit;

(8) secures exit in the fully open position or ensures correct stowage;

(9) pulls inflation handle(s) and verifies deployment, inflation of slide, ramp;

(10) assumes and maintains appropriate protective body and hand positions;

(11) effective usage of able-bodied persons for special needs passengers (ie assisting outside aircraft and directing people away from the aircraft or onto flotation devices, crowd control, etc);

(12) adequacy of cabin checks, removal of equipment and additional supplies as scenario and operator procedures dictate;

(13) correctly identifies release handle(s) (ie. slide disconnect, tailcone jettison, ventral stairs);

(14) correct application of procedures as related to scenario; and

(15) consequences of errors.

7.3.5 Crew prepared evacuation drill performance criteria

Each cabin crew member must participate in at least one prepared land evacuation drill or at least one ditching evacuation drill and perform the following:

(1) Recognize the in-flight emergency signal from the flight deck and react according to procedures;

(2) prepare passengers, cabin and self according to procedures and scenario;

(3) select and brief able-bodied passengers to assist as required, opening non-crewed exits, crowd control, buddy-up with special needs passengers, assisting outside aircraft and directing people away from the aircraft or onto flotation devices;

(4) recognize the emergency brace and evacuation signals and react accordingly;

(5) activate emergency lights, evacuation horn;

(6) prepare and operate exits;

(7) evacuate passengers;

(8) final cabin and flight deck checks, remove required emergency equipment; and

(9) evacuate aircraft/trainer.

7.3.6 Evaluation criteria

Cabin crew member performance will be observed, rated and debriefed according to the contents of 7.3.4 and the following:

(1) Correct application of emergency landing preparation procedures;

(2) awareness of and appropriate response to passenger behaviour;

(3) communication acknowledgement;

(4) accuracy in briefing of ABPS;

(5) debrief will include a discussion with all participants describing, in general terms, procedures and responsibilities which must be completed following and as appropriate to evacuation scenarios (ie. flotation devices, equipment, location, movement of passengers to a safe area, protection from the elements, first aid, etc.)

7.4 Life raft drill

7.4.1 Equipment criteria

Life raft drill must be conducted using life saving equipment that is representative of that which is installed on each aircraft type with respect to weight, dimensions, appearance, features and operation.

7.4.2 Performance criteria

(1) Each cabin crew member will participate in a life raft drill once every third annual training year and perform the following:

(a) Access the raft compartment and experience the difficulty associated with moving the weight of a packaged life raft within a space representative of the aircraft aisle;

(b) examine all features of a fully inflated raft;

(c) board raft(s), assist persons into raft;

(d) access the inflation Ianyard;

(e) access the slide, raft quick release mechanism while verbally describing the procedure to release the life raft from the aircraft; and

(f) examine the life raft survival kit and components.

(2) Participate as a cabin crew member or a passenger in the following:

(a) Launching, inflating, and disconnecting raft(s) either actual or by video;

(b) righting overturned rafts;

(c) effective raft management, (ie. distribution of passengers, deploying sea anchor, etc);

(d) erecting the raft canopy;

(e) distribution of duties to passengers;

(f) discuss the hazards associated with moving a packaged life raft through the cabin to an exit (ie. inadvertent inflation, passenger movement and panic); and

(g) water survival principles, a review of the operations of survival kit components including raft maintenance.

7.5 Life jacket drill

7.5.1 Equipment criteria

Life jackets used for this drill must be representative of those most commonly carried on the aircraft.

7.5.2 Performance criteria

Each cabin crew member must perform the following:

(1) Observe removal of life jacket from closed pouch;

(2) don life jacket;

(3) locate and review operation of inflation toggles;

(4) partially inflate one chamber of life vest orally;

(5) practice deflation technique;

(6) locate and review light activation;

(7) locate whistle; and

(8) fit life jacket.

7.6 Aircraft slide drill

7.6.1 Equipment criteria

(1) The evacuation slide must be representative of the type installed in the aircraft with respect to the following categories:

(a) Inflatable, double lane slides;

(b) inflatable slide and ramp combination;

(c) inflatable, single lane slides.

(2) Non-inflatable slides must be representative of the type installed in the aircraft.

7.6.2 Performance criteria

Each cabin crew member will perform an aircraft slide drill according to the following:

(1) Inflatable evacuation slide

(a) Slide down an inflatable slide from each of the categories; or

(b) slide down an inflatable slide from one of the categories, and for each other slide category, view a video which depicts slide, ramp activation and inflation, both externally from a side angle and a slide base angle and internally from the cabin crew member protected position, including slide inflation sound, and slide disconnect sequence; or

(c) for each slide category view a video which depicts: slide, ramp activation and inflation, both externally from a side angle and a slide base angle and internally from the cabin crew member protected position, including slide inflation sound and slide disconnect sequence.

(2) Non inflatable evacuation slide

Where the evacuation slide is not door mounted, each cabin crew member must retrieve the slide(s) from its stowed location and attach the evacuation slide clips to the appropriate “D” rings on door frames.

7.7 Fire fighting drills

7.7.1 General

(1) Drill scenarios will provide each cabin crew member with the opportunity to merge procedural knowledge with practical skills. Their ability to successfully react to different fire situations will enhance their level of confidence and their ability to deal with fires in flight.

(2) Cabin fire fighting drills may include class A, B, C fires in the following locations:

(a) cabin area (ie. under seat, over-head bin, closet);

(b) galley area (ie. garbage bin, upper electrical panel, oven);

(c) confined area (ie. waste bin, lavatory); and

(d) hidden (ie. behind panels).

7.7.2 Equipment criteria

(1) Fire fighting drills will be conducted using furnishings representative of those found on the operator's aircraft as appropriate to the drill scenario (ie. such as seats, galley units, panels, waste bins, etc);

(2) Fire fighting equipment and the brackets used for restraint must be representative to those installed in the aircraft with respect to weight, dimensions, controls, types and operations. Fire extinguishers used for live fire fighting must be charged with the appropriate agent or with an environmentally friendly agent. Protective Breathing Equipment (PBE) consisting of portable oxygen bottle and full face mask must be charged with oxygen. Self contained PBE may be substituted with a training smoke hood which is not operational.

7.7.3 Live fire fighting

Each cabin crew member must demonstrate the effectiveness of a fire extinguisher correctly applied to extinguish an actual fire once every third annual training year, while wearing PBE.

7.7.4 Cabin fire fighting drill performance criteria

Each cabin crew member must participate in a fire fighting drill in a cabin environment involving at least one cabin crew member and a passenger(s) and perform the following:

(1) Recognise that there is a potential fire situation (ie. smoke detector signal or unusual fumes, odors etc.);

(2) locate the source of fire;

(3) apply communication and coordination procedures;

(4) select, remove and operate the nearest appropriate fire extinguisher and other fire fighting equipment;

(5) control of passengers; and

(6) monitor for re-ignition, and apply post-fire follow-up procedures.

7.7.5 Evaluation criteria

Cabin crew member performance will be observed, rated and debriefed according to the following:

(1) Recognition or identification of the problem;

(2) correctly locates the source of the fire (ie. tactile search, use of crash axe, etc);

(3) effective communication/coordination procedures throughout the drill (ie. notifying fellow flight crew members of the situation, providing clear, concise and consistent information to the pilot-in-command, advice and assistance to passengers);

(4) response in a timely manner;

(5) correct use of fire fighting equipment consistent with the type of fire, location of the fire and maximum effective position of the fire extinguisher;

(6) undertake further action as required; and

(7) consequences of error.

7.7.6 Equipment practice

Each cabin crew member who does not operate the following equipment in the drill in 7.7.4 must demonstrate the ability to use fire fighting equipment and perform the following:

(1) Remove from stowage, don and activate PBE and practice communication;

(2) remove from stowage and operate each type of fire extinguisher (uncharged) and associated attachments (ie. extinguisher fitted with hose attachment, extension (wand), etc.);

(3) don each piece of protective clothing; and

(4) initiate fire fighting procedures involving at least one cabin crew member and a passenger(s).

7.7.7 Fire/Class B Main deck (Combi configuration)

Each cabin crew member will perform the drills identified in Technical Directive (to be inserted when published).

7.8 Pilot incapacitation drill

7.8.1 Training objective

The cabin crew member will apply the procedures relating to an incapacitated pilot.

7.8.2 Syllabus

(1) Procedures

For each aircraft where the operation of the pilot seats is significantly different, each cabin crew member will –

(a) pull the pilot away from the flight controls and correctly fasten and lock the restraint system;

(b) position the pilot seat using the controls, ie. horizontal, vertical, recline; and

(c) apply flight crew coordination and flight crew communication procedures to assist the remaining flight deck crew.

Notes: 1. Where aircraft have no cabin crew members – as in the case of corporate or charter flights – and the pilot/co-pilot is responsible for the safety of passengers, the training standard syllabus has been amended to include two additional columns (PI) and (PR) which refer to "Pilot initial" and "Pilot recurrent". See Table below for a summary of training syllabus.

2. Where an "X" is shown instead of a "·" provision is made for optional or guidance inclusion.

CABIN CREW TRAINING SILLABUS

PI = Pilot initial, PR = Pilot recurrent, IN = Initial, RC = Recurrent, RQ = Re-qualification, A/C = Aircraft

Training Syllabus Item	PI	PR	IN	RC	RQ	A/C
REGULATORY OVERVIEW						
Regulatory overview			•			
Legislation	•		•	•	•	
AVIATION TERMINOLOGY						
Terminology			•			
Terms of reference			•			
THEORY OF FLIGHT						
General aircraft description			•			
Aerodynamics of flight			•			
Meteorology			•			
Air traffic control			•			
PHYSIOLOGY OF FLIGHT						
General			•	•	•	
Effects of altitude			•	•	•	
FLIGHT DECK OBSERVATION FLIGHT						
General Familiarization Flight(s)			•	•	•	•
ROLES AND RESPONSIBILITIES - OPERATOR						
Operating requirements			•		•	
Operations manual	•	•	•	•	•	
CABIN CREW MEMBERS						
General	•		•	•	•	
ROLES AND RESPONSIBILITIES – IACM INSPECTORS						
General			•			
SAFETY PROCEDURES FLIGHT CREW COORDINATION						
General			•		•	
Flight crew coordination			•	•	•	•
COMMUNICATIONS						
General			•	•	•	
Communication			•	•	•	
Passenger announcements	•		•			
SURFACE CONTAMINATION						
General			•		•	

Cabin crew member responsibilities			•		•	
BRIEFINGS						
Cabin crew briefings			•	•	•	•
Passenger briefings	•	•	•	•	•	•
SAFETY CHECKS						
General	•	•	•	•	•	•
PASSENGER HANDLING						
General			•	•	•	•
Passenger boarding	•	•	•	•	•	•
PASSENGER AND CABIN CREW MEMBER SEATS AND RESTRAINTS						
Passenger seating	•	•	•	•	•	•
Cabin crew seating			•	•	•	•
CABIN BAGGAGE						
Passenger carry-on baggage	•	•	•	•	•	•
Flight crew carry-on baggage			•	•	•	•
ELECTRONIC DEVICES						
General	•	•	•	•	•	•
SERVICE TO PASSENGERS ON THE GROUND						
General			•			
Cabin crew member responsibilities			•	•	•	•
FUELLING WITH PASSENGERS ON BOARD						
General	•	•	•	•		
Cabin crew member responsibilities			•	•	•	•
PRE-TAKE OFF AND PRE-LANDING						
Cabin preparation						
Cabin crew member responsibilities	•		•	•	•	•
Abnormal situations	•		•	•	•	
TURBULENCE						
General			•	•	•	
Cabin crew member responsibilities			•	•	•	
CREW MEMBER INCAPACITATION						
General			•	•	•	
Pilot incapacitation			•	•	•	•
Cabin crew incapacitation			•	•	•	•
FLIGHT DECK PROTOCOL						
General	•		•	•	•	•
FUEL DUMPING						
General			•		•	
POST-FLIGHT DUTIES						
Documentation			•	•	•	•
Communication			•	•		•
OXYGEN ADMINISTRATION				•		
General			•	•	•	•
Procedures			•	•	•	•
EMERGENCY PROCEDURES - FIRE FIGHTING						
General	•	•	•	•	•	•
Cabin crew member responsibilities	•	•	•	•	•	•
Procedures – cabin	•		•	•	•	•
Procedures – external	•		•	•	•	•
SMOKE/FUMES IN THE CABIN						
General	•	•	•	•	•	•
Cabin crew member responsibilities	•	•	•	•	•	•

RAPID DECOMPRESSIONS AND PRESSURIZATION PROBLEMS						
General	•	•	•	•	•	
Cabin crew member responsibilities	•	•	•	•	•	•
EVACUATIONS						
General	•	•	•	•	•	•
Cabin crew member responsibilities	•	•	•	•	•	•
Evacuation procedures	•	•	•	•	•	•
Post-evacuation	•	•	•	•	•	•
Accident/Incident review			•	•	•	
EMERGENCY EQUIPMENT - EQUIPMENT OVERVIEW						
General			•		•	
AEROPLANE SPECIFIC - PHYSICAL DESCRIPTION						
General			•			
Exterior description			•			
Interior description			•	•		
GALLEYS						
General			•	•		
COMMUNICATION SYSTEMS						
General			•	•		
Interphone			•	•		
Public address system			•	•	•	•
Passenger call system			•	•		
Entertainment system			•	•		•
Automatic announcement system			•	•		
LIGHTING SYSTEMS						
General			•	•		•
WATER AND WASTE SYSTEMS						
General			•	•		•
OXYGEN SYSTEMS						
General			•	•		•
HEATING AND VENTILATION SYSTEMS						
General			•	•		•
EXITS			•	•	•	•
General			•	•	•	•
Normal operation			•	•	•	•
Abnormal operation			•	•	•	•
Emergency operation			•	•	•	•
Airstairs			•		•	
UNIQUE FEATURES						
General			•	•	•	
PUBLIC ADDRESS SYSTEM AND INTERPHONE SYSTEM						
Introduction			•	•	•	
Equipment criteria			•	•	•	
Performance criteria			•	•	•	
Evaluation criteria			•	•	•	
PASSENGER BRIEFING DRILL						
Equipment criteria			•	•	•	
Performance criteria			•	•	•	
Evaluation criteria			•	•	•	
AEROPLANE EXIT OPERATION DRILLS						
Equipment criteria	•		•	•	•	

Normal door operation performance criteria			•	•	•	•
Emergency door operation performance criteria			•	•	•	•
Cabin window exit operation			•	•	•	
Evaluation criteria			•	•	•	
Airstair operation performance criteria			•	•	•	•
EVACUATION DRILLS						
General			•	•	•	•
Simulation scenarios			•	•	•	•
Unprepared land/unprepared water evacuation			•	•	•	
Evaluation criteria			•	•	•	
Cabin crew prepared land/ditching evacuation drills			•	•	•	
Evacuation criteria			•	•	•	
RAFT DRILL (WET OR DRY)						
Equipment criteria	**x**		•	•	•	
Performance criteria	**X**		•	•	•	
LIFE JACKET DRILL						
Equipment criteria	•		•	•	•	
Performance criteria	•		•	•	•	
AEROPLANE SLIDE DRILL						
Equipment criteria			•	•	•	
Performance criteria			•	•	•	•
FIRE FIGHTING DRILLS						
General	•		•	•	•	
Equipment criteria	•		•	•	•	
Equipment practice performance criteria	•		•	•	•	
FIRE FIGHTING DRILLS						
Live fire fighting performance criteria	•		•	•	•	
Fire fighting/Cabin performance criteria	•		•	•	•	•
Evaluation criteria	•		•	•	•	•
Fires/Class B main deck cargo compartment N/A N/A			•	•	•	
OXYGEN ADMINISTRATION DRILL						
Equipment criteria			•	•		
Portable oxygen bottle performance criteria	**x**	**x**	•	•		
Fixed first aid oxygen performance criteria	**x**	**x**	•	•		
PRE-FLIGHT CHECK						
Equipment criteria	•	•	•	•	•	•
Performance criteria	•		•	•	•	•
Evaluation criteria • • • • •	•	•	•	•	•	•
PRE-TAKE OFF CHECK						
Equipment criteria • • •			•	•	•	•
Performance criteria • • •			•	•	•	•
Evaluation criteria • • •			•	•	•	•
PRE-LANDING CHECK						
Equipment criteria • • •			•	•	•	
Performance criteria • • •			•	•	•	
Evaluation criteria • • •			•	•	•	
POST-LANDING CHECK						
Equipment criteria • • •			•	•	•	
Performance criteria • • •			•	•	•	
Evaluation criteria • • •			•	•	•	
PILOT INCAPACITATION DRILL						
Procedures • • • • •			•	•	•	

121.03.13 REFRESHER TRAINING

1. Refresher training

An operator must ensure that refresher training is conducted by suitably qualified persons and, for each cabin crew member, includes at least the following:

(1) Emergency procedures including pilot incapacitation;

(2) evacuation procedures including crowd control techniques;

(3) the operation and actual opening of all normal and emergency exits for passenger evacuation in an aeroplane or representative training device;

(4) demonstration of the operation of all other exits; and

(5) the location and handling of emergency equipment, including oxygen systems, and the donning of life jackets, portable oxygen and protective breathing equipment.

121.03.14 CHECKING

1. Checking

An operator must ensure that each cabin crew member undergoes checks as follows:

(1) Initial training – The subjects referred to in TS 121.03.9, as applicable;

(2) Type and differences training – The subjects listed in TS 121.03.10; and

(3) Recurrent training – The subjects listed in TS 121.03.12.

121.04.2 OPERATIONS MANUAL

1. Structure and approval of operations manual

(1) An operator must ensure that the main structure of the operations manual is as follows:

Part A: General

This part must comprise all non type-related operational policies, instructions and procedures needed for a safe operation and must comply with all relevant MCARs.

Part B: Aeroplane operating procedures

This part must comprise all type-related instructions and procedures needed for a safe operation. It must take account of the different types of aeroplanes or variants used by the operator.

Part C: Route and aerodrome instructions and information

This part must comprise all instructions and information needed for the area of operation.

Part D: Training

This part must comprise all training instructions for personnel required for a safe operation.

(2) An operator must ensure that the contents of the operations manual are in accordance with paragraph 2 of this technical standard, and relevant to the area and type of operation.

(3) Before becoming official operational policy, an operator must ensure that the operations manual has been approved by the Authority.

2. Contents of Operations Manual

2.1 PART A: GENERAL

2.1.1 Administration and control of operations manual

(1) Introduction

(a) A statement that the manual complies with all applicable MOZCARs and with the terms and conditions of the applicable AIR OPERATOR CERTIFICATE.

(b) A statement that the manual contains operational instructions that 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.

(2) System of amendment and revision

(a) Who is responsible for the issuance and insertion of amendments and revisions.

(b) A record of amendments and revisions with insertion dates and effective dates.

(c) A statement that handwritten amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interests of aviation safety.

(d) A description of the system for the annotation of pages and their effective dates.

(e) A list of effective pages.

