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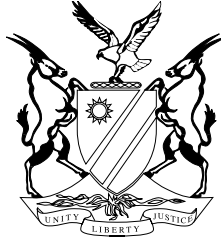
MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION

No. 55

2004

NAMIBIAN CIVIL AVIATION TECHNICAL STANDARDS NAM-CATS-OPS 127 "AIR TRANSPORT OPERATIONS - HELICOPTERS"

The Director: Civil Aviation has under regulation 11.035 of the Namibian Civil Aviation Regulations, 2001 and in consultation with the Civil Aviation Regulations Committee issued the technical standards in the schedule. These technical standards shall come into operation on 1 April 2004.



REPUBLIC OF NAMIBIA

CIVIL AVIATION

**DOCUMENT NAM-CATS-OPS 127
(AIR TRANSPORT OPERATIONS: HELICOPTERS)**

NAMIBIAN CIVIL AVIATION TECHNICAL STANDARDS RELATING TO AIR TRANSPORT OPERATIONS : HELICOPTERS

1. GENERAL

Section 22A of the Aviation Act, 1962 (as amended by section 5 of the Aviation Amendment Act, 1998) empowers the Director: Civil Aviation to issue technical standards for civil aviation on the matters which are prescribed by regulation.

The Director: Civil Aviation has pursuant to the empowerment mentioned above, on 1 April 2004 issued technical standards relating to operations of helicopters to be known as Document NAM-CATS-OPS 127.

2. PURPOSE

Document NAM-CATS-OPS 127 contains the standards, rules, requirements, methods, specifications, characteristics and procedures which are applicable in respect of air transport operations : helicopters.

Each reference to a technical standard in this document, is a reference to the corresponding regulation in the Namibian Civil Aviation Regulations, 2001, for example, technical standard 127.03.1 refers to regulation 1 of Subpart 03 of Part 127 of the Regulations.

The abbreviation "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.

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127.01.5 INFORMATION ON EMERGENCY AND SURVIVAL EQUIPMENT CARRIED**1. Emergency and survival list**

The 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.

127.01.9 ELECTRONIC DEVICES**1. Operation of electronic devices on board a helicopter during flight time**

- (a) Electronic devices which are not intentional transmitters of radio signals, may, with the prior permission of the pilot-in-command, be operated on board a helicopter, but only in the cruise phase of flight.

Examples of such devices are -

- (1) laptop computers;
- (2) video cameras;
- (3) tape recorders;
- (4) electronic entertainment devices; and
- (5) hand held calculators.

- (b) Cellular or Mobile Telephones shall not be operated on board a helicopter once the engines been started and shall remain switched off until the doors of the helicopter are opened at the end of the flight.

127.01.15 SUBCHARTERING

1. Subchartering

An operator may subcharter a helicopter or crew, or both a helicopter and crew in circumstances where such operator is faced with an immediate, urgent and unforeseen need for a replacement helicopter and/or crew.

127.02.3 CREW MEMBER EMERGENCY DUTIES

1. Emergency evacuation demonstration

An emergency evacuation demonstration must be performed by the 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 helicopter 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.

127.02.6 DUTIES OF PILOT-IN-COMMAND REGARDING FLIGHT PREPARATION

1. Category II approach

A Category II approach is an ILS approach procedure which provides for an approach to a decision height lower than 200 feet but not lower than 100 feet and a RVR of not less than 350 m.

2. Category III approach

A Category III approach is divided into a -

- (1) Category III A approach, which is an ILS approach procedure which provides for an approach with either a decision height lower than 100 feet or with no decision height and with a RVR of not less than 200 m;
- (2) Category III B approach, which is an ILS approach procedure which provides for an approach with either a decision height lower than 50 feet or with no decision height and with a RVR of less than 200 m but not less than 50 m; and
- (3) Category III C approach which is an ILS approach procedure which provides for an approach with no decision height and no RVR limitations.

3. Adequate and suitable aerodromes

For the purposes of CAR 127.02.6(1)(s) -

- (1) An adequate aerodrome is an aerodrome licensed or approved or an aerodrome in an urban area approved in terms of Part 139 or is found to be equivalent to the safety requirements prescribed in Part 139; and
- (2) a suitable aerodrome is an adequate aerodrome with weather reports, or forecasts or any combination thereof, indicating that the weather conditions are at or above operating minima, as specified in the operation specifications, the field condition reports indicate that a safe landing can be accomplished at the time of the intended operation and the facilities necessary to complete an approach at such aerodrome is operational.

127.02.9 CABIN CREW COMPLEMENT

1. Minimum number of cabin crew

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 helicopter: 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 CAR 127.02.3 or were assumed to have taken part in the relevant analysis required during the certification of the helicopter.

127.02.10 OPERATION ON MORE THAN ONE TYPE OR VARIANT BY CABIN CREW MEMBER

1. Type or variant of helicopter

- (1) With the approval of the Director, cabin crew may operate on four helicopter types if emergency exits and safety equipment are similar.
- (2) When assessing if a fourth helicopter 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 helicopter 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.
- (4) Helicopter variants not meeting these criteria are considered to be a separate helicopter type.

127.02.14 FLIGHT TIME AND DUTY SCHEME

1. Definitions

Any word or expression to which a meaning has been assigned in the Aviation Act, 1962, and the Namibian Civil Aviation Regulations, 2001, bears, when used in this technical standard, the same meaning unless the context indicates otherwise, and -

“days off” means periods available for leisure and relaxation, no part of which forms part of a duty period. A single day off includes 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 helicopter, 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 a helicopter 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, or rotors stopped, 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;

“Late Finish/Early Start” means any duty that is carried out within any part of the period 0100 to 0659 hours local time;

“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 a period before starting a flight duty period which is intended to ensure that a flight crew member is adequately rested before a flight;

“sector” means the time between a helicopter first moving under its own power until it next comes to rest after landing, on the designated parking position;

“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;

“suitable accommodation” means a well-furnished bedroom which is subject to minimum noise, is well ventilated, and has a facility to control the levels of light and temperature;

“standby duty” means a period of time during which a flight crew member is in a position to commence a flight duty at once;

“travelling” means all the time spent by a crew member transiting between the place of rest, and the place of reporting for duty;

“week” means a period of seven consecutive days starting at any set time and on any set day as specified and stated by the operator.