(f) Annotation of changes (on text pages and, as far as practicable, on charts and diagrams).

(g) Temporary revisions.

(h) A description of the distribution system for the manuals, amendments and revisions.

2.1.2 Organisation and responsibilities

(1) Organisational structure

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

(2) Nominated postholders

The name of each nominated postholder responsible for flight operations, the maintenance system, flight crew training and ground operations. A description of their functions and responsibilities must be included.

(3) Responsibilities and duties of operations management personnel

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 MCARs.

(4) Authority, duties and responsibilities of the pilot-in-command

A statement defining the authority, duties and responsibilities of the pilot-in-command.

(5) Duties and responsibilities of flight crew members other than the pilot-in-command.

A statement defining the duties and responsibilities of flight crew members other than the pilot-in-command.

2.1.3 Operational control and supervision

(1) Supervision of the operation by the operator

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. In particular, the procedures related to the following items must be described:

(a) Licence and qualification validity;

(b) competence of operations personnel; and

(c) control, analysis and storage of records, flight documents, additional information and data.

(2) System of promulgation of additional operational instructions and information

A description of any system for promulgating information which may be of an operational nature but is supplementary to that in the operations manual. The applicability of this information and the responsibilities for its promulgation must be included.

(3) Accident prevention and flight safety programme

A description of the main aspects of the flight safety programme including –

(a) programmes to achieve and maintain risk-awareness by all persons involved in flight operations; and

(b) evaluation of aviation accidents and incidents and the promulgation of related information.

(4) Operational control

A description of the procedures and responsibilities necessary to exercise operational control with respect to flight safety.

2.1.4 Quality control system

(1) Purpose of the Quality System

The quality system should enable the operator to monitor compliance with the MCAR and CATS, the operations manual, the operator's maintenance management policy, and any other standards specified by that operator or the Director to ensure airworthy aircraft and safe operations.

(2) Requirements

(a) The operator shall establish a quality system and designate a quality manager to give effect to the requirements of paragraph (1) above. Compliance monitoring must include a system of reporting back to the accountable manager, to ensure corrective action as necessary.

(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 Director.

(d) The quality system must be described in relevant documentation.

(e) Notwithstanding sub-paragraph (a) above, the Director may accept the nomination of two quality managers, one for flight operations and one for maintenance, provided the operator has designated one single quality management unit to ensure that the quality system is applied uniformly throughout the entire operation.

(3) General

In order to show compliance with paragraphs (1) and (2) above, an operator should establish his quality system in accordance with the instructions and information contained in the paragraphs below.

(4) Definitions

The terms, used in the context of this requirement for an operator's quality system, have the following meaning:

(a) Inspection:

An inspection is the act of observing a particular event or action, to ensure that correct procedures and requirements are followed during the accomplishment of that event or action. The primary purpose of an inspection is to verify that established standards are followed during the observed event or action.

(b) Audit:

An audit is a methodical, planned review used to determine how a business is being conducted, and compares the results with how that business should have been conducted according to regulations and established procedures.

(c) Accountable Manager:

The accountable manager is the person, acceptable to the Director, who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to a standard required by the Director, and any additional requirements defined by the operator. The accountable manager is an essential part of the AOC-holder's management organisation. The term 'accountable manager' is intended to mean the Chief Executive Officer / President / Managing Director / Director-General / General Manager, or similar designations, of the operator's organisation, who by virtue of his or her position has overall responsibility (including financial) for managing the organisation. The accountable manager will have overall responsibility for the AOC-holder's quality system, including the frequency, format and structure of the internal management evaluation activities, as prescribed in sub-paragraph (9)(h) below.

(d) Quality Assurance:

Quality assurance means all those planned and systematic actions necessary to provide adequate confidence that operational and maintenance practices satisfy prescribed requirements.

(e) Quality Manager:

The quality manager is the manager, acceptable to the Director, responsible for the management of the quality system, the monitoring function and for requesting corrective action.

(5) Quality Policy

An operator shall establish a formal, written quality policy statement, constituting a commitment by the accountable manager as to what the quality system is intended to achieve. The quality policy should reflect the achievement and continued compliance with the MCAR, together with any additional standards specified by the operator.

(6) Quality Manager

(a) The function of the quality manager, to monitor compliance with-, and the adequacy of, procedures required to ensure safe operational practices and airworthy aircraft, as required by the MCAR, may be carried out by more than one person by means of different, but complementary, quality assurance programmes.

(b) The primary role of the quality manager is to verify, by monitoring activity in the fields of flight operations, maintenance, crew training and ground operations, that the standards required by the Director, and any additional requirements defined by the operator, are being carried out under the supervision of the relevant nominated post holder.

(c) The quality manager should be responsible for ensuring that the quality assurance programme is properly established, implemented and maintained.

(d) The quality manager should—

(i) be suitably qualified and experienced;

(ii) have direct access to the accountable manager;

(iii) preferably not be one of the nominated post holders; and

(iv) have access to all parts of the operator's and, as necessary, any sub-contractor's organisation. In the case of small/very small operators (see paragraph (10) below), the posts of the accountable manager and the quality manager may be combined. However, in such event, independent personnel should conduct quality audits.

(7) Quality System

(a) The operator's quality system should ensure compliance with, and adequacy of operational and maintenance activities requirements, standards, and operational procedures.

(b) The operator should specify the basic structure of the quality system applicable to the operation.

(c) The quality system should be structured according to the size and complexity of the operation to be monitored (see also paragraph (11) below).

(d) As a minimum, the quality system should address the following:

(i) The provisions of the MCAR.

(ii) The operator's additional standards and operating procedures.

(iii) The operator's quality policy.

(iv) The operator's organisational structure.

(v) Responsibility for the development, establishment and management of the quality system.

(vi) Documentation, including manuals, reports, and records.

(vii) Quality procedures.

(viii) Quality assurance programme.

(ix) Schedule of the monitoring process.

(x) Audit procedures.

(xi) Reporting procedures.

(xii) Follow-up and corrective action procedures.

(xiii) Recording system.

(xiv) The training syllabus.

(xv) Document control.

(8) Quality Assurance Programme.

The quality assurance programme should include all planned and systematic actions necessary to provide confidence that all operations and maintenance are conducted in accordance with all applicable requirements, standards, and operational procedures. When establishing a quality assurance programme, consideration should, at least, be given to the sub-paragraphs (a) to (j) below:

(a) Quality Inspection.

The primary purpose of a quality inspection is to observe a particular event/action/document, etc., in order to verify whether established operational procedures and requirements are followed during the accomplishment of that event and whether the required standard is achieved. Typical subject areas for quality inspections are:

(i) Actual flight operations.

(ii) Ground de-icing/anti-icing.

(iii) Flight support services.

(iv) Load control.

(v) Maintenance.

(vi) Technical standards.

(vii) Training standards

(b) Audit.

(i) An audit is a systematic and independent comparison of the way in which an operation is being conducted against the way in which the published operational procedures say it should be conducted. Audits should include at least the following quality procedures and processes:

(Aa) A statement explaining the scope of the audit.

(Ab) Planning and preparation.

(Ac) Gathering and recording evidence.

(Ad) Analysis of the evidence.

(ii) Techniques which contribute to an effective audit are:

(Aa) Interviews or discussions with personnel.

(Ab) A review of published documents.

(Ac) The examination of an adequate sample of records.

(Ad) The witnessing of the activities which make up the operation.

(Ae) The preservation of documents and the recording of observations.

(c) Auditors

(i) Auditors should preferably not have any day-to-day involvement in the area of the operation and/or maintenance activity which is to be audited. An operator may, in addition to using the services of full-time dedicated personnel belonging to a separate quality department, undertake the monitoring of specific areas or activities by the use of part-time auditors.

(ii) An operator whose structure and size does not justify the establishment of full-time auditors may undertake the audit function by the use of part-time personnel from within his own organisation or from an external source under the terms of an agreement acceptable to the Director. In all cases, the operator should develop suitable procedures to ensure that persons directly

responsible for the activities to be audited are not selected as part of the auditing team.

(iii) Where external auditors are used, it is essential that any external specialist is familiar with the type of operation or maintenance conducted by the operator.

(iv) The operator's quality assurance programme should identify the persons within the company who have the experience, responsibility and authority to—

(Aa) perform quality inspections and audits as part of ongoing quality assurance;

(Ab) identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;

(Ac) initiate or recommend solutions to concerns or findings through designated reporting channels;

(Ad) verify the implementation of solutions within specific timescales; and

(Ae) report directly to the quality manager.

(d) Audit Scope.

Operators are required to monitor compliance with the operational procedures they have designed to ensure safe operations, airworthy aircraft, and the serviceability of both operational and safety equipment. In doing, they should as a minimum, and where appropriate, monitor the following:

(i) The organisation.

(ii) Plans and company objectives.

(iii) Operational procedures.

(iv) Flight safety.

(v) Operator certification (AOC/Operations Specification).

(vi) Supervision within the organisation.

(vii) Aircraft performance.

(viii) All-weather operations.

(ix) Communications and navigational equipment and practices.

(x) Mass, balance and aircraft loading.

(xi) Instruments and safety equipment.

(xii) Manuals, logs, and records.

(xiii) Aircraft maintenance/operations interface.

(xiv) Use of the MEL.

(xv) Maintenance programmes and continued airworthiness.

(xvi) Airworthiness directives management.

(xvii) Maintenance accomplishment.

(xviii) Defect deferral.

(xix) Flight crew.

(xx) Cabin crew.

(xxi) Dangerous goods.

(xxii) Security.

(xxiii) Training.

(e) Audit Scheduling.

A quality assurance programme should include a defined audit schedule and a periodic review-cycle, area by area. The schedule should be flexible, and allow unscheduled audits when trends are identified. Follow-up audits should be scheduled when necessary to verify that corrective action was carried out and that it was effective. An operator should establish a schedule of audits to be completed during a specified calendar period. All aspects of the operation should be reviewed within every period of 12 months in accordance with the programme unless an extension to the audit period is accepted as explained below:

(i) An operator may **increase** the frequency of audits at his or her discretion but should **not decrease** the frequency without the agreement of the Director. It is considered unlikely that an interval between audits greater than 24 months would be acceptable.

(ii) When an operator defines the audit schedule, significant changes to the management, organisation, operation, or technologies should be considered, as well as changes to the regulatory requirements.

(f) Monitoring.

(i) The aim of monitoring within the quality system is primarily to investigate and judge its effectiveness and thereby to ensure that defined policy and operational, and maintenance standards are continuously complied with. Monitoring activity is based upon quality inspections, audits, corrective action and follow-up.

(ii) The operator should establish and publish a quality procedure to monitor regulatory compliance on a continuing basis. This monitoring activity should be aimed at eliminating the causes of unsatisfactory performance. Any non-compliance identified as a result of monitoring should be communicated to the manager responsible for taking corrective action or, if appropriate, the

accountable manager. Such non-compliance should be recorded, for the purpose of further investigation, in order to determine the cause and to enable the recommendation of appropriate corrective action.

(iii) The quality assurance programme should include procedures to ensure that corrective actions are taken in response to findings. These quality procedures should monitor such actions to verify their effectiveness and having been completed.

(iv) Organisational responsibility and accountability for the implementation of corrective action resides with the department cited in the report identifying thefinding.

(v) The accountable manager will have the ultimate responsibility for resourcing the corrective action and ensuring, through the quality manager, that the corrective action has re-established compliance with the standard required by the Director, and any additional requirements defined by the operator.

(g) Corrective Action.

(i) Subsequent to the quality inspection/audit, the operator should establish:

(Aa) the seriousness of any findings and any need for immediate corrective action;

(Ab) the origin of the finding;

(Ac) which corrective actions are required to ensure that the non-compliance does not recur;

(Ad) a schedule for corrective action;

(Ae) the identification of individuals or departments responsible for implementing corrective action; and

(Af) allocation of resources by the accountable manager, where appropriate.

(ii) The quality manager should—

(Aa) verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;

(Ab) verify that corrective action includes the elements outlined in paragraph (8)(g)(i) above;

(Af) monitor the implementation and completion of corrective action;

(Af) provide management with an independent assessment of corrective action, implementation and completion; and

(Af) evaluate the effectiveness of corrective action through the follow-up process.

(h) Management Evaluation.

A management evaluation is a comprehensive, systematic, documented review by the management of the quality system, operational policies and procedures, and should consider the following:

(i) The results of quality inspections, audits and any other indicators.

(ii) The overall effectiveness of the management organisation in achieving stated objectives.

(iii) A management evaluation should identify and correct trends, and prevent, where possible, future non-conformities. Conclusions and recommendations made as a result of an evaluation should be submitted in writing to the responsible manager for action. The responsible manager should be an individual who has the authority to resolve issues and take action.

(iv) The accountable manager should decide upon the frequency, format, and structure of internal management evaluation activities.

(i) Recording.

The operator should maintain accurate, complete, and readily accessible records documenting the results of the quality assurance programme. Records are essential data to enable an operator to analyse and determine the root causes of non-conformity, so that areas of non-compliance can be identified and addressed. The following records should be retained for a period of at least five years:

(i) Audit Schedules.

(ii) Quality Inspection and Audit Reports.

(iii) Responses to findings.

(iv) Corrective-action reports.

(v) Follow-up and closure reports.

(vi) Management Evaluation Reports.

(j) Quality Assurance Responsibility for Sub-Contractors.

Operators may decide to sub-contract out certain activities to external agencies for the provision of services related to areas such as:

(i) Ground de-icing/anti-icing.

(ii) Maintenance.

(iii) Ground handling.

(iv) Flight support (including performance calculations, flight planning, navigation database, and despatch).

(v) Training.

(vi) Manual preparation.

The ultimate responsibility for the product or service provided by the sub-contractor always remains with the operator. A written agreement should exist between the operator and the sub-contractor, clearly defining the safety-related services and quality to be provided. The sub-contractor's safety-related activities relevant to the agreement should be included in the operator's quality assurance programme. The operator should ensure that the sub-contractor has the necessary authorisation/approval, when required, and commands the resources and competence to undertake the task. If the operator requires the sub-contractor to conduct an activity that exceeds the sub-contractor's authorisation/approval, the operator is responsible for ensuring that the sub-contractor's quality assurance takes account of such additional requirements.

(9) Quality System Training.

(a) An operator should establish effective, well-planned, and resourced quality-related briefings for all personnel. Those responsible for managing the quality system should receive training covering—

(i) an introduction to the concept of the quality system;

(ii) quality management;

(iii) the concept of quality assurance;

(iv) quality manuals;

(v) audit techniques;

(vi) reporting and recording; and

(vii) the way in which the quality system will function in the organisation.

(b) Time should be provided to train every individual involved in quality management and for briefing the remainder of the employees. The allocation of time and resources should be governed by the size and complexity of the operation concerned.

(c) Quality management courses are available from the various national or international standards institutions, and an operator should consider whether to offer such courses to those likely to be involved in the management of quality systems. Operators with sufficient appropriately qualified staff should consider whether to carry out in-house training.

(10) Quality System for Organisations with 20 or less Full -Time Employees.

(a) The requirement to establish and document a quality system and to employ a quality manager applies to all operators. References to large and small operators elsewhere in the requirements are governed by aircraft capacity and by mass. Such terminology is not relevant when considering the scale of an operation and the quality system required. Therefore, in the context of quality systems, operators should be categorised according to the number of full-time employees.

(b). Operators who employ five or less full-time staff are considered to be **'very small'**, while those employing between six and twenty full-time employees are regarded as **'small'.**

(c) Complex quality systems could be inappropriate for small or very small operators and the clerical effort required to draw up manuals and quality procedures for a complex system may stretch their resources. It is therefore accepted that such operators should tailor their quality systems to suit the size and complexity of their operation and allocate resources accordingly.

(d) For small and very small operators it may be appropriate to develop a quality assurance programme that employs a checklist. The checklist should have a supporting schedule that requires completion of all checklist items within a specified timescale, together with a statement acknowledging completion of a periodic review by top management. An occasional independent overview of the checklist content and achievement of the quality assurance should be undertaken.

(e) The small operator may decide to use internal or external auditors or a combination of the two. In these circumstances it would be acceptable for external specialists and/or qualified organisations to perform the quality audits on behalf of the quality manager.

(f) If the independent quality audit function is being conducted by external auditors, the audit schedule should be shown in the relevant documentation.

Note: Whatever arrangements are made, the operator retains the ultimate responsibility for the quality system, and especially the completion and follow-up of corrective actions.

(11) Quality Department or Organisation organograms should illustrate each management and functional office established for that purpose. All manager incumbents must be identified by name while functional offices may be left blank unless permanent personnel have been appointed to such positions.

(a) Quality system within the AOC holder's organisation when the AOC holder also holds a Part 145 approval:

(b) Quality systems related to an AOC holder's organisation where aircraft maintenance is contracted out to a PART 145 approved organisation which is not integrated with the AOC holder:

2.1.5 Flight crew composition

(1) Flight crew composition

An explanation of the method for determining flight crew compositions 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 flight crew requirement and flight duty period planned;

(e) experience (total and on type), recency and qualification of the flight crew members; and

(f) the designation of the pilot-in-command 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.

(2) Designation of the pilot-in-command

The rules applicable to the designation of the pilot-in-command.

(3) Flight crew incapacitation

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

2.1.6 Qualification requirements

(1) A description of the required licence, rating(s), qualification/competency (e.g. for routes and aerodromes), experience, training, checking and recency for operations personnel to conduct their duties. Consideration must be given to the aeroplane type, kind of operation and composition of the flight crew.

(2) Flight deck crew

(a) Pilot-in-command

(b) Co-pilot

(c) Pilot under supervision

(d) Operation on more than one type or variant.

(3) Cabin crew

(a) Senior cabin crew member

(b) Cabin crew member

(i) Required cabin crew member

(ii) Additional cabin crew member and cabin crew member during familiarization flights.

(c) Operation on more than one type or variant.

(4) Training, checking and supervision personnel

(a) For flight deck crew

(b) For cabin crew.

(5) Other operations personnel.

2.1.7 Flight crew health precautions

(1) Flight crew health precautions

The relevant regulations and guidance to flight crew members concerning health including –

(a) alcohol and other intoxicating liquor;

(b) narcotics;

(c) drugs;

(d) sleeping tablets;

(e) pharmaceutical preparations;

(f) immunisation;

(g) scuba diving;

(h) blood donation;

(i) meal precautions prior to and during flight;

(j) sleep and rest; and

(k) surgical operations.

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2.1.8 Flight time limitations

(1) Flight time and duty period limitations and rest requirements

A description of the flight time and duty period limitations and rest requirements prescribed in TS 121.02.10 as applicable to the operation.

(2) Exceeded flight time and duty period limitations and/or reductions of rest periods

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

2.1.9 Operating procedures

(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 –

(i) a procedure to establish the minimum altitudes/flight levels for VFR flights; and

(ii) a procedure to establish the minimum altitudes/ flight levels for IFR flights.