2. Requirements of the Namibian Civil Aviation Regulations, 2001

- (1) CAR 127.02.14 requires that an operator of a helicopter must have a scheme for the regulation of flight times and duty times of the flight crew.
- (2) CAR 127.02.14 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 helicopter 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 Director for approval.
- (2) Any deviation from the approved scheme must be submitted to the Director for approval.
- (3) Non-availability of auto pilot or auto stabilisation systems requires a reduction in flight time and duty period in respect of commercial 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. Helicopter 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 crew 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 pre-flight notification of duty to flight crew, other than those on standby; and
 - (c) the need to plan time off and also to ensure that flight crew members 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 Director 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 Director 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, 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.
- (3) **Mixed Duties**

When a crew member is required to report for duty in advance of the stipulated report time for a scheduled flight, to carry out a task at the best of the company, then the time spent of that task shall be part of the subsequent FDP.
- (4) **Mixed Simulator and Helicopter Flying**

When a flight crew member flies in the simulator, either on a check or training flight, or as a Training Captain or Instructor, and then within the same duty period flies as a flight crew member on a public transport flight, all the time spent in the simulator is counted in full towards the subsequent FDP and daily flying hour maxima. The FDP allowable is calculated from the report time of the simulator detail.
- (5) **Mixed Single Pilot/Two Pilot Operations**

In one duty period a pilot may fly as single flight crew up to the point where the total flying and duty hours reach the single flight crew FDP limit. During this time the pilot may fly either in command, or as a co-pilot on a two-flight crew helicopter. The pilot may then continue beyond the single flight crew FDP limit in a two-flight crew operation up to the two-flight crew FDP and flying hour maxima, but may only fly as a co-pilot.

7. Limitations of single flight duty periods - flight crew

7.1 Maximum rostered flight duty periods

The maximum rostered flight duty period (FDP) (in hours) must be in accordance with Table 1. Rostering limits in the tables may be extended by in-flight relief or split duty under the terms of paragraphs 7.2 or 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.

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 cockpit 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 Table 1 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 flight duty period by split duty

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 than 3	Nil
3 - 10	Period equal to half of the consecutive hours rest taken

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 is available, not open to the public, but if the rest period is more than six consecutive hours, then a bed 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 Travelling time

- (1) Travelling 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: *Travelling 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 travelling 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 travelling 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.
- (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 flight 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 judgement 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.

7.8 Additional limits applicable to helicopter flying

- (1) Pilots engaged in repetitive short flights, with an average of ten or more take-offs and landings per hour, must have a break of at least thirty minutes away from the helicopter within any continuous period of three hours.
- (2) Operators must specify maximum periods of continuous operation on the more demanding aspects of helicopter flying, such as winching and external-load carrying. The limits applied should not exceed those set out in paragraph (1) but, depending on the nature and circumstances of a particular operation, may need to be more restrictive.

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. When away from base opportunities and facilities for adequate pre-flight rest shall be provided by the operator in suitable accommodation. When operations are carried out at such short notice that it is impracticable for an operator to ensure that rest

accommodation is suitable, it will be the pilot-in-command's responsibility to obtain suitable accommodation.

- (2) The minimum rest period which must be taken before undertaking a flying duty period shall be:

- (a) at least as long as the preceding duty period, or
 (b) 12 hours, whichever is the greater.

In the case when the rest period earned by a crew member is 12 hours, and suitable accommodation is provided by the company, then that rest period may be reduced by one hour. In such circumstances, if the travelling time between the aerodrome and the accommodation is more than 30 minutes each way then the rest period will be increased by the amount the total time spent travelling exceeds one hour. The room allocated to the crew member will be available for occupation for a minimum of 10 hours. This subparagraph does not apply to rest periods that exceed 12 hours.

If the preceding duty period, which includes any time spent on positioning, exceeded 18 hours, then the ensuing rest period must include a local night.

After being called out from a standby duty the length of the minimum rest period shall be determined by the length of standby duty, plus any time spent on positioning, and any FDP completed. Crew members who inform the Company that they are having difficulty in achieving adequate pre flight rest will be given the opportunity to consult in aviation medical specialist.

- (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

- (1) The following limits apply:

Duty	Maximum duration
Flight watch	No limit*
Home reserve	No limit*
Positioning	No maximum*
Standby	Maximum 12 hours (not necessarily consecutive) in any 24 hour period
Standby + FDP	20 hours

* However, the provisions of item (2) applies.

** However, 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

Wherever possible, and if required by the crew member, days off will be taken in the home environment. A single day off for helicopter crew shall include two local nights, and shall be of at least 36 hours duration. A planned rest period may be included as part of a day off.

Crew members will

- (a) not work more than 7 consecutive days,
- (b) have 2 consecutive days off following a period of 7 consecutive days duty, and
- (c) have 2 consecutive days off in any consecutive 14 days, and have at least 3 days off in any consecutive 14 days, and
- (d) have a minimum of 7 days off in any consecutive 4 weeks, and
 - (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 seventy hours over seven days, or sixty hours averaged over any two 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 paragraph 7 to 11 applicable to flight 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 crew members and contained in paragraph 7.1. In order to remove anomalies which might arise when cabin crew members and flight 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 crew start their flight duty period.