(b) Criteria for determining the usability of aerodromes

(c) Methods for the determination of aerodrome operating minima pursuant to MCAR 121.07.7 and TS 121.07.7. Reference must be made to procedures for the determination of the visibility and/or runway visual range and for the applicability of the actual visibility observed by the pilots, the reported visibility and the reported runway visual range.

(d) En route operating minima for VFR flights or VFR portions of a flight and, where single-engine 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) Determination of the quantities of fuel, oil and water methanol carried

The methods by which the quantities of fuel, oil and water methanol to be carried, are determined and monitored in flight. This section must also include instructions on the measurement and distribution of the fluid carried on board. Such instructions must take account of all circumstances likely to be encountered on the flight, including the possibility of in-flight replanning and of failure of one or more of the aeroplane's power plants. The system for maintaining fuel and oil records must also be described.

(h) Mass and centre of gravity

The general principles of mass and centre of gravity including:

(i) Definitions;

(ii) methods, procedures and responsibilities for preparation and acceptance of mass and centre of gravity calculations;

(iii) the policy for using either standard and/or actual masses;

(iv) the method for determining the applicable passenger, baggage and cargo mass;

(v) the applicable passenger and baggage masses for various types of operations and aeroplane type;

(vi) general instruction and information necessary for verification of the various types of mass and balance documentation in use;

(vii) last minute changes proce-dures;

(viii) specific gravity of fuel, oil and water methanol; and

(ix) seating policy/procedures.

(i) ATS flight plan

Procedures and responsibilities for the preparation and submission of the air traffic service flight plan. Factors to be considered include the means of submission for both individual and repetitive flight plans.

(j) Operational flight plan

Procedures and responsibilities for the preparation and acceptance of the operational flight plan. The use of the operational flight plan must be described including samples of the operational flight plan formats in use.

(k) Operator's flight folio

The responsibilities and the use of the operator's flight folio must be described, including samples of the format used. A technical log may be used in place of a flight folio, if it contains the required information.

(l) List of documents, forms and additional information to be carried.

(2) Ground handling instructions

(a) 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 ; and

(iii) precautions to be taken to avoid mixing fuels.

(b) 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 apron, must also be given. Handling procedures must include –

(i) disembarking of persons;

(ii) sick passengers and persons with reduced mobility;

(iii) transportation of inadmissible passengers, deportees or persons in custody;

(iv) permissible size and weight of hand baggage;

(v) loading and securing of items in the aeroplane;

(vi) special loads and classification of load compartments;

(vii) positioning of ground equipment;

(viii) operation of aeroplane doors;

(ix) safety on the apron, including fire prevention, blast and suction areas;

(x) start-up, ramp departure and arrival procedures;

(xi) servicing of aeroplanes;

(xii) documents and forms for aeroplane handling; and

(xiii) multiple occupancy of aeroplane seats.

(c) Procedures for the refusal of embarkation and for disembarkation

Procedures to ensure that persons who appear to be intoxicated or who demonstrate by manner or physical indications that they are under the influence of drugs, except medical patients under proper care, are refused embarkation.

(d) De-icing and anti-icing on the ground

A description of the de-icing and anti-icing policy and procedures for aeroplanes on the ground. These must 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.

(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 type(s) and area(s) of operation. Consideration must be given to –

(i) standard navigation 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 and POLAR navigation and navigation in other designated areas;

(iii) RNAV;

(iv) in-flight replanning; and

(v) procedures in the event of system degradation.

(c) Altimeter setting procedures

(d) Altitude alerting system procedures

(e) Ground proximity warning system procedures

(f) Policy and procedures for the use of TCAS/ACAS

(g) Policy and procedures for in-flight fuel management

(h) Adverse and potentially hazardous atmospheric conditions. Procedures for operating in, and/or avoiding, potentially hazardous atmospheric conditions including –

(i) thunderstorms;

(ii) icing conditions;

(iii) turbulence;

(iv) windshear;

(v) jetstream;

(vi) volcanic ash clouds;

(vii) heavy precipitation;

(viii) sand storms;

(ix) mountain waves; and

(x) significant temperature inversions.

(i) Wake turbulence

Wake turbulence separation criteria, taking into account aeroplane types, wind conditions and runway location.

(j) Flight crew members at their stations

The requirements for flight crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interests of aviation safety.

(k) Use of safety belts for flight crew and passengers

The requirements for flight crew members and passengers to use safety belts and/or harnesses during the different phases of flight or whenever deemed necessary in the interests of aviation safety.

(l) Admission to flight deck

The conditions for the admission to the flight deck of persons other than the flight crew.

(m) Use of vacant flight crew seats

The conditions and procedures for the use of vacant flight crew seats.

(n) Incapacitation of flight crew members

Procedures to be followed in the event of incapacitation of flight crew members in flight. Examples of the types of incapacitation and the means for recognising them, must be included.

(o) Cabin safety requirements. Procedures covering:

(i) Cabin preparation for flight, in-flight requirements and preparation for landing including procedures for securing cabin and galleys;

(ii) procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aeroplane;

(iii) procedures to be followed during passenger em-barkation and disem-barkation;

(iv) procedures in the event of fuelling with passengers on board or embarking and disembarking; and

(v) smoking on board.

(p) Passenger briefing procedures

The contents, means and timing of passenger briefing in accordance with MCAR 91.07.19.

(q) Procedures for aeroplanes operated whenever required cosmic or solar radiation detection equipment is carried.

(r) Procedures for the use of cosmic or solar radiation detection equipment and for recording its readings including actions to be taken in the event that limit values specified in the operations manual are exceeded. In addition, the procedures, including ATS procedures, to be followed in the event that a decision to descend or re-route is taken.

(4) All weather operations

(5) ETOPS

(6) Use of the minimum equipment and configuration deviation list(s)

(7) Non-revenue flights. Procedures and limitations for –

(a) training flights;

(b) test flights;

(c) delivery flights;

(d) ferry flights;

(e) demonstration flights; and

(f) positioning flights, including the kind of persons who may be carried on such flights.

(8) Oxygen requirements

(a) An explanation of the conditions under which oxygen must be provided and used.

(b) The oxygen requirements specified for –

(i) flight deck crew;

(ii) cabin crew; and

(iii) passengers.

2.1.10 Dangerous goods and weapons

(1) Information, instructions and general guidance on the conveyance of dangerous goods including:

(a) operator's policy on the conveyance of dangerous goods;

(b) guidance on the requirements for acceptance, labelling, handling, stowage and segregation of dangerous goods;

(c) procedures for responding to emergency situations involving dangerous goods;

(d) duties of all personnel involved as referred to in a Part 92; and

(e) instructions on the carriage of the operator's employees.

(2) The conditions under which weapons, munitions of war and sporting weapons may be carried.

2.1.11 Security

(1) Security instructions and guidance of a non-confidential nature which must include the authority and responsibilities of operations personnel. Policies and procedures for handling and reporting crime on board such as unlawful interference, sabotage, bomb threats, and hijacking must also be included.

(2) A description of preventative security measures and training.

Note: Parts of the security instructions and guidance may be kept confidential.

2.1.12 Handling of aviation accidents and incidents

Procedures for the handling, notifying and reporting of aviation accidents and incidents. This section must include –

(1) definitions of aviation accidents and incidents and the relevant responsibilities of all persons involved;

(2) the description of which operator departments, authorities or other institutions have to be notified by which means and in which sequence in case of an aviation accident;

(3) special notification requirements in the event of an aviation accident or incident when dangerous goods are being carried;

(4) a description of the requirements to report specific aviation accidents and incidents;

(5) the forms used for reporting and the procedure for submitting them to the relevant authority must also be included; and

(6) if the operator develops additional safety related reporting procedures for its own internal use, a description of the applicability and related forms to be used.

2.1.13 Rules of the air

Rules of the air including –

(1) visual and instrument flight rules;

(2) territorial application of the rules of the air;

(3) communication procedures including COM-failure procedures;

(4) information and instructions relating to the interception of civil aeroplanes;

(5) the circumstances in which a radio listening watch is to be maintained;

(6) signals;

(7) time system used in operation;

(8) ATC clearances, adherence to flight plan and position reports;

(9) visual signals used to warn an unauthorised aeroplane flying in or about to enter a restricted, prohibited or danger area;

(10) procedures for pilots observing an aviation accident or receiving a distress transmission;

(11) the ground/air visual codes for use by survivors, description and use of signal aids; and

(12) distress and urgency signals.

2.2 PART B: AEROPLANE OPERATING MATTERS – TYPE RELATED

Taking account of the differences between types, and variants of types, under the following headings:

2.2.1 General information and units of measurement

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.

2.2.2 Limitations

A description of the certified limitations and the applicable operational limitations including –

(1) certification status;

(2) passenger seating configuration for each aeroplane type including a pictorial presentation;
conditions, etc);

(4) flight crew composition;

(5) mass and centre of gravity;

(6) speed limitations;

(7) flight envelope(s);

(8) wind limits including operations on contaminated runways;

(9) performance limitations for applicable configurations;

(10) runway slope;

(11) limitations on wet or contaminated runways;

(12) airframe contamination; and

(13) system limitations.

2.2.3 Normal procedures

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

(1) Pre-flight;

(2) pre-departure;

(3) altimeter setting and checking;

(4) taxi, take-off and climb;

(5) noise abatement;

(6) cruise and descent;

(7) approach, landing preparation and briefing;

(8) VFR approach;

(9) instrument approach;

(10) visual approach and circling;

(11) missed approach;

(12) normal landing;

(13) post landing; and

(14) operation on wet and contaminated runways.

2.2.4 Abnormal and emergency procedures

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

(1) Flight crew incapacitation;

(2) fire and smoke drills;

(3) unpressurised and partially pressurised flight;

(4) exceeding structural limits such as overweight landing;

(5) exceeding cosmic radiation limits;

(6) lighting strikes;

(7) distress communications and alerting ATC to emergencies;

(8) engine failure;

(9) system failures;

(10) guidance for diversion in case of serious technical failure;

(11) ground proximity warning;

(12) TCAS warning;

(13) windshear; and

(14) emergency landing/ditching.

2.2.5 Performance

(1) Performance data must be provided in a form in which it can be used without difficulty.

(2) Performance data. Performance material which provides the necessary data for compliance with the performance requirements prescribed in Part 1 of this technical standard must be included to allow the determination of –

(a) take-off climb limits – 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 climbouts;

(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; and

(j) speeds applicable for the various flight stages (also considering wet or contaminated
runways).

(3) 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. If performance data, as required for the appropriate performance class, is not available in the approved AFM, then other data acceptable to the Director must be included. Alternatively, the operations manual may contain cross-reference to the approved data contained in the AFM where such data is not likely to be used often or in an emergency.

(4) 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; and

(f) flights conducted under the provisions of the CDL.

2.2.6 Flight planning

(1) 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(s)-out operations. ETOPS and flights to isolated aerodromes must be included.

(2) The method for calculating fuel needed for the various stages of flight in accordance with TS 121.07.10.

2.2.7 Mass and balance

Instructions and data for the calculation of the mass and balance including –

(1) calculation system (e.g. index system);

(2) information and instructions for completion of mass and balance documentation, including
manual and computer generated types;

(3) limiting masses and centre of gravity of the various versions; and

(4) dry operating mass and corresponding centre of gravity or index.

2.2.8 Loading

Procedures and provisions for loading and securing the load in the aeroplane.

2.2.9 Configuration deviation list

The Configuration Deviation List(s) (CDL), if provided by the manufacturer, taking account of the aeroplane types and variants operated including procedures to be followed when an aeroplane is being despatched under the terms of its CDL.

2.2.10 Minimum equipment list

The Minimum Equipment List (MEL) taking account of the aeroplane types and variants operated and the type(s)/area(s) of operation.

2.2.11 Survival and emergency equipment including oxygen

(1) A list of the survival equipment to be carried for the routes to be flown and the procedures for checking the serviceability of this equipment prior to take-off. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated check lists(s) must also be included.

(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.

2.2.12 Emergency evacuation procedures

(1) Instructions for preparation for emergency evacuation including flight crew coordination and emergency station assignment.

(2) Emergency evacuation procedures

A description of the duties of all members of the flight 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.

2.2.13 Aeroplane systems

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

2.3 PART C: ROUTE AND AERODROME INSTRUCTIONS AND INFORMATION

Instructions and information relating to communications, navigation and aerodromes including minimum flight levels and altitudes for each route to be flown and operating minima for each aerodrome planned to be used, including –

(1) minimum flight level/altitude;

(2) operating minima for departure, destination and alternate aerodromes;

(3) communication facilities and navigation aids;

(4) runway data and aerodrome facilities;

(5) approach, missed approach and departure procedures including noise abatement procedures;

(6) COM-failure procedures;

(7) search and rescue facilities in the area over which the aeroplane is to be flown;

(8) 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;

(9) availability of aeronautical information and MET services;

(10) *en route* COM/NAV procedures including holding; and

(11) aerodrome categorisation for flight crew competence qualification.

2.4 PART D: TRAINING

(1) Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight.

(2) Training syllabi and checking programmes must include:

(a) For flight deck crew
All relevant items prescribed in Parts 61 and 63 and Subpart 3 of Part 121;

(b) For cabin crew

All relevant items prescribed in Part 64 and Subpart 3 of Part 121;

(c) For operations personnel concerned, including flight crew members:

(i) All relevant items prescribed in Part 92; and

(ii) All relevant items regarding operator security.

(d) For operations personnel other than flight crew members (e.g. dispatcher, handling
personnel etc.). All other relevant items pertaining to their duties.

(3) Procedures

(a) Procedures for training and checking.

(b) Procedures to be applied in the event that personnel do not achieve or maintain the required standards.

(c) Procedures to ensure that ab-normal or emergency situations requiring the application of part or all of abnormal or emergency procedures and simulation of IMC by artificial means, are not simulated during commercial flights.

(4) Description of documentation to be stored and storage periods.

121.04.5 OPERATIONAL FLIGHT PLAN

1. Items in operational flight plan

(1) An operator must ensure that the operational flight plan used and the entries made during flight contain the following items:

(a) Aeroplane registration;

(b) aeroplane type and variant;

(c) date of flight;

(d) flight identification;

(e) names of flight crew members;

(f) duty assignment of flight crew members;

(g) place of departure;

(h) time of departure (actual off-block time, take-off time);

(i) place of arrival (planned and actual);

(j) time of arrival (actual landing and on-block time);

(k) type of operation (ETOPS, VFR, ferry flight, etc.);

(l) route and route segments with checkpoints/waypoints, distances, time and tracks;

(m) planned cruising speed and flying times between check-points/ waypoints. Estimate and actual times overhead;

(n) safe altitudes and minimum levels;

(o) planned altitudes and flight levels;

(p) fuel calculations (records of in-flight fuel checks);

(q) fuel on board when starting engines;

(r) alternate(s) for destination and, where applicable, take-off and *en route*, including information required in subparagraphs (l), (m), (n) and (o) above;

(s) initial ATS flight plan clearance and subsequent reclearance;

(t) in-flight replanning calculations; and

(u) relevant meteorological information.

(2) Items which are readily available in other documentation or from an acceptable source or which are irrelevant to the type of operation, may be omitted from the operational flight plan.

(3) An operator must ensure that the operational flight plan and its use is described in the operations manual.

(4) An operator must ensure that all entries in the operational flight plan are made concurrently and that they are permanent in nature.

121.04.7 RECORDS OF EMERGENCY AND SURVIVAL EQUIPMENT

1. Emergency and survival equipment list

The minimum information to be contained in an emergency and survival equipment list, is prescribed below:

1. Emergency and survival list

An owner or operator must have a list containing the following minimum information regarding the emergency and survival equipment carried on board:

(1) The number, colour and type of life rafts and pyrotechnics;

(2) details of emergency medical supplies;

(3) water supplies; and

(4) type and frequencies of emergency portable radio equipment.

121.04.9 LOAD AND TRIM SHEET

1. Load and trim sheet

(1) The load and trim sheet must contain the following information:

(a) The aeroplane registration and type;

(b) the flight identification number and date;

(c) the identity of the pilot-in-command;

(d) the identity of the person who prepared the document;

(e) the dry operating mass and the corresponding CG of the aeroplane;

(f) the mass of the fuel at take-off and the mass of trip fuel;

(g) the mass of consumables other than fuel;

(h) the components of the load including passengers, baggage, freight and ballast;

(i) the take-off mass, landing mass and zero fuel mass;

(j) the load distribution;

(k) the applicable aeroplane CG positions; and

(l) the limiting mass and CG values.

(2) The person superintending the loading of an aeroplane must certify that the load distribution is in accordance with the requirements prescribed in the operations manual or flight manual and that the maximum certificated mass has not been exceeded.

(3) The load and trim sheet must be signed by the pilot-in-command unless the load and trim sheet is sent to the aeroplane by electronic data transfer.

(4) When the load and trim sheet is sent to the aeroplane by electronic data transfer, a copy of the final load and trim sheet, as accepted by the pilot-in-command, must be available on the ground.

121.04.13 MAINTENANCE CONTROL MANUAL

An Air Operator's Maintenance Control Manual shall be developed in accordance with the following guidance material entitled ***Minimum Contents for a Maintenance Control Manual .***

1. Each air operator certificate applicant and air operator certificate holder shall submit and maintain a maintenance control manual containing at least the information set forth below.

2. The manual may be put together in any subject order and subjects combined so long as all applicable subjects are covered.

1.0 Administration and Control of the Maintenance Control Manual

1.1 Introduction

(a) A statement that the manual complies with all applicable Authority regulations and requirements and with the terms and conditions of the applicable Air operator certificate.
(b) A statement that the manual contains maintenance and operational instructions that are to be complied with by the relevant personnel in the performance of their duties.
(c) A list and brief description of the various Maintenance Control Manual parts, their contents, applicability and use.
(d) Explanations and definitions of terms and words used in the manual.

1.2 System of Amendment and Revision

(a) A Maintenance Control Manual shall describe who is responsible for the issuance and insertion of amendments and revisions.
(b) A record of amendments and revisions with insertion dates and effective dates is required.
(c) A statement that hand-written amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of safety.
(d) A description of the system for the annotation of pages and their effective dates.
(e) A list of effective pages and their effective dates.
(f) Annotation of changes (on text pages and as practicable, on charts and diagrams).
(g) A system for recording temporary revisions.
(h) A description of the distribution system for the manuals, amendments and revisions.
(i) A statement of who is responsible for notifying the Authority of proposed changes and working with the Authority on changes requiring Authority approval.

2.0 General Organisation

2.1 Corporate commitment by the air operator certificate

2.2 General information:

a) Brief description of organization
b) Relationship with other organizations
c) Fleet composition - Type of operation
d) Line station locations

2.3 Maintenance management personnel:

a) Accountable Manager
b) Nominated Postholder
c) Maintenance co-ordination
d) Duties and responsibilities
e) Organization chart(s)
f) Manpower resources and training policy
g) Human performance including principles of threat and error management

2.4 Notification procedure to the Authority regarding changes to the maintenance arrang locations, personnel, activities, or approval.