- (b) Rostered minimum rest periods must not be more than one hour shorter than those required by flight 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

Records for the duty and rest periods of all flying staff shall include:

For each crew member:

The beginning, and duration of each duty and flying duty period, and function performed during the period.

Duration of each rest period prior to a flying duty or standby duty period.

Dates of days off.

Weekly totals of duty.

For each flight crew member

Daily and weekly flying hours

Records shall be preserved for at least 15 calendar months from the date of the last relevant entry.

Additionally, copies of all aircraft pilot-in-commands' discretion reports of extended flying duty periods and reduced rest periods will be retained for a period of at least fifteen months after the events.

14. Additional Limits On Helicopter Flying

(a) Repetitive Short Sectors

Crew-flying repetitive short sectors, for example pleasure flying, off-shore short sector shuttles, at an average rate of 10 or more landings per hour, will have a break of at least 30 minutes away from the helicopter within any continuous period of 3 hours.

When carrying out the more demanding roles of helicopter flying, for example, winching and external load carrying, crews will have a break of (30) minutes away from the helicopter within any continuous period of 3 hours.

After 3 hours shuttle operations between offshore installations in conditions other than day VMC, a rest of 30 minutes free of all duty will be allowed.

(b) Survival Suits

The wearing of survival suits can prove an irritant and be uncomfortable. Therefore:

- (a) a flight crew member should not participate in moving freight or baggage, or any other activity requiring excessive physical efforts. His role should be supervisory.
- (b) schedules which involves continuous flying in excess of 4.5 hours will include provisions for a break free of all duty of at least 30 minutes, not including a total of 30 minutes for immediate post and pre-flight duties. The break will be scheduled prior to exceeding a total of 6 hours flying.

127.03.1 TRAINING OF CREW MEMBERS

1. Training syllabus

The training syllabus for flight crew members required in terms of CAR 127.03.1, is -

- (1) the syllabi prescribed in Parts 61 and 64, for initial training;
- (2) the syllabi prescribed in TS 127.03.3 and 127.03.10, for conversion training;
- (3) the syllabi prescribed in TS 127.03.4, 127.03.7, 127.03.13, 127.03.14 and 127.03.15 for differences and familiarisation training, recurrent training and checking and refresher training; and
- (4) the syllabi prescribed in Part 92 for initial and refresher dangerous goods training.

127.03.3 CONVERSION TRAINING

1. Operator's type conversion training course syllabus

- (1) An operator's type conversion course syllabus must include the following items:
 - (a) Ground training and checking including helicopter systems, normal, abnormal and emergency procedures;
 - (b) emergency and safety equipment training and checking which must be completed before helicopter training commences;
 - (c) crew resource management training;
 - (d) helicopter/flight simulator training and checking; and
 - (e) operational flying under supervision and operational check.
- (2) The conversion course must be conducted in the order set out in subparagraph (1) above.

2. Crew resource management training

2.1 Procedures

- (1) If the flight crew member has not previously completed an operator's type conversion course then the operator should ensure that a crew resource management (CRM) course with a full length syllabus is completed. The flight crew member should not be assessed either during or upon completion of this course.
- (2) If the flight crew member undergoes a subsequent conversion course with the same or another operator, he or she should complete the appropriate elements of the CRM course. The flight crew member should not be assessed either during or upon completion of this training.
- (3) Recurrent training:
 - (a) Where an operator utilises line orientated flying training (LOFT) in the recurrent training programme, the flight crew member should complete elements of CRM training. The flight crew member should not be assessed.
 - (b) Where an operator does not utilise LOFT, the flight crew member should complete elements of CRM training every year. The flight crew member should not be assessed.
 - (c) An operator should ensure that flight crew members complete the major elements of the full length CRM course over a four year recurrent training cycle. The flight crew member completing this refresher training should not be assessed.
 - (d) When a flight crew member undergoes an operator proficiency check, operational 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 crew and cabin crew.
- (5) There should be an effective liaison between flight crew and cabin crew training departments. Provision should be made for flight instructors and cabin crew instructors to observe and comment on each others training.
- (6) The successful resolution of helicopter emergencies requires interaction between flight crew and cabin crew and emphasis should be placed on the importance of effective coordination and two-way communication between all flight crew members in various emergency situations. Initial and recurrent CRM training should include joint practice in helicopter evacuations so that all who are involved are aware of the duties other crew members should perform. When such practice is not possible, combined flight crew and cabin crew training should include joint discussion of emergency scenarios.

2.2 Objective and contents

- (1) CRM is the effective utilisation of all available resources (e.g. crew members, helicopter 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 crew member concerned. The emphasis is placed on the non-technical aspects of 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, tiredness 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:

Notion of senergy	{	Inquiry (or explore, examine, scrutinise) Conflict resolution Decision making Critique Feedback
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 - (h) effective communication and co-ordination within the crew, and between crew members and other operational personnel (air traffic service, 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 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 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) is approved by the Director. An operator may use a course provided by another operator, if that course has already been approved.

127.03.7 PILOT QUALIFICATION TO OPERATE IN EITHER PILOT'S SEAT

1. Training

- (1) A pilot-in-command required to operate in the co-pilot seat and carry out the duties of co-pilot, or a pilot-in-command required to conduct training or

examining duties from the co-pilot seat, must complete additional training and checking as specified in the operations manual, concurrent with the proficiency checks prescribed in CAR 127.03.7. 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 the helicopter, the engine failure must be simulated.
 - (3) When operating in the co-pilot seat, the checks required for operating in the pilot-in-command 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 proficiency checks prescribed in CAR 127.03.7, which would otherwise have been the responsibility of the pilot-in-command. Where the differences between pilot-in-command and co-pilot 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 pilot-in-command seat, must demonstrate practice of drills and procedures, concurrent with the proficiency checks prescribed in CAR 127.03.7, which would otherwise have been the pilot-in-command's responsibility acting as pilot non-flying. Where the differences between pilot-in-command and co-pilot seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

127.03.10 TYPE AND DIFFERENCES TRAINING

1. General

The operator must ensure that -

- (1) type and differences training is conducted 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 helicopter, as well as all emergency procedures and emergency training related to the helicopter type, variant and configuration to be operated.

2. Fire and smoke training

The 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 helicopter. This training must include -
 - (a) each cabin crew member extinguishing a fire characteristic of a helicopter interior fire except that, in the case of Halon extinguishers, an alternative extinguishing 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 environment; or
- (2) each cabin crew member fulfils the recurrent training requirements of TS 127.03.12.

3. Operation of doors and exits

The operator must ensure that -

- (1) each cabin crew member operates and actually opens all normal and emergency exits for passenger evacuation in a helicopter or representative training device; and
- (2) the operation of all other exits is demonstrated.

4. Evacuation slide training

The operator must ensure that -

- (1) each cabin crew member descends an evacuation slide from a height representative of the helicopter main deck sill height;
- (2) the slide is fitted to a helicopter or a representative training device; and
- (3) a further descent is made when the cabin crew member qualifies on a helicopter type in which the main deck exit sill height differs significantly from any helicopter type previously operated.

5. Evacuation procedures and emergency situations

The 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; and
 - (c) other in-flight emergencies.

6. Crowd control

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

7. Pilot incapacitation

The 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 pilot's checklists.

8. Safety equipment

The 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) Life rafts, including the equipment attached to, and/or carried in, the raft;
- (2) life jackets, infant life jackets and flotation cots;
- (3) first aid oxygen;
- (4) fire extinguishers;
- (5) fire axe or crow-bar;
- (6) emergency lights including torches;
- (7) communications equipment, including megaphones;
- (8) survival packs, including their contents;
- (9) pyrotechnics (actual or representative devices);
- (10) first aid kits, their contents and emergency medical equipment; and
- (11) other cabin safety equipment or systems where applicable.

9. Passenger briefing/safety demonstrations

The operator must ensure that training is given in the preparation of passengers for normal and emergency situations in accordance with CAR 127.08.25.

10. Crew resource management training

The operator must ensure that the crew resource management training for cabin crew, is given in accordance with the current edition of ICAO Doc 7192-AN/857, Part E-1, "Training Manual: Cabin Attendants' Safety Training".

127.03.12 RECURRENT TRAINING

1. Aviation - general

1.1 Regulatory overview

1.1.1 Training objective

The cabin crew member will be able to identify and describe the legislation relating to crew members.

1.1.2 Syllabus

- (1) Identify and describe the specific regulations applicable to crew members and cabin safety and outline the applicable operator's policies and procedures including -
 - (a) seatbelts and related restraint systems and electronic devices;

- (b) survival equipment, i.e. 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) crew stations;
- (i) infant (i.e. definition of);
- (j) minimum crew requirements;
- (k) passenger safety briefings;
- (l) emergency duties;
- (m) passenger safety briefing cards;
- (n) surface contamination training;
- (o) carry-on baggage;
- (p) journey log/cabin logbook (equivalent);
- (q) liquor/drugs;
- (r) refueling (fueling with one-engine running);
- (s) emergency equipment;
- (t) survival equipment;
- (u) duty period 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 helicopters 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 consciousness 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 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 : Cockpit observation flights

1.3.1 Training objective

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

1.3.2 Syllabus

(1) General

- (a) Crew communication and crew coordination depend on each 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 cockpit observation flight will be completed prior to a cabin crew member becoming qualified and thereafter on an annual basis. The following conditions apply:
 - (i) Cabin crew members must be in uniform; however they will be in addition to the minimum crew and will not be assigned any normal safety or cabin service duties;
 - (ii) each cockpit observation flight must include a minimum of 2 take-offs and 2 landings over a total flight time of not less than 1 hour;
 - (iii) each cockpit observation flight will begin at the regular check-in time for the crew. Cabin crew members will observe the normal pre-flight pilot duties i.e. flight planning, weather briefing, flight crew briefing, pre-flight walk-around:
 - (1) Cockpit workloads and safety duties;
 - (2) crew communication procedures;

- (3) crew coordination procedures;
 - (4) cockpit layout;
 - (5) location of emergency equipment;
 - (6) location and operation of cockpit windows;
 - (7) location and operation of cockpit escape hatches;
 - (8) location of controls and operation of pilot and observer seats;
 - (9) location and operation of cockpit oxygen; and
 - (10) location of emergency checklists.
- (iv) Each cabin crew member must participate in a post-flight debriefing on the cockpit observation flight.

2. Roles and responsibilities

2.1 Cabin crew members

2.1.1 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.

2.1.2 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, manuals 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 authorised operator personnel, as designated in the operations manual, date of expiry, specific helicopter 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, i.e. 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 i.e. 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 established operator 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 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

3.1 Crew coordination

3.1.1 Training objective

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

3.1.2 Syllabus

- (1) Describe the importance of crew coordination when applying approved procedures.
- (2) List the positive effects of crew coordination in enhancing flight safety.
- (3) Outline the benefits of 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 crew coordination especially in abnormal and emergency situations.

- (6) Discuss how poor crew coordination has contributed to aviation accidents and incidents and outline strategies to improve crew coordination.
- (7) Flight crew to be included in the review discussions.

3.2 **Communication**

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
- (3) 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.
- (4) Review how poor communication has contributed to aviation accidents and incidents and discuss ways to minimize these communication deficiencies.

3.3 **Surface contamination**

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 helicopter critical surfaces for each of the helicopter types in the operator's fleet.
 - (c) Identify an awareness of the conditions most likely to produce surface contamination.
 - (d) Give examples of visible signs of surface contamination, e.g. 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 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, car wash, rope, etc.