3.0 Maintenance Procedures
3.1 Aircraft logbook utilization and MEL application
3.2 Aircraft maintenance programme - development and amendment.
3.3 Time and maintenance records, responsibilities, retention
3.4 Accomplishment and control of mandatory continued airworthiness information (Airworthiness Directives)
3.5 Analysis of the effectiveness of the maintenance programme
3.6 Non-mandatory modification embodiment policy
3.7 Major modification standards
3.8 Defect reports
a) Analysis
b) Liaison with manufacturers and Regulatory Authorities
c) Deferred defect policy
3.9 Engineering activity
3.10 Reliability programmes
a) Airframe
b) Propulsion
c) Components
3.11 Pre-flight inspection
a) Preparation of aircraft for flight
b) Sub-contracted Ground Handling functions
c) Security of Cargo and Baggage loading
d) Control of refuelling, Quantity/Quality
e) Control of snow, ice, dust and sand contamination to an approved aviation standard.
3.12 Aircraft weighing
3.13 Flight test procedures
3.14 Sample of documents, tags and forms used
3.15 Appropriate portions of the air operator certificate holder's operations manual

121.04.14 Minimum Equipment List

MINIMUM EQUIPMENT LIST (MEL)

1.0 PURPOSE

This is to provide guidance to operators for the development of a Minimum Equipment List as required by MOZCARs Part 121 Regulations.

2.0 GENERAL

2.1 MOZCARs Part 121.07.37 Civil Aviation Regulations requires that an operator includes in his operations manual a Minimum Equipment List (MEL), which specifies for a given model of aircraft the minimum operable equipment required, taking into account operating rules for the existing environmental conditions for the commencement and continuance of flight.

2.2 Each operator is required to produce an MEL appropriate to his own routes and procedures within the limitations defined by the Master Minimum Equipment List (MMEL) for the aircraft.

3.0 MASTER MINIMUM EQUIPMENT LIST

3.1 In conjunction with the certification of each new transport type aircraft, a Board is normally established by the certifying State to develop and maintain an MMEL for the aircraft and additional models of that aircraft developed in the future. The Board is an advisory body to the CAA of the certifying State with representation from the flight operations and airworthiness organisations within the CAA, as well as from the organisation responsible for the type design and the initial operators of the aircraft.

3.2 The development of the MMEL requires detailed analysis and careful safety assessment. The interaction between systems needs to be fully analysed to ensure that multiple failures will not result in an unsatisfactory level of safety. When an aircraft is designed it is designed to achieve a certain level of safety. When any one system, instrument or equipment becomes inoperative, the design level of safety is reduced. With modern aircraft it is usual to provide extra redundancy in some systems to enable the aircraft to take off and complete a flight with acceptable margins of safety even if, for example, one channel of a system has failed during a previous flight. Minor deficiencies, even without the provision of extra redundancy, which do not too seriously affect safety, may be acceptable for an occasional flight. In any case, the MMEL board would need to carry out a thorough safety assessment as a guide to developing an acceptable list.

3.3 The MMEL would not include obviously required items such as wings, empennage, flaps, powerplants, etc., nor would it include items which do not affect the airworthiness of the aircraft, such as galley equipment, entertainment systems, etc. It must be emphasized and understood that all items which are related to the airworthiness of the aircraft and are not included on the MMEL are automatically required to be operative.

3.4 The actual format of the MMEL may vary, but all major systems would be listed to indicate they have been considered (communications systems, navigation systems, automatic flight control systems, etc.). In addition, those components of a system required for flight or certification would be listed on the MMEL (e.g. attitude gyros, VSI, DME, etc.).

3.5 The MMEL board is responsible for maintaining an up-to-date MMEL. Amendment normally results from operator experience or analyses carried out by the organization responsible for the type design.

3.6 The current MMEL for a given aircraft would normally be obtained from the organization responsible for the type design of the aircraft or from the civil aviation authority of the certifying State.

4.0 OPERATOR MINIMUM EQUIPMENT LIST

4.1 A minimum equipment list, approved by the Authority, is required for each aircraft, based on the MMEL established for the aircraft type by the organization responsible for the type design in conjunction with the State of Design. An operator is required to produce his own MEL based on the MMEL for the type and variant of aircraft. The operator's MEL is submitted to the Authority for approval. The approved MEL must be made available for the use and guidance of flight and ground operations personnel. The MEL should be tailored to the individual operator's routes and procedures within the constraints imposed by the MMEL. The MMEL is not normally part of the required aircraft documentation and it is frequently necessary for an operator to request a copy of the current MMEL and amendments as they occur, in order to develop and maintain an MEL for approval by the Authority.

4.2 In developing an MEL, the philosophy should be to authorize continuation of flight with inoperative equipment only when the inoperative equipment does not render the aircraft unairworthy for the particular flight. Limitations, procedures and substitutions may be used to provide conditions under which the inoperative equipment will not make the operation unsafe or the aircraft unairworthy. This is not a philosophy which permits reduced safety in order to fly to a base where repairs can be made, but rather a philosophy which permits safe operations for a take-off from a maintenance base or an en-route stop. It is emphasized that the operator will need to exercise close operational control over the use of the MEL by all concerned.

4.3 MOZCARs Part 121.07.37 Regulations requires that an air operator carries an MEL on board. This may be part of his operations manual or a separate document. The manual must contain en-route flight, navigation and communications procedures for the continuance of flight if any item of equipment required for the operation becomes unserviceable en route. The manual must also cover requirements and procedures for dispatch with unserviceable equipment.

5.0 OPERATOR RESPONSIBILITIES

5.1 An operator is responsible for exercising the necessary operational control to ensure that his aircraft are not dispatched with multiple MEL items inoperative without first determining that any interface or interrelationship between the inoperative systems or components will not result in degradation in the level of safety or an undue increase in crew workload.

5.2 The MEL is not intended to provide for continued operation of the aircraft for extended periods with MEL items unserviceable. In the case of unserviceable MEL items, the operator should generally make repairs at the first station where repairs or replacement may be made, but in any case repair should be accomplished at the flight termination station, since additional unserviceability may require the aircraft to be removed from service.

5.3 The exposure to additional failures during continued operation with inoperative systems or equipment must also be considered in determining that an acceptable level of safety is being maintained. The MEL is not allowed to deviate from requirements of the flight manual limitations section, emergency procedures or other airworthiness requirements of the State of Registry or of the Authority unless the appropriate airworthiness authority or the flight manual provides otherwise.

5.4 Systems or equipment accepted as inoperative for a flight should be placarded where appropriate and all such items should be noted in the aircraft technical log to inform the flight crew and maintenance personnel of the inoperative system or equipment.

5.5 For a particular system or item of equipment to be accepted as inoperative, it may be necessary to establish a maintenance procedure, for completion prior to flight, to deactivate or isolate the system or equipment. It may similarly be necessary to prepare an appropriate flight crew operating procedure.

5.6 MOZCARs Part 91 Regulations requires the PIC to be responsible for the safe operation of an aircraft. Therefore the PIC shall decide whether or not to accept an aircraft with unserviceable equipment as permitted by the CDL or MEL

121.05.1 APPROVAL OF INSTRUMENTS, NAVIGATION AND COMMUNICATIONS EQUIPMENT

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1. Altitude Alerting

(1) Subject to subsection (2), no person shall conduct a take-off in a turbo-jet-powered aeroplane unless it is equipped with an altitude alerting system or device that is capable of:

(a) alerting the pilot on approaching a pre-selected altitude, either in ascent or descent, in sufficient time for level flight to be established at the pre-selected altitude:

(i) by producing a sequence of aural and visual signals during operations at 3,000 feet or more above ground level; and

(ii) by producing a sequence of aural or visual signals during operations at less than 3,000 feet above ground level; and

(b) producing the signals described in paragraph (a) from sea level to the highest operating altitude approved for the aeroplane.

(2) An aeroplane referred to in subsection (1) may be operated without a serviceable altitude alerting system or device if:

(a) where a minimum equipment list has been approved by the Authority in respect of the operator of the aeroplane pursuant to 121.07.37, the aeroplane is operated in accordance with the minimum equipment list; or

(b) where a minimum equipment list has not been approved by the Authority in respect of the operator of the aeroplane, the aeroplane is operated

(i) from the place where the operator or pilot-in-command takes possession of the aeroplane to a place where the aeroplane can be equipped with such a system or device,

(ii) for the sole purpose of conducting a flight test, a pilot proficiency check or flight crew member training, or

(iii) where the system or device becomes unserviceable after take-off, until it reaches an aerodrome at which the system or device can be repaired or replaced.

Note: The altitude alert system or device may be tested without special equipment.

2. Standby Attitude Indicator

(1) Every standby attitude indicator shall:

(a) be powered from a source independent of the electrical generating system;

(b) be operative without selection after total failure of the electrical generating system;

(c) continue reliable operation for a minimum of 30 minutes after total failure of the electrical generating system;

(d) operate independently of any attitude indicator system; and

(e) have the indicating instrument:

(i) located in an position on the instrument panel where it is plainly visible to and usable by any pilot at his pilot station; and

(ii) appropriately illuminated during all phases of operation.

121.05.5 GROUND PROXIMITY WARNING SYSTEM (EGPWS)

(1) Subject to subsections (2) and (3), no person operating under Part 121 after January 1, 2007, shall conduct a take-off in a turbo-jet-powered piston powered aeroplane that has a MCTOW of more than 5,700 KG (12,000 pounds) and for which a type certificate has been issued authorizing the transport of 10 or more passengers, unless the aeroplane is equipped with a ground proximity warning system with forward looking capability (EGPWS).

(2) An aeroplane referred to in subsection (1) may be operated without a serviceable ground proximity warning system if a minimum equipment list has been approved by the Director in respect of the operator of the aeroplane pursuant to Part 121.07.37 and the aeroplane is operated in accordance with the minimum equipment list.

(3) Where, in the interests of aviation safety, it is necessary during a flight to deactivate any mode of a ground proximity warning system, the pilot-in-command of the aeroplane may deactivate that mode if the deactivation is performed in accordance with the aircraft flight manual, aircraft operating manual, flight manual supplement or minimum equipment list.

121.05.13 EMERGENCY MEDICAL KIT

1. Contents

The following must be included in the emergency medical kit:

(1) Sphygmomanometer – non mercury

(2) Stethoscope

(3) Syringes and needles

(4) Oropharyngeal airways (2 sizes)

(5) Tourniquet

(6) Coronary vasodilator e.g. nitro-glycerine

(7) Anti-spasmodic e.g. hyascene

(8) Epinephrine 1:1000

(9) Adrenocortical steriod e.g. hydrocortisone

(10) Major analgesic e.g. nalbuphine

(11) Duretic e.g. fursemide

(12) Antihistamine e.g. diphenhydramine hydrochloride

(13) Sedative/anticonvulsant e.g. diazpam

(14) Medication for Hypoglycaemia e.g. hypertonic glucose

(15) Antiemetic e.g. metoclopramide

(16) Atropine

(17) Digoxin

(18) Uterine contractant e.g. Ergometrine/ Oxytocin

(19) Disposable gloves

(20) Bronchial Dilator – including an enjectable form

(21) Needle disposal box

(22) Anti-spasmodic drugs

(23) Catheter

(24) A list of contents in at least 2 languages (English and one other). This must include information on the effects and side effects of drugs carried.)

121.05.19 FLIGHT RECORDERS (FDR/CVR).

All flight data recorders and cockpit voice recorders shall meet the requirements stipulated in TS 91.04.10, TS 91.04.12 and TS 91.04.13.

121.06.2 APPLICATION FOR AIR OPERATOR CERTIFICATE AND OPERATIONS SPECIFICATIONS

1. Application for Air Operator Certificate

The process and format for the application for an Air Operator Certificate is described in detail in the document, Air Operator Certification Manual. All applications for the issue of an Air Operator Certificate or revision thereto, shall be in accordance with the procedures lay down in the manual and supported with the applications forms published therein as applicable to the particular application. Sample AOC application forms are published in Annex C.

121.06.3 ADJUDICATION OF APPLICATION FOR AIR OPERATOR CERTIFICATE

The form, in which an air operator certificate is issued, is contained in Annex B.

121.06.7 COMPLIANCE WITH AN AIR OPERATOR CERTIFICATE

1. Notification

Before change is effected to an AIR OPERATOR CERTIFICATE, the holder of the AIR OPERATOR CERTIFICATE must notify the Authority in the manner prescribed in the Air Operator Certification Manual. The IACM will advise of what certifying actions may be required prior to such changes taking place and where applicable, new authorities issued and amendment to the operations specification.

121.07.1 ROUTES AND AREAS OF OPERATION

1. Time/distance limitations

(1) An operator may not, unless specifically approved by the Authority (ETOPS approval), operate a twin-engine performance Class A aeroplane, with a maximum certificated mass of less than 45 454 kg and a maximum approved passenger seating configuration of more than 190 seats, over a route that contains a point further from an adequate aerodrome than the distance flown, under standard conditions in still air, in 120 minutes at the one-engined inoperative cruise speed. Upon application by an operator, the Authority may approve a distance equivalent to 180 minutes at the one engine inoperative cruise speed under standard conditions in still air, provided the operator can demonstrate an equivalent level of safety to the 120 minute operation and subject to any other conditions that the Authority may deem necessary.

(2) An operator may not operate a twin-engined performance Class B aeroplane on a route that contains a point further, from an adequate aerodrome, than the distance flown, under standard conditions in still air, in 90 minutes at the all-engines maximum-range cruise speed, or 300 nautical miles, whichever is the lesser.

(3) An operator may not, unless specially approved by the Authority (ETOPS approval), operate a twin-engined aeroplane other than the aeroplanes referred to in paragraph (1) or (2) above including cargo aeroplanes, on a route that contains a point further, from an adequate aerodrome, than the distance flown, under standard conditions in still air, in 120 minutes at the one-engine-inoperative cruise speed.

(4) In the case of approved ETOPS operation, an operator must ensure that an *en route* alternate aerodrome is available within the authorised diversion time.

2. Adequate aerodrome

(1) When defining aerodromes for the type of aeroplane(s) and operation(s) concerned, an operator must take account of the following:

(a) An adequate aerodrome is an aerodrome which the operator considers to be satisfactory, taking account of the applicable performance requirements and runway characteristics. In addition, it should be anticipated that, at the expected time of use, the aerodrome will be available and equipped with necessary ancillary services, such as ATS, sufficient lighting, communications, weather reporting, navaids and emergency services.

(2) For an ETOPS *en route* alternate aerodrome, the following additional points must be considered:

(a) The availability of an ATC facility;

(b) the availability of at least one letdown aid (ground radar would so qualify) for an instrument approach; and

(c) the weather at the aerodrome must meet the criteria prescribed for ETOPS in TS 91.07.8.

Note: Guidance material for the granting of ETOPS approval is contained in the Information Leaflet No. 20 "Temporary Guidance Material for Extended Range Operation with Two-Engine Aeroplanes ETOPS Certification and Operation", July 1995, JAR/IL No. 20, issued by the Joint Aviation Authority.

121.07.10 FUEL POLICY

1. Contingency fuel

At the planning stage, not all factors which could have an influence on the fuel consumption to the destination aerodrome can be foreseen. Therefore, contingency fuel is carried to compensate for items such as –

(1) deviations of an individual aeroplane from the expected fuel consumption data;

(2) deviations from forecast meteorological conditions; and

(3) deviations from planned routings and/or cruising levels/altitudes.

121.07.18 CARRY-ON BAGGAGE

1. Procedures for stowing of carry-on baggage

Procedures established by an operator to ensure that carry-on baggage is adequately and securely stowed shall take account of the following:

(1) Each item carried in a cabin must be stowed only in a location that is capable of restraining it;

(2) Mass limitations placarded on or adjacent to stowages shall not be exceeded;

(3) Underseat stowages shall not be used unless the seat is equipped with a restraint bar and the baggage is of such size that it may adequately be restrained by this equipment;

(4) Items shall not be stowed in toilets or against bulkheads that are incapable of restraining articles against movement forwards, sideways or upwards and unless the bulkheads carry a placard specifying the greatest mass that may be placed there;

(5) Baggage and cargo placed in lockers shall not be of such size that they prevent latched doors from being closed securely;

(6) Baggage and cargo shall not be placed where it will impede access to emergency equipment; and

(7) Checks shall be made before take-off, before landing, and whenever the pilot-in-command illuminates the fasten seat belts sign (or otherwise so orders) to ensure that baggage is stowed where it cannot impede evacuation from the aircraft or cause injury by falling (or other movement) as may be appropriate to the phase of flight.

(8) All baggage which is required to be brought into the cabin area shall be:

(a) of a size as controlled by the operator but shall not exceed 115cm (56cm + 36cm + 23cm);

(b) of a weight as controlled by the operator but shall not exceed 7kg per item;

(c) of an amount as controlled by the operator but shall not exceed one bag per economy class seat or two bags per first or business class seat.

Note: This standard is applicable to all aircraft operated domestically in terms of Part 121 and to all Mozambique registered aircraft operated internationally in terms of Part 121. See MCAR 121.01.1.

(9) An operator may request an exemption of the above requirements as per the requirements of MCAR Part 11.

121..07.19 ELECTRONIC DEVICES

USE OF PORTABLE ELECTRONIC DEVICES ABOARD AIRCRAFT

1.0 PURPOSE

1.1 This MOZCAT which provides aircraft operators with information and guidance for assistance in compliance with MOZCARs 121.13. is established because of the potential for portable electronic devices (PED) to interfere with aircraft communications and navigation equipment.

1.2 The regulation prohibits the operation of portable electronic devices aboard Mozambique civil aircraft or any other aircraft while operating under instrument flight rules (IFR) in the airspaces of Mozambique. The regulation also allows use of specified portable electronic devices and other devices that the operator of the aircraft has determined will not interfere with the safe operation of the aircraft in which it is operated specified portable electronic devices and other devices that the operator of the aircraft has determined will not interfere with the safe operation of the aircraft in which it is operated.

1.3 It provides guidance on how an operator may permit use of specified portable electronic devices and other devices that the operator of the aircraft has determined will not interfere with the safe operation of the aircraft in which it is operated. The recommendations contained herein are one means, but not the only means, of complying with The Civil Aviation Regulation requirements, pertaining to the operation of portable electronic devices.

2.0 DISCUSSION

2.1 MOZCARs 121.13 allows for the operation of portable electronic devices which the operator of the aircraft has determined will not interfere with the navigation or communication system of that aircraft. The determination of the effect of a particular device on the navigation and communication system of the aircraft on which it is to be used or operated must, in case of an aircraft operated by an AOC holder or under other operating authorisation, be made by that operator (i.e., certificate holder).

2.2 In all other cases, a determination must be made and it may be made by the operator and/or the pilot-in-command (PIC). In some cases, the determination may be based on operational tests conducted by the operator without sophisticated testing equipment. When safely at cruise altitude, the pilot could allow the devices to be operated. If interference is experienced, the types of devices causing interference could be isolated, along with the applicable conditions recorded. The device responsible for the interference should then be turned off. If many operators collect this type of data with specific information, a large enough database could be generated to identify specific devices causing interference.