Note: Use of video or photographic material is recommended.
 - (c) Identify that icing conditions can recur on critical surfaces of the helicopter 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, i.e. 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

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 crew briefings, i.e. 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 announce-ment/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**

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 helicopter 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 i.e. cracked windows, damaged door seals, excessive water spills or leaks, obvious structural damage.

3.6 **Passenger handling**

3.6.1 Training objective

The cabin crew member will be able to identify the types of passengers 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 instructions of 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 helicopter 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 responsibilities for passenger supervision while the helicopter is on the ground, including boarding, disembarking and station stops. Include the number of cabin crew members that must be present in the helicopter for the above.
 - (b) Review the importance of safety duties over service duties during passenger boarding.

3.7 Passenger and crew seats/restraints

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 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 helicopters 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 take-off and landing.
 - (i) Describe the different types of seat belts/harnesses found on passenger seats in helicopters 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) Crew seating
- (a) Identify the persons authorised to occupy any of the 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, e.g. "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

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) Crew carry-on baggage
 - (a) Describe the policies and procedures for stowing crew baggage in the passenger cabin including accepting baggage from deadheading crew.
 - (b) Identify the crew carry-on baggage stowage locations for each helicopter type.

3.9 Electronic devices

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 the helicopter.

3.9.2 Syllabus

- (1) General
 - (a) Identify the electronic devices most likely to be carried on board helicopters.

- (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.
- (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

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.

3.0.1 Syllabus

- (1) Cabin crew responsibilities
 - (a) Review the need for crew communication and whenever passenger service is being offered on the ground, i.e. cabin crew to let pilot know service is taking place and pilot to let cabin crew know how much time before take-off.
 - (b) State the requirement for the pilot-in-command to give cabin crew adequate notice prior to take-off so that equipment and supplies may be stowed and pre-take-off duties can be completed.

3.1 Fueling with passengers on board

3.1.1 Training objective

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

3.2 Syllabus

- (1) General
 - (a) List the potential hazards associated with fueling helicopter to occupants and the helicopter.
 - (b) Identify the types of fueling procedures which require that passengers and crew be off-loaded and why the potential hazard is greater.
 - (c) Describe the procedures and precautions for fueling with passengers on board.
 - (d) Define what is meant by designated evacuation exits during fueling and associated procedures.
- (2) Cabin crew responsibilities
 - (a) Identify crew responsibilities and communication when fueling 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 crew communication and the decision to disembark passengers.

3.2 **Pre-take-off and pre-landing**

3.2.1 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.

3.2.2 Syllabus

- (1) Cabin crew responsibilities
 - (a) Describe safety-related information that should be conveyed and the requirement to be clear, concise, specific and timely.
 - (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.
 - (d) Identify cabin and passenger safety checks.

3.3 **Rotor abnormalities**

3.3.1 Training objective

The cabin crew member will be able to identify the characteristics of rotor abnormalities and be aware of the procedures associated with this situation.

3.3.2 Syllabus

- (1) General
 - (a) Define what is meant by rotor abnormalities and emergencies that may occur as a result.
 - (b) Describe how to recognize rotor malfunctions and their effect on flight characteristics.
 - (c) Identify the crew communication procedures associated with these rotor abnormalities.
 - (d) Outline the procedures for relocating passengers.
 - (e) Identify rotor abnormalities.

3.4 **Aerodrome safety**

3.4.1 Training standard

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

3.4.2 Syllabus

- (1) Hazards on aerodromes
 - (a) Identify the hazards associated with aerodromes, example: aerodrome/ground service traffic, noise and weather, foreign objects.
 - (b) Describe the hazards associated with traffic on the aerodrome including helicopter movement, propellers, jet blast/exhaustion vehicles.
- (2) Cabin crew responsibilities
 - (a) Identify the established procedures and requirements for escorting passengers across the aerodrome.
 - (b) Describe the coordination required between cabin crew members and ground staff to ensure passenger safety, i.e. stairs in place, props are secured and ways to achieve it.
- (3) Operations
 - (a) List the aerodrome safety hazards associated with helicopter operations.
 - (b) Describe the correct ways to approach a helicopter with and without the rotor engaged.
 - (c) Identify communication and coordination procedures between crew and ground staff to ensure passengers are escorted to and from the helicopter.
 - (d) Describe when it is safe to board/disembark passengers and who is responsible for this decision, and how this information is conveyed to cabin crew members.
 - (e) Describe operational regulations differing from aeroplane operations.

3.5 **Turbulence**

3.5.1 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.

3.5.2 Syllabus

- (1) General
 - (a) Describe turbulence and the classification of turbulence, i.e. light, moderate, severe.

(A.I.P)

- (b) List the potential hazards to helicopters, crew and passengers in turbulence.

(2) Cabin crew responsibilities

- (a) Identify the importance of crew communication and 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.

3.6 Crew member incapacitation

3.6.1 Training objective

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

3.6.2 Syllabus

(1) General

- (a) Define what is meant by incapacitated crew member and identify possible causes, i.e. 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 helicopter types in the fleet.
- (c) Identify the preferred locations for relocating incapacitated crew members on different helicopters in the operator's fleet.
- (d) Identify how and where to secure an incapacitated crew member for landing or during periods of in-flight turbulence.
- (e) Identify the crew communication procedures to advise of crew member incapacitation including cockpit/cabin, senior cabin crew member/other crew members.

(2) Pilot incapacitation

- (a) Identify the assistance crew members will be required to provide in the cockpit.
- (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 cockpit.

(3) Cabin crew incapacitation

- (a) Identify the cabin crew coordination 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).

3.7 **Post-flight duties**

3.7.1 Training objective

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

3.7.2 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 crew change, identify the responsibility of the crew to brief the new cabin crew regarding any unserviceabilities, special passengers, any other safety-related matters pertinent to their flight.

4. **Emergency procedures**

4.1 **Fire fighting**

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 helicopters 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 helicopter 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 behaviour 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, i.e. smell, auditory, visual, touch, tactile.
 - (i) Describe the chemical properties of each type of fire extinguisher including hazards to occupants and helicopter 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 regulations;
 - (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 helicopter 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 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, e.g. 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, crew communication and 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 helicopters including crew communication, crew coordination and advice to passengers.

Note: May be in the helicopter 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/aerodrome fires;
 - (iv) fires on loading bridges; and
 - (v) service vehicle fires.
- (b) Describe established procedures for dealing with these fire situations including recognition, crew communication and 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**

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) Crew responsibilities

- (a) List the 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, 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 decompressions and decompression problems**

4.2.1 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.

4.2.2 Syllabus

(1) General

- (a) Identify the causes of each type of decompression (pressurisation loss), i.e. 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 crew members.
 - (d) Describe the effect of decompressions on any objects, persons in the immediate area.
 - (e) Describe the likely helicopter 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 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 crew communication procedures, i.e. signal for beginning a post-decompression walk-around, who is responsible for giving this signal and when it will be given.
 - (d) List the cabin crew member duties in a post-decompression walkaround and safety priorities.
 - (e) Identify the importance of crew coordination including passenger relocation during decompressions and methods of achieving this coordination.

4.3 Evacuations

4.3.1 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.

4.3.2 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 sur-vivability in evacuation such as fuselage break-up, smoke, fire, etc.
 - (d) Describe the flotation characteristics of helicopters in the fleet. Identify the factors which could adversely affect helicopter flotation in water landings, i.e. structural damage, weight, centre of gravity, outside conditions.

- (e) Describe the different attitudes possible as a result of accidents/incidents, i.e. gear collapse, shift in centre of gravity. Include the effect of different helicopter attitudes on exit usability.
 - (f) Describe the effect of environmental conditions in evacuations, i.e. 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 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 incapacitated passengers and fellow crew members in evacuations.
 - (c) Describe the importance of 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 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 helicopter; and
 - (vi) evacuation at an aerodrome.
- (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, i.e. 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, i.e. slides, ramps, ropes or any other evacuation aid that is provided on the operator's helicopters. Include instructions on operation, use and instructions to passengers for using these.
- (g) Identify the inflation times for the different evacuation aids, i.e. 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, i.e. elderly, handicapped, passengers with guide animals.
- (j) Identify how cabin crew members can manage evacuations in adverse conditions, i.e. heavy smoke, darkness.
- (k) Identify the importance of checking the cabin and cockpit, 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 helicopter and under what conditions this should be accomplished.

- (4) Post-evacuation
 - (a) Describe the responsibilities of cabin crew members after an evacuation, i.e. 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 helicopter 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 a helicopter 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

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 helicopters.

5.2 Syllabus

- (1) General
 - (a) Review the location of each piece of safety and emergency equipment the operator has available on board each helicopter.
 - (b) Describe each piece of safety and emergency equipment the operator has available on board each helicopter 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. Helicopter specific

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, if applicable.

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, i.e. 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 objectives

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 objectives

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 objectives

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 helicopter, including cockpit, 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 O₂ masks and spares.
- (d) Identify alternate procedures to access oxygen mask when the system fails.
- (e) Describe the crew communication procedures required to activate the oxygen system.

6.5 Heating and ventilation systems

6.5.1 Training objectives

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 crew communication and crew coordination procedures when using the heating and ventilation system.
- (c) Identify conditions that may occur in the cabin associated with the system, i.e. 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, e.g. inadvertent slide deployment, injury to 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 crew communication and coordination procedures, 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, crew communication and 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 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 helicopter 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 helicopter in the operator's fleet, e.g. 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. Drills

7.1 Passenger briefing drills

7.2.1 Equipment criteria

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

7.2.2 Performance criteria

Each cabin crew member will perform each of the following:

- (1) Pre-flight safety briefing to a special attention passenger (i.e. blind, physically disabled, unaccompanied minor);
- (2) individual briefing to an ABP (i.e. 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 (i.e. signs, seat belts, exits, oxygen, life jacket, floor level lighting, safety features card, etc.)

7.2.3 Evaluation criteria

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

- (1) completeness of briefing content (i.e. all relevant points included);
- (2) effective usage of communication techniques (i.e. 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 Helicopter operation drills for each helicopter type

7.2.1 Equipment criteria

- (1) Each drill will be performed using the appropriate helicopters or a simulator.
- (2) Individual helicopter exits may be substituted by an approved equivalent and as authorised 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 helicopter 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 (i.e. clear of obstruction, fire, helicopter 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) (i.e. slide disconnect, ventral stairs, etc.).
- (2) Each cabin crew member will operate each cabin window or hatch exit type for each helicopter 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 (i.e. clear of obstruction, fire, helicopter 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) (i.e. slide disconnect, tailcone jettison, etc.)