2.3 The operator may elect to obtain the services of a person or facility having the capability of making the determination for the particular electronic device and aircraft concerned. The regulation requires commercial air operators to determine whether a particular portable electronic device will cause interference when operated aboard its aircraft. Personnel specifically designated by commercial air operators for this purpose may make this determination. For other aircraft, the language of the regulation expressly permits the determination to be made by the PICs or operators of the aircraft. Thus, in the case of rental aircraft, the renter-pilot, lessee, or owner-operator could make the determination.

3.0 RECOMMENDED PROCEDURES FOR THE OPERATION OF PORTABLE ELECTRONIC DEVICES ABOARD AIRCRAFT

3.1 If an operator allows the use of portable electronic devices aboard his aircraft, procedures should be established and spelled out clearly to control their use during passenger-carrying operations. The procedures, when used in conjunction with an operator's programme, should provide the following:

a) Methods to inform passengers of permissible times, conditions, and limitations when various portable electronic devices may be used. This may be accomplished through the departure briefing, passenger information cards, captain's announcement, and other methods deemed appropriate by the operator. The limitations, as a minimum, should state that use of all such devices (except certain inaccessible medical electronic devices, such as pacemakers) are prohibited during any phase of operation when their use could interfere with the communication or navigation equipment on board the aircraft or the ability of the flightcrew to give necessary instructions in the event of an emergency.

b) Procedures to terminate the operation of portable electronic devices suspected of causing interference with aircraft systems.

c) Procedures for reporting instances of suspected and confirmed interferences by a portable electronic device to the Authority.

d) Cockpit to cabin coordination and cockpit flightcrew monitoring procedures.

e) Procedures for determining acceptability of those portable electronic components to be operated aboard its aircraft. The operator of the aircraft must make the determination of the effects of a particular portable electronic device on the navigation and communication systems of the aircraft on which it is to be operated. The operation of a portable electronic device is prohibited, unless the device is specifically listed in the Operations Manual of the operator. But, even if the device is specifically accepted from the general prohibition on the use of portable electronic devices, an operator may prohibit use of that portable electronic device. The use of all other portable electronic devices is prohibited, unless the operator determines that the operation of that device will not interfere with the communication or navigation system of the aircraft on which it is to be operated.

f) Prohibiting the operation of any portable electronic devices during the takeoff and landing phases of flight. It must be recognized that the potential for personal injury to passengers is a paramount consideration as well as the possibility of missing important safety announcements during these important phases of flight. This is in addition to lessening the possible interference that may arise during sterile cockpit operations (below 10,000 feet).

g) Prohibiting the operation of any portable electronic devices aboard aircraft, unless otherwise authorized, which are classified as intentional radiators or transmitters. These devices include, but are not limited to:

   (i) Radio broadcasting receivers/transmitters.

   (ii) Cellular/satellite telephones.

   (iii) Remote control devices.

3.2 Portable electronic devices designed to transmit have extra consideration. There are certain devices, which by their nature and design, transmit intentionally; they include cellular telephones, broadcasting radios, remote control devices.

3.3 Currently, the Authority does not prohibit use of cellular telephones in aircraft while on the ground if the operator has determined that they will not interfere with the navigation or communication system of the aircraft on which they are to be used. An example might be their use at the gate or during an extended wait on the ground, while awaiting a gate, when specifically authorized by the captain. A cellular telephone will not be authorized for use while the aircraft is being taxied for departure after leaving the gate. The unit will be turned off and properly stowed; otherwise it is possible that a signal from a ground cell could activate it. Whatever procedures an operator elects to

adopt should be clearly spelled out in oral departure briefings and by written material provided to each passenger to avoid passenger confusion.

3.4 Telephones, which have been permanently installed in the aircraft, are licensed as air-ground radio-telephone service in the appropriate frequencies band. In addition, they are installed and tested in accordance with the appropriate certification and airworthiness standards. These devices are not considered portable electronic devices provided that they have been installed and tested by an appropriately approved repair station or an air operator's maintenance organisation and are licensed by the appropriate Communication regulator as air-ground units.

4.0 MANUFACTURERS' TEST CRITERIA FOR PORTABLE ELECTRONIC DEVICES

4.1 Air operators should use manufacturers' information, when provided, with each device that informs the consumer of the conditions and limitations associated with its use aboard aircraft.

121.07.42 EXTENDED RANGE TWIN-ENGINE OPERATIONS

ETOPS MAINTENANCE REQUIREMENTS

1. GENERAL

The maintenance programme should contain the standards, guidance and direction necessary to support the intended operations. Maintenance personnel involved should be made aware of the special nature of ETOPS and have the knowledge, skills and ability to accomplish the requirements of the programme.

2. ETOPS MAINTENANCE PROGRAMME

The basic maintenance programme for the aircraft being considered for ETOPS should be the continuing airworthiness maintenance programme currently approved for that operator, for the make and model airframe-engine combination. This programme should be reviewed to ensure that it provides an adequate basis for development of ETOPS maintenance requirements. These should include maintenance procedures to preclude identical action being applied to multiple similar elements in any ETOPS critical system (e.g. fuel control change on both engines).

ETOPS-related tasks should be identified on the operator's routine work forms and related instructions.

ETOPS-related procedures, such as involvement of centralized maintenance control, should be clearly defined in the operator's programme.

An ETOPS service check should be developed to verify that the status of the aircraft and certain critical items are acceptable. This check should be accomplished and signed off by an ETOPS

qualified maintenance person immediately prior to an ETOPS flight.

Logbooks should be reviewed and documented as appropriate to ensure proper MEL procedures, deferred items and maintenance checks and that system verification procedures have been performed.

3. ETOPS MANUAL

The operator should develop a manual for use by personnel involved in ETOPS. This manual need not include, but should at least refer to, the maintenance programme and other requirements described by this Appendix and clearly indicate where they are located in the operator's manual system. All ETOPS requirements, including supportive programme procedures, duties and responsibilities, should be identified and be subject to revision control. Alternatively the operator may include this information in existing manuals used by personnel involved in ETOPS.

4. OIL CONSUMPTION PROGRAMME

The operator's oil consumption programme should reflect the manufacturer's recommendations and be sensitive to oil consumption trends. It should consider the amount of oil added at the departing ETOPS stations with reference to the running average consumption, i.e. the monitoring must be continuous up to, and including, oil added at the ETOPS departure station. If oil analysis is relevant to this make and model, it should be included in the programme. If the auxiliary power-unit (APU) is required for ETOPS operation, it should be added to the oil consumption programme.

5. ENGINE CONDITION MONITORING

This programme should describe the parameters to be monitored, method of data collection and corrective action process. The programme should reflect manufacturer's instructions and industry practice. This monitoring should be used to detect deterioration at an early stage to allow for corrective action before safe operation is affected. The programme should ensure that engine limit margins are maintained so that a prolonged single-engine diversion may be conducted without exceeding approved engine limits (i.e. rotor speeds, exhaust gas temperatures) at all approved power levels and expected environmental conditions. Engine margins preserved through this programme should account for the effects of additional engine loading demands (e.g. anti-ice. electrical. etc.) which may be required during the single-engine flight phase associated with a diversion.

6. RECTIFICATION OF AIRCRAFT DEFECTS

The operator should develop a verification programme, or procedures should be established, to ensure corrective action following an engine shutdown, primary system failure, adverse trends or any prescribed events which require verification flight or other action and establish means to assure their accomplishment. A clear description of who must initiate verification actions and the section or group responsible for the determination of what action is necessary should be identified in the programme. Primary systems or conditions requiring verification actions should be described in the operator's ETOPS manual.

7. RELIABILITY PROGRAMME

7.1 An ETOPS reliability programme should be developed or the existing reliability programme supplemented. This programme should be designed with early identification and prevention of ETOPS-related problems as the primary goal. The programme should be event-orientated and incorporate reporting procedures for significant events detrimental to ETOPS flights. This information should be readily available for use by the operator and the State of the Operator to help establish that the reliability level is adequate and to assess the operator's competence and capability to safely continue ETOPS. It is recommended that the State of the Operator should be notified within a short time (usually 96 hours) of events reportable through this programme.

7.2 In addition to the items required to be reported by the State of the Operator, the following items should be included:

a) in-flight shut-downs;
b) diversion or turn-back;

c) uncommanded power changes or surges;
d) inability to control the engine or obtain desired power;
e) problems with systems critical to ETOPS; and
f) any other event detrimental to ETOPS.

7.3 The report should also identify the following:
a) aircraft identification (make and serial number);
b) engine identification (make and serial number);
c) total time, cycles and time since last shop visit;
d) for systems, the TSO or last inspection of defective unit;
e) phase of flight; and
f) corrective action.

8. PROPULSION SYSTEM MONITORING

The operator's assessment of propulsion systems reliability for the extended range fleet should be made available to the State of the Operator (with the supporting data) on at least a monthly basis to ensure that the approved maintenance programme continues to maintain a level of reliability necessary for ETOPS. The assessment should include, as a minimum, engine hours flown in the period, in-flight shut-down rate for all causes and engine removal rate computed on a twelve-month rolling average basis. Any adverse sustained trend would require an immediate evaluation to be accomplished by the operator in consultation with the State of the Operator. The evaluation may result in corrective action or operational restriction being applied.

9. MAINTENANCE TRAINING

Maintenance training should focus on the special nature of ETOPS. This programme should be included in normal maintenance training. The goal of this programme is to ensure that all personnel involved in ETOPS are provided with the necessary training so that the ETOPS maintenance tasks are properly accomplished and to emphasize the special nature of ETOPS maintenance requirements. Qualified maintenance personnel are those that have completed the operator's ETOPS training programme and have satisfactorily performed ETOPS tasks under supervision, within the framework of the operator's approved procedures for Personnel Authorization.

10. ETOPS PARTS CONTROL

The operator should develop a parts control programme that ensures the proper parts and configuration are maintained for ETOPS. The programme includes verification that parts placed on ETOPS aircraft during parts borrowing or pooling arrangements as well as those parts used after repair or overhaul maintain the necessary ETOPS configuration for that aircraft.

121.09.5 CONTINUING AIRWORTHINESS INFORMATION

The monitor and assess maintenance and operational experience with respect to continuing airworthiness shall be made and the requested information shall be provided in accordance with the guidance material entitled ***Minimum Contents for a Maintenance Control Manual Part 121 Operator.***

Concepts of Continuing Airworthiness

1. Continuing airworthiness covers all of the processes ensuring that, at any time in their operating life, all aircraft comply with the airworthiness requirements in force and are in a condition for safe operation.

2. It includes, under the control of the respective Civil Aviation Authorities of the State of Design and the State of Registry:

   a) design criteria which provide the necessary accessibility for inspection and permit the use of established processes and practices for the accomplishment of maintenance;

   b) preparation by the organization responsible for the type design of the specifications, methods, procedures and tasks necessary to maintain the aircraft and publication of this information in a format that can be readily adapted for use by an operator;

   c) adoption by the operator of specifications, methods, procedures and tasks, using the information provided by the organization responsible for the type design and preparing that material in the form of a maintenance programme suitable for its operation;

   d) the reporting of defects and other significant maintenance and operational information by the operator to the organization responsible for the type design in accordance with the requirements of the State of Registry;

   e) the analysis of defect, accident and other maintenance and operational information by the organization responsible for the type design, the State of Design and the State of Registry and the initiation and transmission of information and recommended or mandatory action to be taken in response to that analysis;

   f) consideration of, and, as deemed appropriate by the operator or the State of Registry, action on the information provided by the organization responsible for the type design or the State of Design, with particular emphasis on action designated as "mandatory";

   g) accomplishment by the operator of all mandatory requirements concerning the aircraft with particular reference to fatigue life limits and any special tests or inspections required by the certification process or subsequently found necessary to ensure structural integrity; and

   h) preparation of and compliance with Supplemental Structural Inspection Programmes and subsequent requirements related to aging aircraft.

Note.- *General information on the continuing airworthiness procedures followed in individual ICAO Contracting States is published in ICAO Circular 95* -The Continuing Airworthiness of Aircraft in Service.

121.09.7 REPAIR ASSESSMENT OF PRESSURIZED FUSELAGES

1. Reporting Requirements

Every holder of an Air Operator certificate is required to make a written report to the Authority any failure, malfunction or defect in any product, part or appliance operated by such holder which has resulted in any of a reportable aviation incident, or reportable failure, malfunction or defect as defined here in.

(1) Definitions

"reportable aviation incident" means an incident resulting directly from the operation of an airplane having a maximum certificated takeoff weight greater than 5 700 kg, or from the operation of a rotorcraft having a maximum certificated takeoff weight greater than 2 250 kg, where

(a) an engine fails or is shut down as a precautionary measure;

(b) a transmission gearbox malfunction occurs;

(c) smoke or fire occurs;

(d) difficulties in controlling the aircraft are encountered owing to any aircraft system malfunction, weather phenomena, wake turbulence, uncontrolled vibrations or operations outside the flight envelope;

(e) the aircraft fails to remain within the intended landing or takeoff area, lands with all or part of the landing gear retracted or drags a wing tip, an engine pod or any other part of the aircraft;

(f) any crew member whose duties are directly related to the safe operation of the aircraft is unable to perform the crew member's duties as a result of a physical incapacitation that poses a threat to the safety of any person, property or the environment;

(g) depressurization occurs that necessitates an emergency descent;

(h) a fuel shortage occurs that necessitates a diversion or requires approach and landing priority at the destination of the aircraft;

(i) the aircraft is refuelled with the incorrect type of fuel or contaminated fuel;

(j) a collision, a risk of collision or a loss of separation occurs;

(k) a crew member declares an emergency or indicates any degree of emergency that requires priority handling by an air traffic control unit or the standing by of emergency response services;

(l) a slung load is released unintentionally or as a precautionary or emergency measure from the aircraft; or

(m) any dangerous goods are released in or from the aircraft.

" reportable failure, malfunction or defect " - means any defect, malfunction or failure of an aeronautical product, component, equipment or part affecting, or that, if not corrected, is likely to affect, the safety of the aircraft, its occupants or any other person;

"unapproved part" - means any part installed or intended for installation in a type certified aeronautical product, that was not manufactured or certified in accordance with the applicable regulations of the state of production or that is improperly marked or that is documented in such a manner as to mislead with regard to the origin, identity or condition of

(2) The following table identifies certificate holders required to submit service difficulty reports:

Certificate Holders	Pursuant to the following MCAR
Flight Training Unit (Aeroplane & Helicopter)	141
Manufacturer of Aeronautical Products	21
Type Certificate holder	121, 129,135
Distributor of Aeronautical Products	*43
Approved Maintenance Organization	145

(3) A failure, malfunction or defect (FMDR), is to be submitted to the Director of IACM for each occurrence of a reportable service difficulty on a "one SDR per event" basis.

(4) A FMDR is to be submitted for each occurrence of a suspected unapproved part on a "one FMDR per event" basis

(5) An FMDR is to be submitted to the Director within 3 working days from the time the difficulty was first discovered.

(6) The FMDR contains, as a minimum, the following information:

(a) the aircraft registration (where applicable);

(b) occurrence date;

(c) aeronautical product identification;

(d) assembly or specific part causing difficulty;

(e) a complete description of the failure, malfunction or defect;

(f) the name and coordinates of the person or organization submitting the report.

(7) Where not all of the required information is available within the time period specified at subsection (5), an interim report can be submitted by telephone, or other expedient means, to the IACM within that period. Such reports are to be followed by a complete report, in accordance with the requirements of this technical standard, within 14 days of the discovery of the occurrence.

(8) Unless approved in accordance with procedures contained in an organization's approved manual, an interim report with the following information, as a minimum, is to be provided to the Director.

(a) the occurrence date;

(b) the aircraft registration (if applicable);

(c) a description of the defect;

(d) person or the organization submitting the report.

(9) Where a reportable incident occurs and this incident has not yet been reported to the Director, the pilot-in-command, operator, owner and, in the case of a risk of collision, any air traffic controller having knowledge of the incident shall, as soon as possible thereafter and by the quickest means of communication available, report to the Board the following information relative to this reportable incident:

(a) the type, model, nationality and registration marks of the aircraft;

(b) the names of the owner, operator and hirer, if any, of the aircraft;

(c) the name of the pilot-in-command;

(d) the date and time of the incident;

(e) the last point of departure and the point of intended landing of the aircraft;

(f) the location of the incident with reference to some easily defined geographical point, and the latitude and longitude;

(g) the number of crew members aboard, and how many were injured;

(h) the number of passengers aboard, and how many were injured;

(i) a description of the incident and the extent of damage, if any, to the aircraft;

(j) a detailed description of any dangerous goods aboard the aircraft; and

(k) the name and address of the person making the report.

121.10.6 AIR OPERATOR'S SAFETY MANAGEMENT PLAN

An Air Operator's Safety Management Plan shall be developed in a close consultation with the following guidance material entitled ***Flight Safety and Accident Prevention Program Manual Development Guide.***

121.10.7 HUMAN FACTORS RELATED TO AIRCRAFT MAINTENANCE

10.7.1 The objective of this MOZCAT is to discuss human factors related to aircraft maintenance. It is important to note that all necessary documentation, equipment, tools, facilities and training may be made available but still fail to achieve the desired results due to the human element. The Human factor element is a very important subject to understand. Humans are a complex species and do not work like machines. Effective human input requires certain environmental and management attributes.

10.7.2 Most people will think that the common threats to the airworthiness of an aircraft are metal fatigue, corrosion, and excessive wear of components or other results of ageing and use. The actions of the maintenance personnel themselves lie at the heart of many airworthiness problems. Previous statistics indicated that around 15% of major aircraft accidents involve maintenance errors. Whilst the figure may not be high enough to cause alarm, a lot can still be done to reduce it.

10.7.3 Maintenance related Human Errors – may be as a result of some of the following;

a) frustration,

b) fatigue,

c) misunderstandings,

d) memory lapses,

e) lack of knowledge (indicating to training)

f) lack of commitment (attitude)

g) management pressure, etc

10.7.4 Induced handicaps of this nature may create powerful forces affecting the quality of maintenance and hence the airworthiness of aircraft. Maintenance errors have a significant impact on safety and it is our obligation as the IACM to identify possible existence of such

threats within the maintenance systems and subsequently ensure something is done to resolve such in-direct safety concerns.