7.2.3 Evaluation criteria

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

- (1) Acknowledgement and timely responses to signals;
- (2) assessment of the conditions outside the exit to determine exit usability (i.e. clear of obstruction, fire, helicopter 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) (i.e. slide disconnect, tailcone jettison, ventral stairs); and
- (10) correctly applies procedures (i.e. 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 helicopters 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 a helicopter 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 helicopters operating with one cabin crew member and who is being qualified on helicopters 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 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) helicopter attitude which will necessitate a decision to use the exit or redirect passengers;
 - (d) poor visibility (i.e. darkness, smoke);

- (e) incapacitated crew members;
- (f) exits which become unusable during the evacuation;
- (g) special needs passengers (i.e. elderly, handicapped);
- (h) passengers in panic (i.e. positive, negative, false leadership);
- (i) failure of helicopter emergency systems (i.e. lighting, evacuation signal, communication);
- (j) decompression; and
- (k) exits which require the use of non-standard “commands” (i.e. 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, (i.e. 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 cockpit checks, and remove required emergency equipment;
 - (n) evacuate helicopter/simulator correctly;
 - (o) physically identify location of escape tapes or escape ropes; and

- (p) physically identify release handle(s) (i.e. 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 (i.e. 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 helicopter type;
- (6) assessment of the conditions inside and outside the exit to determine exit usability throughout evacuation (i.e. clear of obstruction, fire, helicopter 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 (i.e. assisting outside helicopter and directing people away from the helicopter 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) (i.e. 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) Recognise the in-flight emergency signal from the cockpit 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 helicopter and directing people away from the helicopter 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 cockpit checks, remove required emergency equipment; and
- (9) evacuate helicopter/simulator.

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 (i.e. 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 helicopter 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 helicopter aisle;
 - (b) examine all features of a fully inflated raft;
 - (c) board raft(s), assist persons into raft;
 - (d) access the inflation lanyard;
 - (e) access the slide, raft quick release mechanism while verbally describing the procedure to release the life raft from the helicopter; 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, (i.e. 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 (i.e. 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 in the helicopter.

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 Helicopter slide drill

7.6.1 Equipment criteria

- (1) The evacuation slide must be representative of the type installed in the helicopter 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 helicopter.

7.6.2 Performance criteria

Each cabin crew member will perform a helicopter 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 (i.e. under seat, overhead bin, closet);
 - (b) galley area (i.e. garbage bin, upper electrical panel, oven);
 - (c) confined area (i.e. waste bin, lavatory); and
 - (d) hidden (i.e. behind panels).

7.7.2 Equipment criteria

- (1) Fire fighting drills will be conducted using furnishings representative of those found on the operator's helicopters as appropriate to the drill scenario (i.e. 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 helicopter 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 (i.e. smoke detector signal or unusual fumes, odours, 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 (i.e. tactile search, use of crash axe, etc.);
- (3) effective communication/coordination procedures throughout the drill (i.e. notifying fellow 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 (i.e. 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)

(Reserved.)

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 helicopter 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, i.e. horizontal, vertical, recline; and
- (c) apply crew coordination and crew communication procedures to assist the remaining flight crew.

NOTES ON CABIN CREW TRAINING STANDARD SYLLABUS

1. Where helicopters 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 2 for a summary of training syllabus.
2. Where an "X" is shown instead of a "\$" provision is made for optional or guidance inclusion.

127.03.13 REFRESHER TRAINING

1. Refresher training

The 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 a helicopter or a simulator;
- (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.

127.03.14 CHECKING**1. Checking**

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

- (1) Initial training -
X The subjects referred to in CAR 64.02.3, as applicable;
- (2) Type and differences training -
X The subjects listed in TS 127.03.10; and
- (3) Recurrent training -
X The subjects listed in TS 127.03.12.

127.04.3 OPERATIONS MANUAL**1. Structure of operations manual**

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

Part 1 : 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 CARs.

Part 2 : Helicopter operating matters

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

Part 3 : Route and aerodrome instructions and information

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

Part 4 : 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) An operator must ensure that the detailed structure of the operations manual is approved by the Director.

2. Contents of operations manual**2.1 PART 1 : GENERAL****2.1.1 Administration and control of operations manual**

- (1) Introduction

- (a) A statement that the manual complies with all applicable CARs and with the terms and conditions of the applicable operating 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 organogram 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, crew training and ground operations. A description of their function 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 CARs.

(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 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) competency 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 assurance system

A description of the quality control system adopted.

2.1.5 Crew composition

(1) Crew composition

An explanation of the method for determining crew compositions taking account of the following:

- (a) The type of helicopter being used;
 - (b) the area and type of operation being undertaken;
 - (c) the phase of the flight;
 - (d) the minimum crew requirement and flight time and duty period planned;
 - (e) experience (total and on type), recency and qualification of the 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 crew.
- (2) Designation of the pilot-in-command
- The rules applicable to the designation of the pilot-in-command.
- (3) Crew incapacitation
- Instructions on the succession of command in the event of 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 helicopter type, kind of operation and composition of the crew.
- (2) Flight 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 familiarisation flights.
 - (c) Operation on more than one type or variant.
- (4) Training, checking and supervision personnel
 - (a) For flight crew
 - (b) For cabin crew.

- (5) Other operations personnel.

2.1.7 Crew health precautions

- (1) Crew health precautions

The relevant regulations and guidance to crew members concerning health including -

- (a) alcohol and other intoxicating liquor;
- (b) narcotics;
- (c) drugs;
- (d) 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.

Note: See Document NAM-CATS-MR.

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 127.02.14 as applicable to the operation.

- (2) Exceedances of 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

The method for establishing aerodrome operating minima for IFR flights in accordance with TS 127.08.11. 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 helicopters 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 helicopter'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 helicopter types;
 - (vi) general instruction and information necessary for verification of the various types of mass and balance documentation in use;
 - (vii) last minute changes procedures;
 - (viii) specific gravity of fuel, oil and water methanol; and

(ix) seating policy/procedures.

(i) Flight plan

Procedures and responsibilities for the preparation and submission of the 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 helicopter journey log

The responsibilities and the use of the operator's helicopter journey log must be described, including samples of the format used.

(l) List of documents, forms and additional information to be carried.

(2) Ground handling instructions

(a) Fueling procedures

A description of fueling procedures, including -

- (i) safety precautions during refueling and defueling including when an APU is in operation or when a turbine engine is running and the prop-brakes are on;
- (ii) refueling and defueling when passengers are embarking, on board or disembarking ; and
- (iii) precautions to be taken to avoid mixing fuels.