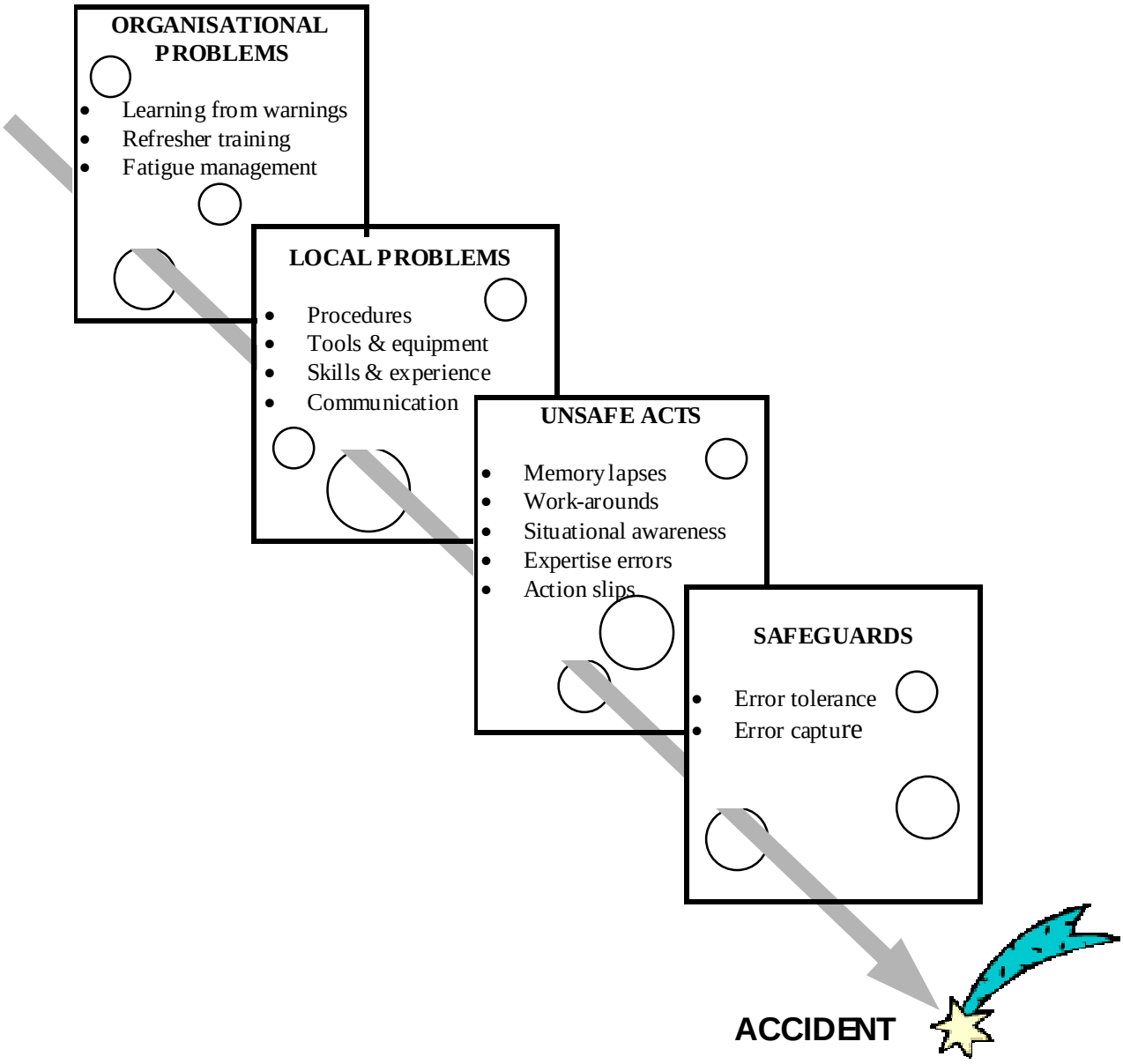
10.7.5 The same human errors also have serious impact on the financial performance of large and small operators alike. A single in-flight turn-back of a wide body aircraft may mean accommodation of passengers overnight with meals. This un-budgeted expenditure arising from maintenance related human errors can bring a company down if allowed recur frequently.

10.4.6 The term 'human error' is used in the context that some of these weaknesses can be avoided and prevented. Most aviation accidents do involve human error at some point in the chain of events and this includes operational personnel as well. However, we need to recognize that these errors (or unsafe acts) tend to be just one link in a chain of events. A useful framework to use when considering human factors issues is the ‘Model for causes of Accidents’ shown on the next page.

10.7.7 Isolated unsafe acts may be viewed as small problems but in actual fact they are symptoms of wider and more serious problems. An accident is never as a result of one cause but is a result of a series of negative events that are normally ignored over a long period and considered irrelevant or minor until the negatives connect to form a strong chain leading to an accident.

10.7.8 Organization quality assurance departments and the Authority (IACM) should therefore perform routine audits in order to intercept these blocks. Interception of these negative blocks can not just be done by identifying a Finding or Non-Conformance safety related observation, but by effecting corrective action without unnecessary delay. Again this is the critical element of Resolution of safety Concerns.

Model on causes of Incidents/Accidents



10.7.9 Unsafe acts: What goes wrong? The human tendency to adapt to an environment may be a natural phenomenon but if not carefully monitored may be disastrous. If a bad habit is repeated long enough it becomes normal and acceptable. The same applies to a bad culture. The following are examples of sub-standard practices which may have been ignored over a long period thereby becoming known and acceptable practices within an organization. These will slowly become part of an organizational culture. Issues like these may include;

a) Casual approach to maintenance tasks,

b) Withdrawal of spares from Stores using old samples,

c) Performing routine maintenance tasks without aid or guidance from maintenance manuals,

d) Performing sequenced tasks without making reference to appropriate checklists,

e) Paying very little attention to quality audit findings and corrective measures required,

f) Lack of individual commitment because everyone else seems to behave in that manner,

g) Disregarding indications (symptoms) of problems by considering them as minor and nothing new to the organization,

h) Failure to adequately address root causes of frequent incidents,

i) In-effective management where individuals give-up when their concerns are repeatedly not addressed by higher management,

j) Ignoring safety concerns as a way of protesting against lack of recognition by management,

k) Lack of commitment because accountability will be placed on the certifying personnel.

l) Studying to pass an examination and not to understand aircraft systems,

10.7.10 The listed organization cultural problems are only a few examples of the numerous possible reasons that allow maintenance standards to deteriorate thereby creating opportunities for an accident.

10.7.11 In aviation, quality is everyone's responsibility. Quality control measures are a means of implementing established quality standards at all levels of maintenance. Quality assurance verifies compliance with quality control measures. In most cases if maintenance personnel adhere to quality control requirements, many maintenance related incidents and accidents can be avoided.

10.7.12 In order to intercept the chain that may lead to an accident, Inspectors should be capable of detecting such threats which amongst others include the following;

a) Inadequacy of maintenance procedures,

b) In-effective management structure for maintenance activities,

c) A compromised Quality Assurance reporting system,

d) In-effective Quality Assurance department,

e) Maintenance malpractices ,

f) In-effective management on resolution of safety concerns,

g) Inadequate training for maintenance personnel,

h) Inadequate tooling and equipment,

i) Unsafe practices in workshops and hangars,

j) Poor communication at management level and between management and technical staff.

10.7.13 Memory lapses - do not generally happen randomly, but often occur when a person is interrupted to go and perform a different task. Juggling maintenance tasks on several aircraft is a common situation which can lead to a memory lapse. When the number of certifying personnel is limited, individuals may be forced to attend to more than one maintenance activity at a given time and this can cause memory lapses.

10.7.14 In these circumstances, common excuses would be;

a) I was the only person on shift…….

b) I was responsible for both hangar and line maintenance so……

c) I was distracted from my task so I forgot to tighten the nuts…….

d) I wrote down the finding with the intention of raising a Non-conformance but…..

10.7.15 Work-arounds - involve performing a task without all the necessary equipment, or in a less convenient manner than that in the approved procedures. Some work-arounds are more serious than others, as in the case of staff faced with time constraints. Having to perform a task within a limited time-frame creates room for shoddy maintenance practices. A typical example would be defect rectification on an aircraft in transit. Rushed maintenance practices may include;

a) working without making reference to maintenance manuals,

b) improvising tooling to avoid down time by arranging for the correct tool to be loaned from stores area,

c) withdrawing spares from stores by use of a sample to avoid down time by searching for part numbers in the manufacturer's parts catalogue,

d) performing maintenance activities without recording details as required due to limited time

e) completing a task after the end of a shift bearing in mind you are holding other shift members who are waiting and anxious to go

10.7.16 Work-arounds may not necessarily result in immediate incidents or accidents but if the practice is allowed to continue, it will become normal practice even where adequate time is available. When coupled with other loop holes, an accident may occur.

10.7.17 Maintenance personnel are often caught up in a compromising situation whereby they are informed by management to follow the maintenance procedures, and at the same time are expected to complete specific tasks within limited timeframes in such a way that following procedures will be time consuming. Under these circumstances improper practices are normally engaged and supervising personnel are usually aware and with time this becomes acceptable practice for as long as nothing goes wrong.

10.7.18 Situational Awareness Errors - occur when the mechanic starts work without first gaining an accurate picture of the situation being dealt with. Often, they don't realise that the situation is different from normal, as when a mechanic activates hydraulics without noticing that cockpit controls have been moved while the hydraulics were off. In other cases, an engineer may not be aware of work being done by other workers on the same aircraft.

10.7.19 Expertise Errors - happen when someone doesn't have the knowledge, skills or experience to do all aspects of their job. As might be expected, errors of expertise tend to involve less experienced workers. Errors of this kind could indicate deficiencies in training and/or recruitment of wrong calibre of personnel where no amount of training could make them very capable. Younger personnel need to know about the traps lying in wait for them, yet too often they are allowed to discover these for themselves.

10.7.20 Action slips - Occur when someone accidentally does something unintentionally. Slips tend to occur on routine, highly familiar tasks. For example,

A mechanic accidentally puts engine oil into the hydraulics system of an aircraft. If noticed before a flight then that can be resolved but if this goes un-noticed, an incident or accident could be on the way.

10.7.21 Local problems- Confusion, misunderstandings or differences in opinion about how to effect certain requirements can create problems. It is not unusual to find that workers have a fairly limited understanding of a company's formal policies and procedures and instead follow informal practices developed on the job. Older, experienced workers will sometimes develop their own practices, which may be different from the approved procedures. Unworkable or inconvenient procedures prompt the sort of work-arounds described earlier.

10.7.22 Communication Breakdowns – There are 2 common categories of communication, i.e. ‘Communication and Effective Communication’. Communication is just any process or a transaction whether verbally, in writing or by sign language involving 2 people or more. In this category individuals involved may not necessarily be talking of the same thing or understanding each other well. Effective Communication is when the same process takes place but this time with a common understanding. For our purposes, team-work requires more than just technical know-how, but implementation of effective communication.

A typical example is when a Captain of an aircraft instructs the First Officer; “Take-off Power”. Communication took place but the question is how effective was it because the instruction

may mean 2 opposite actions. Take-off power as in cutting off power or Take-off power as in applying maximum engine power for take-off.

10.7.23 Pressure or Haste - Since the early days of aviation maintenance personnel have faced pressures to get aircraft back into service. However, as aircraft become more complex and operators strive to reduce the amount of time that aircraft spend in maintenance, pressure is a growing fact of life for maintenance engineers. A particular risk is that engineers faced with real or self-imposed time pressures will be tempted to take shortcuts to get an aircraft back into service more quickly. Management tends to focus on business schedules as opposed to safety matters.

10.7.24 Safeguards - Functional checks and independent inspections are examples of safeguards designed to capture errors before they cause harm. Maintenance systems should therefore effectively implement built-in safeguards such as independent inspections/audits and functional tests designed to capture errors on critical tasks. By necessity, these error-capturing safeguards generally occur at the end of tasks or maintenance activities. Normally the moment management gets to know that the task has been completed, there is mounting pressure to get the aircraft or component released. In these circumstances maintenance personnel face the temptation to leave out or shorten procedures for safeguards. It is therefore possible that some functional checks are not performed as required due to lack of time. Although everything may appear well, such decisions may have seemed safe and reasonable under the circumstances but decisions made under pressure do not always stand the test of hindsight.

10.7.25 Lack of Tools / Equipment / Spares - Many work-arounds occur in response to a lack of appropriate hardware or spares. It is understandable that airlines will try to reduce their stocks of expensive spares however in some cases relatively inexpensive spares such as o-rings are nil-stock items. Furthermore, a lack of major spares can lead to increased cannibalization of parts from other aircraft, which in turn doubles the disturbance to systems and increases the potential for human error.

10.7.26 A common theme underlying these problems is that maintenance personnel may need training in human factors areas such as communication, supervision, and dealing with pressure and frustration. The great benefit of human factors training is not only that people change, but that people can see the opportunities to change the systems in which they work. For this reason, managers, who have the most power to change things, should not be excluded from human factors training.

10.7.27 Organizational factors – It is very crucial to establish the weaknesses In the overall system of an organization. NB; Maintenance incidents can reflect a range of organizational problems.

10.8 Maintenance Incidents

10.7.1 Lack of adequate training – Initial and refresher training play a very fundamental role in the capacity and competency building of maintenance personnel. The regulations require that maintenance personnel receive appropriate and adequate training. However, in reality, few maintenance engineers receive refresher training once they have gained their licenses. Without such training, non-standard work practices can develop or engineers can lose touch with changes in regulations or company procedures. In technical terms

'Maintenance engineers are like torque wrenches, they need to be re-calibrated from time to time'. Training also rejuvenates the mind and provides the opportunity to emphasize on the need to maintain safe practices. It also shows management recognition of maintenance personnel.

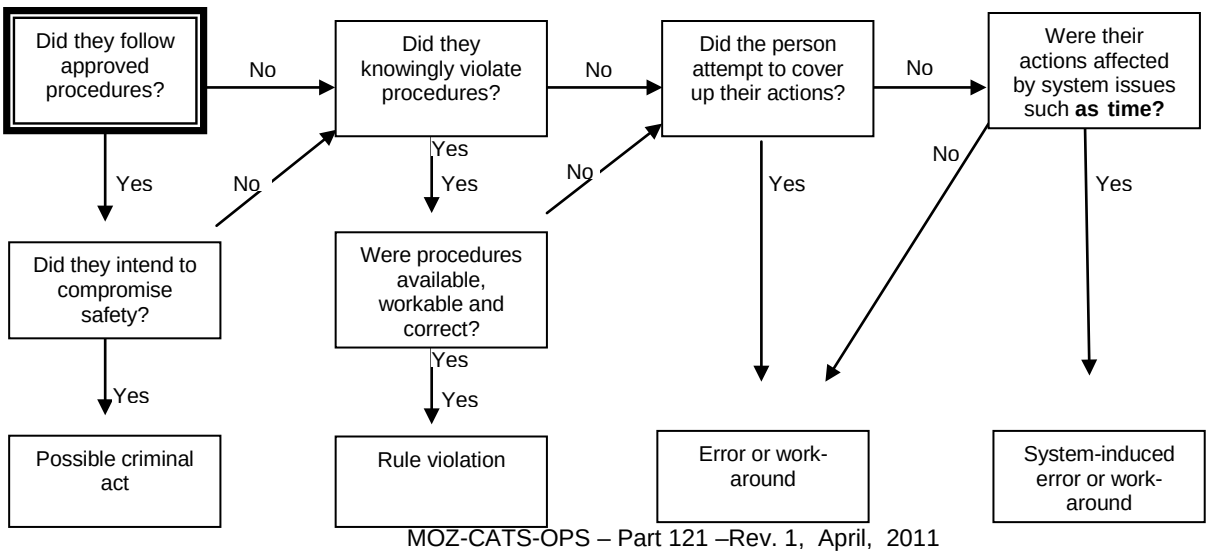
10.8.2 Failure to learn from incidents - The conventional wisdom among safety experts is that for every accident there may be 30 or more previous minor incidents. It has become apparent that before a serious quality lapse occurs, there are usually earlier incidents which could have acted as warnings of the existence of a problem or problems. It is unfortunate management do not always learn the right lessons from these 'warning incidents. Instead people have a tendency to trade blame from one office to the other thereby diverting from the actual cause or causes of the incident. It is never easy to admit a mistake and it is worse when an organization punishes people who make honest mistakes, and admit to their mistakes. A punitive culture within an organization or the Authority creates an atmosphere in which problems are quietly corrected. This then places barriers in the way of learning from our mistakes.

10.8.3 Resolution of safety Concerns - One action which managers can take to ensure that they hear about the hidden 'warning incidents' is to have a clear 'responsibility policy; which outlines how the organization will respond to maintenance incidents. Staff should be encouraged to report small incidents so that they are addressed before they combine to form big incidents or accidents. When an incident or incident has been reported, the focus of an investigation should normally be on identifying system problems, not on identifying personal deficiencies of individuals.

NB: There may be rare times when incidents are related to intentional acts of malice, but the great majority of maintenance personnel do their jobs with diligence and integrity and most incidents reflect system problems which go beyond individuals.

10.8.4 An internal investigation that only results in recommendations directed at the level of individuals, (such as reminders to engineers to 'be more careful' or to 'follow procedures more closely') are sure signs that the investigation did not identify the system failures which led to an occurrence. Structured methods to help managers identify system failings in maintenance, such as the Boeing maintenance error decision aid (MEDA) system have been developed.

10.5.5 This is a typical example of a structured method of identifying system weaknesses starting with identification of failure to follow procedures.



10.8.6 Fatigue and Sleep deprivation - There is probably no way to avoid the need for maintenance to be done at night; however, this does not mean that fatigue levels cannot be managed. Unfortunately, almost all night-shift workers suffer from a lack of quality sleep. This is because many do not find it easy to adjust to day-time sleep therefore quality sleep and rest can not be achieved. Some research has established that moderate sleep deprivation of the kind experienced by shift workers can produce effects very similar to those produced by alcohol. After 18 hours of being awake, mental and physical performance on many tasks is affected as though the person had a blood alcohol concentration. Naturally lack of concentration and in-effectiveness coupled with poor judgment will become the immediate safety threat. The other concern is that fatigued individuals are not always aware of the extent to which their capabilities have degraded causing diminishing performance.

10.8.7 Regulatory Duty Limits – In order to ensure maintenance personnel are not over-worked thereby creating safety hazards, Inspectors shall ensure provisions of duty time limitation regulations are implemented by organizations.

10.8.8 Unsafe acts are generally symptoms of wider problems, human factors is not just about focusing on people but on the systems within which people work. Implementation of safe practices will significantly improve and achieve higher levels of safer maintenance. These include among other requirements;

a) Effective implementation of refresher training, particularly on company policies and procedures and inspection systems.

b) Introduction of a clear Policy on 'Resolution of Safety Concerns' in order to remove barriers that discourage people from reporting unsafe practices or minor incidents.

c) Adherence to duty time limits as required by the regulations. Volunteers for over-time should not be permitted to work beyond duty times.

d) Introduce and implement human factors training for management and staff.

e) Minimize the simultaneous disturbance of multiple or parallel tasks .

10.8.9 While striving for highest standard of performance by those maintaining aircraft, it should be recognized that making mistakes is an unfortunate but unavoidable consequence of being human. Therefore the approach to such findings and the related corrective action should always be a practical one without victimization.

10.8.10 Effective surveillance will demand individual commitment coupled with good knowledge of the general overview of the concept of Continuing Airworthiness and Surveillance. Maintenance personnel are encouraged to peruse a variety of informative aviation publications that provide information on recent events and observations around the globe. In addition to formal training, Engineers should take the initiative to equip themselves with relevant knowledge in aviation safety amongst other subjects.

121.10.8 MAINTENANCE CONTROL BY RELIABILITY METHODS

1.0 PURPOSE

1.1 This MOZ-CAT is issued to provide information and guidance which may be used to design or develop a maintenance programme that utilizes reliability control methods. The aircraft maintenance reliability program is a sub section of an approved aircraft maintenance programme.

1.2 It gives practices acceptable to the Authority with regard to development, management and approval of aircraft maintenance reliabilty control programmes using the Manufacturer's Maintenance Planning Document which establish the criteria for classifying maintenance processes.

2.0 REFERENCES.

2.1 MOZ-CARs 121.9.6 requires an AOC holder to ensure that each aircraft is maintained in accordance with the approved maintenance programme. It further requires that a maintenance programme for aircraft with maximum takeoff mass above 5700 kg operated under the Regulations to include a reliability programme.

2.2 Federal Aviation Administration AC 120-17A (Maintenance Control by Reliability Methods).

3.0 GUIDANCE AND PROCEDURES

3.1 General:

3.1.1 The Reliability Control Program focuses on maintaining failure rates below a predetermined value; i.e., an acceptable level of reliability.

3.1.2 The maintenance philosophy, consideration of operational and environmental factors, record keeping systems, the extent and scope of the operator's application of reliability control, are reflected and defined in his own reliability programme document. .

3.1.3 There are four general categories of an operator's maintenance programme –

a) Systems/components;

b) Powerplants/components;

c) Aircraft/engine checks and inspections; and

d) Structural inspection/overhaul.

3.1.4 All four may be controlled by a composite programme, or each may be handled individually. The programme can encompass a select group of items from a category without affecting other controls for the remaining items of that category. For example, the basic engine might be maintained by a programme that does not include its accessories. The accessories could be on another programme or they could be under traditional operations specifications control.

3.1.5 Statistical analysis is most effective in its application to systems and components because the occurrence of failures can be readily reduced to meaningful statistics. When alert rates are used in the analysis, graphic charts (or equivalent displays) show areas in need of corrective action. Conversely, statistical analysis of inspection findings or other abnormalities related to aircraft/engine check and inspection periods requires judgmental analysis. Therefore, programmes encompassing aircraft/engine check or inspection intervals might consider numerical indicators, but sampling inspection and discrepancy analysis would be of more benefit.

3.1.6 The three Primary Maintenance Processes utilized by maintenance programmes are:

a) hard-time;

b) on-condition; and

c) condition-monitoring.

3.1.7 Each programme should include specific definitions of the processes it uses and how they are applied. The detailed requirements for the condition-monitoring process are included in the Airline Manufacturer Maintenance Planning Document – **MSG-2 and 3 (as revised) .**

3.2 Control Systems

3.2.1 The maintenance reliability program must reflect the application of the following control systems:

a) data collection;

b) data analysis;

c) corrective action;

d) performance standards;

e) data display and report;

f) maintenance interval adjustment and process change, and;

g) programme revision.

3.2.2 These systems explain the framework which the operator can use to develop his particular reliability programme.

3.3 Data collection system

3.3.1 Typical sources of performance information are as follows, however, it does not imply that all of these sources need be included in the programme nor does this listing prohibit the use of other sources of information:

a) Pilot reports;

b) In-flight engine performance data;

c) Mechanical interruptions/delays;

d) Engine shutdowns;

e) Unscheduled removals;

f) Confirmed failures;

g) Functional checks;

h) Bench checks;

i) Shop findings;

j) Sampling inspections;

k) Inspection writeups; and

l) Service difficulty report Mechanical Reliability Reports (MRR).

3.4 Data analysis system

Data analysis is the process of evaluating mechanical performance data to identify characteristics indicating a need for programme adjustment, revision of maintenance practices, hardware improvement (modification), etc. The initial step in analysis is the comparison of the data to a standard representing acceptable performance. The standard may be a running average, tabulations of removal rates for past periods, graphs, charts, or any means of depicting a "norm."

3.5 Corrective action system

The actions to be taken are a reflection of the analysis and should be positive enough to effectively restore performance to an acceptable level within a reasonable time. The system should provide periodic feedback until such time as performance has reached an acceptable level. Special provisions should be included for critical failures; i.e., failures in which loss of the function or secondary effects of the failure impair the airworthiness of the aircraft.

3.6 Statistical performance standards system

A performance measurement expressed numerically in terms of system or component failures, pilot reports, delays or some other event (bracketed by hours of aircraft operation, number of landings, operating cycles, or other exposure measurement) serves as the basis for the standard.

3.7 Data display and report system

Programmes incorporating statistical performance standards (alert type programmes) should develop a monthly report, with appropriate data displays, summarizing the previous month's activity. The report should cover all aircraft systems controlled by the programme in sufficient depth to enable the Authority and other recipients of the report to evaluate the effectiveness of the total maintenance programme. It should highlight systems which have exceeded the established performance standards and discuss what action has been taken or planned. The report should explain changes which have been made or are planned in the aircraft maintenance programme, including changes in maintenance and inspection intervals and changes from one maintenance process to another. It should discuss continuing over-alert conditions carried forward from previous reports and should report the progress of corrective action programmes.

3.8 Maintenance interval adjustments

Maintenance interval adjustments should not interfere with an ongoing corrective action. Special procedures for escalating systems or components whose current performance exceeds control limits should be provided.

3.9 Programme revision system

The programme should include a procedure for revision which is compatible with the Authority approvals. The programme areas requiring formal Authority approval include any changes to the programme that involve-

a) Any of the program control systems in 3.2 above.

b) Adding or deleting components/systems.

c) Adding or deleting aircraft types.

d) All procedural and organizational changes concerning administration of the programme.

3.10 Program Administration

3.10.1 Administration of reliability programmes (as discussed in this circular) requires a specific organizational structure within the operator's maintenance organization. Participants of the reliability programme andministration team should be drawn from appropriate elements of the organization and should be authorized to act on behalf of their elements. In any case however, the Manager Quality should be responsible for the management of all the approved activities of the reliability programme.

3.10.2 The reliability programme administration team may vary from one operator to another. It may have a technical board that analyses performance deteriorations and shop findings to make determinations that may be acted on by an administrative board. The two boards can be combined if this better serves the needs of the particular operator. The board type of administration should entail meetings scheduled for some specified interval and should provide for assembling a board at any time a decision is needed.

3.10.3 In the absence of a formal administration team , operators with sufficient organizational capability may designate or assign appropriate responsibilities to specific element of the operator's organization.

3.10.4 It is important to know that the effective management of the established procedures of operating each system is essential to the success of the programme. These procedures should be incorporated in appropriate sections of the operator's manual system. Forms should be used, as necessary, to facilitate and document recurring transactions that involve several elements.

3.11 Reliability Programme Document

3.11.1 The operator should develop a document describing the application of reliability control methods this document should include at least the following:

a) General description of the programme;

b) Organizational structure, duties and responsibilities;

c) Description of the individual systems;

d) Derivation of performance standards (if used);

e) Changes to the programme including designation of changes requiring Authority approval;

f) Copy and explanation of all forms peculiar to the system; and

g) Revision control and certification of revisions to the document.

3.11.2 The document should describe the workings of all systems in sufficient detail to provide for proper operation of the programme. It should include in detail how the three maintenance processes are applied. The document should describe the monthly report and any other reports relative to the programme, and include samples of these reports with instructions for their use. The organisational element(s) responsible for publishing reports should be identified and the distribution should be stated. Copies of pertinent reports should be provided to the Authority.

3.11.3 The document should also include definitions of significant terms used in the programme with particular emphasis on definitions of the three maintenance processes.

4.0 PROGRAMME APPROVAL

4.1 Initial Approval

4.1.1 The programme document and related data should be submitted to the Authority in the form and manner prescribed. Guidance on the submission will be provided at the Pre-Application Meeting.
4.1.2 Approval will be certified with the organisation maintenance programme document and specified in the Operations Specifications.

4.2 Revision Approval

Amendments to the Reliability Progamme shall be subjected to a review, evaluation and approval process before incorporation. It is important to take in consideration the impact of the proposed amendments on the overall organisation manual system.

121.10.9 REDUCED VERTICAL SEPARATION MINIMA (RVSM)

1. Maintenance Requirements

Aircraft and operators must be authorized by the Authority to conduct operations in RVSM airspace. The criteria and evaluated to issue this authorization consist of three basic elements as follows:

(a) An aircraft compliance with the requirements of ICAO) Doc. 9574;

(b) The operator's maintenance programme compliance with the requirements of ICAO Doc. 9574.

(c) Operator RVSM procedures in place

2. Responsibilities

(i) The evaluation of RVSM operation application is coordinated between airworthiness and flight operations operations Inspectors

(ii) The operator submits the RVSM application, aircraft eligibility documents, evidence of capability and RVSM maintenance programme for maintaining each aircraft or aircraft groups for approval.

3. Aircraft Compliance

3.1 The aircraft shall complies with the RVSM requirements (make reference to ICAO Doc. 9574). Ensure all relevant Service Bulletins (SB), Service Letters (SL), or Supplemental Type Certificates (STC), which apply to the specific aircraft type or group as applicable have been complied with.

3.2 Aircraft compliance review:

(a) **In-Service Aircraft**. Ensures that the inspections and/or modifications required for aircraft compliance have been performed and documented;

(b) **Equipment**. Verify that the aircraft has the required equipment in accordance with MOZ-CARs and ICAO Doc.9574.

(c) **In-Production or New Production Aircraft**. Ensures that RVSM compliance is stated in the aircraft flight manual (AFM) or aircraft Type Certificate Data Sheet (TCDS).

3.3 The RVSM compliant aircraft equipment must include at least the following:

(i) Two independent altitude measurement systems. Each system should

include:

a) Cross-coupled static source/system, with ice protection if located in areas subject to ice accretion.

b) Equipment for measuring static pressure sensed by static source, conveying it to pressure altitude and displaying the pressure altitude to the flight crew.

c) Equipment for providing a digitally encoded signal corresponding to the displayed pressure altitude, for automatic altitude reporting purposes.

d) Static source error correction (SSES).

e) Signals referenced to a pilot selected altitude for automatic control and alerting.

(ii) One secondary surveillance radar transponder with an altitude reporting System that can be connected to to the altitude measurement system in use for altitude keeping.

(iii) An altitude alerting system.

(iv) An automatic altitude control system.

3.4 RVSM Maintenance Programme

3.4.1 The RVSM maintenance programme. must outline procedures to maintain aircraft in accordance with the requirements. (Ref ICAO Doc. 9574). The approved RVSM maintenance programme may be a stand alone or part of the standard aircraft maintenance programme.

3.4.2 RVSM maintenance programme elements are specific to the operator and aircraft for which they are approved and are not transferable.

3.4.3) Each RVSM maintenance programme must include the following:

(a) Identification of components considered to be RVSM critical, and identification of structural areas noted as RVSM critical areas;

(b) The name or title of the responsible person who will ensure that the aircraft is maintained in accordance with the approved programme;

(c) The method the operator will use to ensure that all personnel performing maintenance on the RVSM system are properly trained, qualified, and knowledgeable of that specific system;

(d) The method the operator will use to notify the crew if the aircraft has been restricted from RVSM but is airworthy for an intended flight;

(e) The method the operator will use to ensure conformance to the RVSM maintenance standards, including the use of calibrated and appropriate test equipment and a quality assurance programme for ensuring continuing accuracy and reliability of test equipment, especially when outsourced;

(f) The method the operator will use to verify that components and parts are eligible for installation in the RVSM system, as well as to prevent ineligible components or parts from being installed;

(g) The method the operator will use to return an aircraft to service after maintenance has been performed on an RVSM component/system or after the aircraft was determined to be non-compliant;

(h) Periodic inspections, functional flight tests, and maintenance and inspection procedures with acceptable maintenance practices for ensuring continued compliance with the RVSM aircraft requirements;

***Note 1**: These elements may be listed in detail or described by reference to an acceptable programme that is identified and controlled by revision or issue number*

Note 2: The need for functional flight tests may be limited to only after repairs or modifications that are deemed to warrant such testing and may be accomplished through monitoring height-keeping performance

(i) The maintenance requirements listed in Instructions for Continued Airworthiness (ICA) associated with any RVSM associated component or modification;

(j) Any other maintenance requirement that needs to be incorporated to ensure continued compliance with RVSM requirements.

ANNEX A PILOT-IN-COMMAND'S DISCRETION REPORT

SECTION 1: EXTENSION OF FLIGHT DUTY PERIOD

Part A: Operator

Aircraft type
Flight number
Pilot-in-command
Date

Note: If discretion exercised for part crew or individual state name(s) and operating capacity below.

Part B: Flight details

1. Crew acclimatised to time zone YES / NO *
2. Length of preceding rest eighteen to thirty hrs/under eighteen or over thirty hours *
3. Split duty: actual time off ..... time on .....
4. Extended FDP for in-flight relief YES / NO *

**Delete inapplicable items*

FLIGHT DETAILS							
Schedule (planned)				**Actual**			
	Place	**UTC**	**Local**			**UTC**	**Local**
Duty Started				**Duty Started**			
Depart				Departed			
Arrive				Arrived			
Depart				Departed			
Arrive				Arrived			
Depart				Departed			
Arrive				Arrived			
Depart				Departed			
Arrive				Arrived			
FDP to end				FDP ended			
Scheduled FDP				Actual FDP			
Maximum Authorized FDP Total Hours:				Form:		To	

Part C: Pilot-in-command's report giving reasons

Signed : .....
Date : .....
Operator's remarks / Action taken
Signed : .....
Date : .....
Forwarded to CAA
Date : .....

SECTION 2: REDUCTION OF REST

Note: All times to be recorded as date/time six-figure groups, expressed in both UTC and Local Time.

Part A: Operator
Aircraft type
Flight number
Pilot-in-command
Date

Note: If discretion exercised for part crew or individual state name(s) and operating capacity below.

Part B: Last duty started.....UTC/Local
Last duty ended.....UTC/Local
Rest earned.....Hours
Calculated earliest next available.....UTC/Local
Actual start of next FDP.....UTC/Local
Rest period reduced by crew affected.....UTC/Local

Part C: Pilot-in-command's report
Signed : .....
Date : .....
Operator's remarks / Action taken
Signed : .....
Date : .....
Forwarded to IACM
Filed

121.11.1 LANGUAGE PROFICIENCY REQUIREMENTS

(1) To meet the language proficiency requirements contained in regulation 11, an applicant for a licence or a licence holder shall demonstrate, in a manner acceptable to the Authority, compliance with the holistic descriptors at paragraph (2) and with the Operational Level (Level 4) of the Language Proficiency Rating Scale in paragraph (3).

(2) Holistic descriptors - proficient speakers shall:
- (a) communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations;
- (b) communicate on common, concrete and work-related topics with accuracy and clarity;
- (c) use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings (e.g. to check, confirm, or clarify information) in a general or work-related context;
- (d) handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
- (e) use a dialect or accent which is intelligible to the aeronautical community.

(3) Rating scales:
- (a) Operational Level (Level 4):
  - (i) Pronunciation: Pronunciation, stress, rhythm and intonation are influenced by the first language or regional variation but only sometimes interfere with understanding.
  - (ii) Structure: Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.
  - (iii) Vocabulary: Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.
  - (iv) Fluency: Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.
  - (v) Comprehension: Comprehension is mostly accurate on common, concrete, and work related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.

(vi) Interactions: Responses are usually immediate, appropriate and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming or clarifying.

(b) Extended Level (Level 5)

(i) Pronunciation: Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.

(ii) Structure: Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.

(iii) Vocabulary: Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.

(iv) Fluency: Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.

(v) Comprehension: Comprehension is accurate on common, concrete, and work related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.

(iv) Interactions: Responses are immediate, appropriate, and informative. Managers the speaker/listener relationship effectively.

(c) Expert Level (Level 6)

(i) Pronunciation: Pronunciation, stress, rhythm, and intonation, thought possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.

(ii) Structure: Both basic and complex grammatical structures and sentence patterns are consistently well controlled.

(iii) Vocabulary: Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.

(iv) Fluency: Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.

(v) Comprehension: Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.

(vi) Interactions: Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.

ANNEX B AIR OPERATOR CERTIFICATE

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

ANNEX C APPLICATION FORMS FOR AIR OPERATOR CERTIFICATE

1. **STATEMENT OF INTENT;**
2. **AERODROMES;**
3. **AIRCRAFT;**
4. **PERSONNEL;**
5. **MAINTENANCE;**
6. **CHIEF PILOT**
7. **PASSENGER CARRYING AUTHORITY CABIN SAFETY**

INSTITUTO DA AVIAÇÃO CIVIL DE MOÇAMBIQUE

Statement of Intent

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

PART ONE: TO BE COMPLETED BY APPLICANT

Legal name and Trade Name, address and Postal Code of applicant

Principle Base of Business

Telephone Number/s	Facsimile Number/s	e-mail address	ATLE License type and number	

I understand that the above named company must meet all Air Transport Legal and Economic (ATLE) Licensing Requirements with respect to all matters regulating the issue of an ATLE license. I further understand that the above named company shall not commence operation until it is possession of an ATLE License.

Name and Title of company Executive

Signature to certify understanding

Proposed Start of Operations Date

YYYY	MM	DD

PROPOSED TYPE OF SERVICE

( ) Domestic ( ) Scheduled - ( ) Non-Scheduled ( ) International ( ) Scheduled - ( ) Non-Scheduled	( ) Aviation Training Organization as selected from the pick list on the reverse side	( ) Aerial Work. as selected from the pick list on the reverse side

AREA OF OPERATION (Aerodrome location identifier and name or (Lat.& Long. Coordinates)

Base(s)

Aircraft Types

Name of approved maintenance organization (if available)

Approval No

OPERATING CONDITIONS (Check where applicable)

Authorization	Operating conditions							
	Day	Night	VFR	IFR	Passengers and Cargo	Passengers only	Cargo only	
Multi-engine aircraft								
Rotorcraft								
Single-engine aircraft								

COMPANY EXECUTIVE OR AUTHORIZED PERSON

Name

I certify that all the statements herein are true and complete to the best of my knowledge

(YY MM DD -) Signature (of person duly authorized to execute this application on behalf of the applicant) Title

PART TWO: TO BE COMPLETED BY THE IACM

Names of Principal Inspectors

Operations Airworthiness Licensing

Approving Signatures

Director of Flight Safety Director General IACM

See reverse for instructions and pick lists

NOTICE
IACM will not undertake a quality assurance role with regard to any form or document submitted in application for a service. Documentation that contains errors or does not meet regulatory requirements will be returned for correction.

Delays thus incurred are the sole responsibility of the applicant.

Applicants are encouraged to review MCAR 121.06.2 and 135.06.2 as applicable

	Types of Aerial Work Specialty Operations		Types of Aviation Training Organization Operations
1	Aerial Advertising	18	Flight Training
2	Aerial Construction	19	Maintenance Training
3	Aerial Inspection and Surveillance	20	Ground Service Training
4	Aerial Harvesting	21	Aviation Medicine Training
5	Aerial Mapping	22	Security Training
6	Aerial Photography	23	Dangerous Goods Training
7	Aerial Sightseeing	24	Cabin Crew Training
8	Aerial Spraying	25	Dispatcher Training
9	Aerial Surveying		Others
10	External Load Charge		
11	Fire Fighting		
12	Recreational Flying		
13	Forest Fire Management		
14	Glider Tower		
15	Heli-logging		
16	Parachute Jumping		
17	Wild Life Management		

INSTITUTO DA AVIAÇÃO CIVIL DE MOÇAMBIQUE

Aerodrome

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

1. Name of Air Operator -			Address									
2. (a) Aerodrome			(Name and Geographic Coordinates)									Identifier/
Aerodrome certified	Yes	No	Aerodrome status and suitability	Public	Private	Day	Night	VFR	IFR	Land	Water	Heliport
Cert. No.	Dated											
(b) Name of aerodrome operator			Telephone No.				Fax/E-Mail					
(c) Air operator telephone, radio or other means of communications							(d) Air traffic control ☐ Yes ☐ No					
(e) Navigational and landing aids NDB VOR PAR ASR GPS MLS ILS OTHER							Hrs of operation To					
(f) AERODROME EMERGENCY												
(g) Uncertified aerodrome, not in AIP, give runway details (with LAT. & LONG.)												
3. Facilities available at this airport/aerodrome (a) Communications			(b) Meteorological 1) Forecast - ☐ Yes ☐ No 2) Weather Report - ☐ Yes ☐ No				(c) Weather report contains all essential information normally found in AIP weather sequence (_____) Yes (_____) No					
(d) First Aid -			(e) Passenger accommodation -				(f) Hangar					
(g) Refuelling facilities			(h) Available surface transportation -									
4. Base ☐ Main ☐ Sub-			Scheduled Points - ☐ Aerodrome ☐ Base				Type of operation - Type ☐ Day ☐ Night ☐ VFR ☐ IFR					
5 (a) Aircraft types -			(b) Aircraft of 5700 KG. (MCTOW) and over Specify max allowable weight.				(c) Pavement evaluation required ☐ Yes ☐ No					

6. I hereby certify that the above information is correct

Date YY MM DD _____ Signature by a duly authorized person to sign on behalf of the Air Operator _____ Title _____

7. Aerodrome Safety comments

I hereby certify that the information specified herein is correct as listed in section 2

Date YY MM DD _____ Aerodrome Safety and Security _____

8. I hereby certify that the facilities listed in section 3 are satisfactory for the type(s) of aircraft and operation listed in sections 4 and 5.

Date YY MM DD _____ IACM POI _____

INSTRUCTIONS

NOTICE
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Delays thus incurred are the sole responsibility of the applicant.

Applicants are encouraged to review MCAR 121.06.2 and 135.06.2 as applicable

General

This form should be printed or typed and signed by a company's designated official, i.e. Operations Manager or have the company seal affixed.

Sections

1. The full name and full address of the air operator including the postal code.

2. (a) The location of the aerodrome and with the co-ordinates and identifiers for remote aerodrome, registration or certificate numbers public/private etc.;

(b) The name and telephone number of the aerodrome or airport operator;
(c)(d)(e) Name of the air operator, phone no., aids and facilities available at the aerodrome. Check appropriate box.

(f) Detail what fire fighting and rescue equipment is available and if this information is published check for accuracy

g) If the aerodrome is uncertified attach a note giving some details i.e. runway dimension, type of surface, etc., (75' x 3500') gravel) with latitude and longitude

.3. The information required in paragraphs (a) to (g) as the details are self explanatory.

4. If the Scheduled points are from a base, an aerodrome the type of operations at an uncertified aerodrome. An aerodrome may be used as a Scheduled point provided it is approved by the Director.

5. (a) List the types of aircraft that the air operator wishes to operate into the aerodrome, i.e. PA-31, C-185, DHC-2, etc.;
(b) List the air operator's aircraft with a (MCT0W) of 12500 lbs and over;
(c) If a pavement evaluation is required.

See reverse side for assistance

INSTITUTO DA AVIAÇÃO CIVIL DE MOÇAMBIQUE

Aircraft

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

1. Name of Air Operator									
2. Address									
3. Aircraft Type	Marks	Serial No.	Certificate of Airworthiness Date (Y-A - M - D-J)						
4. Engine Type		☐ Turbine ☐ Piston	Number of Engines						
5. (a) Maximum certificated take-off weight		(c) ☐ Wheels ☐ Skis ☐ Float ☐ Amphibious							
6. (b) Maximum number of passengers		(d) FDR ☐ Yes ☐ No No. of parameters		CVR ~	Yes	No			
7. Aircraft flight manual approved									
8. Flight Instruments in accordance with: ,	**IFR**	MCAR Part 91.04.5							
	VFR OTT	MCAR-Part 91.0404							
	VFR Night	MCAR Part 91.04.3							
9. Autopilot Yes No	Type	Number of axis ,							

10. Radio Equipment	Communication	Navigation and Approach Aids	Other
	☐ VHF ☐ UHF ☐ HF ☐	☐ ILS ☐ VOR ☐ DME ☐ ADF ☐ CAT II ☐ RVSM ☐ INS ☐ GPS ☐ TRX.....☐ CAT III	☐ ELT (type)_____ ☐ _____ ☐ _____ ☐ _____

11. Safety feature cards complies as and where applicable, with		Yes	No	A/A		Yes	No	N/A		Yes	No	N/A		Yes	No	N/A
	MCAR Part 91.07.20				MCAR 121.07.29-30 & /MOZ-CZTS-OPS 121				MCAR135.07.33&34 & MOZ-CATS-OPS 135				MCAR 127.07.32&33 & MOZ-CATSOPS 127			

12. Oxygen equipment complies as applicable with:	MCARS 91.04.17 – 18 – 19 – 20 & 21	Yes	No	N/A
13.Life saving equipment complies with	MCAR/91.04.27	Yes	No	N/A
14. Survival equipment complies with	MCAR 91.04.29 (as applicable)	Yes	No	N/A
15. First aid kit complies with	MCAR 91.04.16	Yes	No	N/A

16. Applicable maintenance schedule

17. I certify that the above data is correct

Date (Y-A - M - D-J) | Signature (of person duly authorized to execute this application on behalf of the air operator) | Title

IACM USE

The maintenance schedule is acceptable for the aircraft indicated.
Recommended for Approval

Date (YY MM DD) | Aircraft Maintenance and Manufacturing

I certify that the aircraft and equipment are adequate for the operations covered by this application. Recommended for Approval

Date (YY- MM- DD) | Flight Operations

See reverse for instructions

INSTRUCTIONS

NOTICE
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Delays thus Incurred are the sole responsibility of the applicant.

Applicants are encouraged to review MCAR 121.06.2 and 135.06.2 as applicable

General
This form should be printed or typed and signed by a company's designated official, i.e. Operations Manager or have the company seal affixed

Sections

1. The full name of the air operator.

2. The full address of the air operator including the postal code,

3. Aircraft Type
DHC2, B55, etc. Registration Marks – C9-XXX, etc. Certificate of Airworthiness, date of issue.

4. Engine Type. Check - Turbine or Piston and indicate the number of engines.

5. Maximum certificated take-off weight.

(a) Shall be authorized by aircraft type approval.

(b) Based on seats available excluding the pilots and as per aircraft type approval. Passenger/Cargo or Cargo Only.

(c) Check one or more.

(d) Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) as required by MCARS Part 91.

6. The aircraft flight manual shall be in the possession of the air operator and, where applicable, a Minimum Equipment List (MEL) in accordance with MCARS. This manual may still be under development.

Indicate (Yes) or (No) if the flight instruments meet the MCARS requirements for IFR, VFR, OTT or VFR Night. Note: Night VFR and VFR OTT is still under review.

If yes, give type of auto pilot and number of axis. NOTE: Functioning auto pilot required for single pilot IFR operations as per .

9. Radio Equipment, Navigation, Communication. List number and types installed in aircraft I Narco MK 12 VHF Nav/Com; 1 King 175 VHF Nav/Com. .The ELT type as per column III, Table, MCAR 135.02.5

10. Visible placards of information conforms to MCARS or the Safety Feature Cards information conforms to MCAR

11. As applicable indicate which of the following CARS that the oxygen equipment applies – MCARS 91.04.17,18,19,&20.

12. Confirm that the Life-Saving equipment conforms to MCAR 91.04.27 and that the Survival equipment conforms to MCAR 91.04.29 (as applicable).

13. Confirm that the First Aid Kit complies with the following MCAR 91.04.16 or 705.90.

14. Indicate the maintenance schedule which will be used for the aircraft described.

15. The form must be signed by a person duly authorized to execute the application on behalf of the air operator.

INSTITUTO DA AVIAÇÃO CIVIL DE MOÇAMBIQUE

Personnel

File Number
19001/AO -GEN
19001/A0 -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

1. Name of Air Operator t

Address

2. SUPERVISORY PERSONNEL – Attach qualification, licences, certificates, endorsements resume giving position title, name, and experience for:

(a) **Operations manager**		(b) **Chief Pilot**	
Name-Nom	Licence No.	Name	Licence No.
(c) **Person responsible for Maintenance control system**		(d) **Company Aviation Safety Officer**	
Name-Nom	Licence No.	Name	Licence No.
(e) **Flight Dispatcher**		(e) **Manager of Cabin Safety**	
Name-Nom	Licence No.		

3. OPERATING PERSONNEL (Trained and Qualified in Accordance with the Applicable Part of the MCAR)

Number of:				
Pilot-in-command	Second-in-command/First Officers	Airworthiness Maintenance Engineers	Flight/Cabin Attendant	Flight Dispatcher

4.I hereby certify that the qualifications of the foregoing personnel meet the requirements and/or the applicable CAR for operating the proposed Service

Date (Y-A-M-D-J)	Signature (of person duly authorized to execute this application on behalf of the air operator)	Title

FOR IACM USE ONLY

I certify the person responsible for the maintenance control system has been briefed/tested and is qualified to serve as nominated and the listed AMEs' records confirm they meet the requirements to perform their assigned tasks .

Date YY MM DD — Signature Principal Airworthiness Inspector

The Operational Supervisory personnel have been briefed/tested and are qualified for their respective positions. The records of the personnel listed are qualified to perform their assigned tasks

Date YY MM DD — Signature Principal Flight Operations Inspector

I certify the person responsible for the maintenance control system meets the requirements of MCAR Part _____ and has the experience, knowledge and background to serve in the position requested.

Date YY MM DD — Signature Manager of Airworthiness

I certify the above flight operations supervisory personnel meet the Requirements of MACR Part _____ and have the experience, knowledge and background to serve in the positions requested.

Date YY MM DD — Signature Manager of Flight Operations

Based upon the above certifications I am satisfied that the applicant has met the personnel requirements for the issueance of an Air Operator Certificate and recommend appropriate authorities be issued.

Date YY MM DD — Signature Director of Flight Safety

This is to confirm that appropriate authorizations may be issued to the supervisory personnel

Date YY MM DD — Signature Director General

See reverse for instructions

INSTRUCTIONS

Notice
IACM will not undertake a quality assurance role with regard to any form or document submitted in support of an application service. Documentation that contains errors or does not meet regulatory requirements will be returned for correction.

Delays thus incurred are the sole responsibility of the applicant.

Applicants are encouraged to review MCAR 121.06.2 and 135.06.2 as applicable

General
This form should be printed or typed and signed by a company's designated official, i.e. Operations Manager or have the company seal affixed.

Sections

1. The full name and full address of the air operator applicant
2. **Supervisory Personnel**

(a) Give the full name and, where applicable, the licence number of the operations manager and ensure the name agrees with the company organization chart. Complete and attach his resume of experience and qualifications which must comply with the appropriate Part of the MCAR for IACM approval.

(b) Give the full name and licence number of the chief pilot and ensure the name agrees with compan organization chart. Complete and attach his resume of experience and qualifications which must comply with the appropriate Part of the MCAR for IACM approval.

(c) Give the full name of the person responsible of the maintenance control system and ensure the name agrees with company organization chart. Complete and attach his resume of experience and qualifications which must comply comply with the appropriate Part of the MCAR for IACM approval.

(d) Give the full name and licence number of the Person Responsible for Maintence (referr to him/her by the title given to the position by the company. IE “Director of Maintenance” ensure the name agrees with company organization chart. Complete and attach his resume of experience and qualifications which must comply with the appropriate subpart VII of the CAR for TC's approval.

(e) Give the full name and certificate number of the Head Flight Dispatcher and ensure the name agrees with company organization chart. Complete and attach his resume of experience and qualifications which must comply with the appropriate Part of the MCAR for IACM approval.

(f) Indicate the number of pilots-in-command, seconds-in command, flight attendants, flight dispatchers and AMEs who have been hired by the company and trained in accordance with the relevant training programs

(g) The form must be signed by the person duly authorized to execute the application on behalf of the air operator.

INSTITUTO DA AVIAÇÃO CIVIL DE MOÇAMBIQUE

Maintenance

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

1. Name of Air Operator	
Address	Telephone No.
2. Make and Model of Aircraft Operated	Number of Aircraft Operated

3. Location of Main Maintenance Base	Maintenance Sub-Bases (as applicable)
4. Air operator's maintenance control manual	Latest Amendment Number

_____ Date Submitted - YYYY-MM-DD -	_____ Date Approved YYYY-MM-DD	_____ Date Submitted YYYY-MM-DD	_____ Date Approved YYYY-MM-DD

5. (a) ☐ Air operator AMO	Approval No. / Categories/ Ratings
(b) ☐ Maintenance contracted with an AMO — Name and address	Approval No. / Categories / Ratings
(1)	
(2)	
(3)	

6. All the statements contained herein are true and complete to the best of my knowledge in accordance with the requirements of

_____ Date YYY-MM-DD	_____ Signature person duly authorized to execute this application on behalf of the air operator	_____ Title

FOR IACM USE ONLY

7. The maintenance arrangements mentioned in section 5 are satisfactory for the aircraft types operated.

Signature…… …Date
Aircraft Maintenance YYYY-MM-DD

See reverse for instructions

NOTICE
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Delays thus incurred are the sole responsibility of the applicant.

Applicants are encouraged to review MCAR 121.06.2 and 135.06.2 as applicable

INSTITUTO DA AVIAÇÃO CIVIL DE MOÇAMBIQUE

Chief Pilot

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

Name of Air Operator	Headquarters File Number	Regional File Number
Name of Nominee		Licence Number

Hours Flown

Pilot-in-Command Multi-Engine	Pilot-in-Command Single Engine	Grand Total Flying Time

Aviation Background (Companies, Duties and Aeroplane Types)	**Dates**					
	From			**To**		
Supervisory Experience	**From**			**To**		

Suitability for Duties as Laid Out in Company Operations Manual

I certify that to the best of my knowledge the information provided above is true

Signature of Nominee	Date
Signature and Title of Company Executive	Date

IACM Use Only

1. Recommendation of FOI (If Required) Examination ( ) Yes ( ) No ( ) Not Required

Signature of FOI Date YY MM DD

2. Manager Flight Operations Recommendation/Action

Signature of Regional Manager or Director Date YY MM DD

3. Director of Flight Safety Approving conditions or limitations		
_____	_____	
	Signature Date	YY MM DD

Passenger Carrying Authority
CABIN SAFETY

File Number
19001/AO -GEN
19001/AO -CER

Telephone number: **258 21465416** *Fax Number:* **258 21465415**
Physical address: Alameda do Aeroporto, Maputo
Postal address: Caixa Postal 227, Maputo E-mail iacm@tvcabo.co.za

Name of Air Operator	Base
Address and Telephone No.	

ALL OPERATIONS

Safety Features Cards for these Aircraft Types:			not applicable
Passenger and Cabin Safety Procedures			not applicable
Briefing of Passengers **APPLICANT'S USE**	Documents Submitted		not - applicable
Aircraft Inspection	Date (Y/A-M-D/J)		not - applicable

OPERATIONS WITH FLIGHT ATTENDANTS

Flight Attendant Manager Qualifications				not applicable	
Flight Attendant Training Program - (See note on back)	initial	Annual		not applicable	
Flight Attendant Training Syllabus (See note on back)				not applicable	
Line Indoctrination Training				not applicable	
Record Keeping System for Training and Qualifications					not - applicable
Instructor Qualifications					not applicable
Training Facilities	-				not - applicable
Cabin Emergency Evacuation Trainer				not applicable	
Flight Attendant Manual - (See Note on back)				not applicable	
Flight Attendant Stations				not applicable	
Minimum Number of Flight Attendants per Aircraft Type				not applicable	
Carry-on Baggage Control Program				not applicable	

I understand that the above information is correct

Date (Y/A-M-D/J) Signature (of person duly authorized to execute this application on behalf of the air operator) Title

FOR IACM USE ONLY

This confirms that all the Cabin Safety requirements have been met.

Date (Y/A M D/J) Cabin Safety Inspector

Date (Y/A-M-D/J) Director of Flight Safety

See instruction on the reverse side

NOTICE
IACM will not undertake a quality assurance role with regard to any form or document submitted in application for a service. Documentation that contains errors or does not meet regulatory requirements will be returned for correction.

Delays thus incurred are the sole responsibility of the applicant.

1. This form is used for the initial issue and / or amendment of an air operator certificate (AOC) and the addition of a new aircraft type to the air operator certificate.

2. Coordination is required with the Cabin Safety Division whenever there are requirements to amend or issue an AOC or an operation specification pertaining to Cabin Safety.

3. The shaded areas are for IACM use only. The applicant completes the white area of the form.

4. At the top right-hand of the form, the inspector enters the file numbers, whether this form is for initial issuance of an AOC or an amendment to an existing AOC and the date that the form was received from the applicant.

5. The applicant enters the name, address, and base of the air operator.

6. The applicant enters the aircraft type(s) and the date on which the safety features' cards were submitted.

7. For each line entry, the applicant enters the date submitted and a reference(R) to where the information relative to the item is located (i.e., Flight Operations Manual, Chapter 4, pages 3-6; Flight Attendant Manual, Chapter 3 section 3.8; Agent's Handbook sections 5.6 - 6.7) or attaches a copy of the item with the form.

8. For each line entry, the inspector enters the date on which the information was evaluated and determined to either meet the standards or was approved.

9. The applicant signs the form attesting to the correctness of the information.

10. The Cabin Safety Inspector signs the form confirming that all cabin safety requirements have been met before the applicable IACM division signs off.

11. Flight attendant training may not commence until the **Flight Attendant Training Program** has received written
conditional approval and the **Flight Attendant Manual** has received written approval.

12. **Annual Flight Attendant Training Syllabus and Program** do not require approval during the Initial Certification
process. The documents must be submitted for review and approval no later than 90 days before Annual training is due.

13. For operations with flight attendants and depending on the complexity of the operation or the documents:

(a) the certification process for an **initial** air operator certificate can take between 60 to 90 days to complete from the date the documents are received;

(b) the certification process to **amend** an air operator certificate can take between 30 to 60 days to complete from the date the documents are received.