(b) Helicopter, 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 helicopter. Further procedures, aimed at achieving safety whilst the helicopter is on the aerodrome, 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 helicopter;
- (vi) special loads and classification of load compartments;
- (vii) positioning of ground equipment;
- (viii) operation of helicopter doors;

- (ix) safety on the aerodrome, including fire prevention, blast and suction areas;
- (x) start-up, ramp departure and arrival procedures;
- (xi) servicing of helicopters;
- (xii) documents and forms for helicopter handling; and
- (xiii) multiple occupancy of helicopter 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 helicopters on the ground. These must include descriptions of the types and effects of icing and other contaminants on helicopters 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 helicopter 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 helicopter;
- (ii) 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) heavy precipitation;
 - (vi) sand storms;
 - (vii) mountain waves; and
 - (viii) significant temperature inversions.
- (i) Wake turbulence

Wake turbulence separation criteria, taking into account helicopter types, wind conditions and runway location.
- (j) Crew members at their stations

The requirements for crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interests of aviation safety.
- (k) Use of safety belts for crew and passengers

The requirements for crew members and passengers to use safety belts and/or harnesses during the different phases of flight or whenever deemed necessary in the interests of aviation safety.
- (l) Admission to cockpit

The conditions for the admission to the cockpit of persons other than the flight crew.
- (m) Use of vacant crew seats

The conditions and procedures for the use of vacant crew seats.
- (n) Incapacitation of crew members

Procedures to be followed in the event of incapacitation of crew members in flight. Examples of the types of incapacitation and the means for 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 helicopter;
 - (iii) Procedures to be followed during passenger embarkation and disembarkation;
 - (iv) procedures in the event of fueling 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 CAR 91.08.24.
- (q) Procedures for helicopters 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) Use of the minimum equipment and configuration deviation list(s)
- (6) 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.
- (7) Oxygen requirements
- (a) An explanation of the conditions under which oxygen must be provided and used.
 - (b) The oxygen requirements specified for -
 - (i) flight 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 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 aircraft;
- (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 helicopter flying in or about to enter a restricted or prohibited 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 2 : HELICOPTER 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. helicopter dimensions), including a description of the units of measurement used for the operation of the helicopter 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 helicopter type including a pictorial presentation;
- (3) types of operation that are approved (e.g. IFR/VFR, CAT II/III, flights in known icing conditions, etc.);
- (4) crew composition;
- (5) mass and centre of gravity;
- (6) speed limitations;
- (7) flight envelope(s);
- (8) wind limits;
- (9) performance limitations for applicable configurations;
- (10) airframe contamination; and
- (11) system limitations.

2.2.3 Normal procedures

The normal procedures and duties assigned to the crew, the appropriate checklists, the system for use of the checklists and a statement covering the necessary coordination procedures between flight 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; and
- (13) post landing.

2.2.4 Abnormal and emergency procedures

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

- (1) Crew incapacitation;
- (2) fire and smoke drills;
- (3) exceeding structural limits such as overweight landing;
- (4) lightning strikes;
- (5) distress communications and alerting ATC to emergencies;
- (6) engine failure;
- (7) system failures;
- (8) guidance for diversion in case of serious technical failure;
- (9) ground proximity warning;
- (10) TCAS warning;
- (11) windshear; and

- (12) 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) 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.

- (3) 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

- (a) Effect of equipment on level flight (fuel consumption, speed and range):

- (i) Hoist installation;

- (ii) sliding doors -

open; and
closed;

- (iii) ski installation;

- (iv) float installation;

- (v) emergency float installation; and

- (vi) sand filter installation;

- (b) 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. Flights to isolated aerodromes must be included.

- (2) The method for calculating fuel needed for the various stages of flight in accordance with TS 127.08.16.

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 helicopter.

22.4 Configuration deviation list

The Configuration Deviation List(s) (CDL), if provided by the manufacturer, taking account of the helicopter types and variants operated including procedures to be followed when a helicopter is being despatched under the terms of its CDL.

2.2.5 Minimum equipment list

The Minimum Equipment List (MEL) taking account of the helicopter types and variants operated and the type(s)/area(s) of operation.

2.2.6 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 checklist(s) must also be included.
- (2) The procedure for determining the amount of oxygen required and the quantity that is available. The flight profile and number of occupants must be considered. The information provided must be in a form in which it can be used without difficulty.

2.2.7 Emergency evacuation procedures

- (1) Instructions for preparation for emergency evacuation including crew coordination and emergency station assignment.
- (2) Emergency evacuation procedures

A description of the duties of all members of the crew for the rapid evacuation of a helicopter and the handling of the passengers in the event of a forced landing, ditching or other emergency.

2.2.8 Helicopter systems

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

2.3 PART 3: 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) 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 helicopter 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 crew competency qualification.

2.4 **PART 4 : 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 crew
All relevant items prescribed in Part 61 and Subpart 3 of Part 127;
 - (b) For cabin crew
All relevant items prescribed in Part 64 and Subpart 3 of Part 127;
 - (c) For operations personnel concerned, including crew members:
 - (i) All relevant items prescribed in Part 92; and
 - (ii) all relevant items regarding operator security.
 - (d) For operations personnel other than 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 abnormal 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.

3. General

The operations manual must be drawn up in accordance with ICAO Doc 9376-AN/914, "Preparation of an Operations Manual", 1st edition, 1990.

127.04.4 HELICOPTER JOURNEY LOG

1. Information to be contained in helicopter journey log

- (1) The information to be retained in the helicopter journey log will include the following:
 - (a) Aeroplane Registration;
 - (b) Date;
 - (c) Name(s) of crew member(s);
 - (d) Duty assignments of crew member(s);
 - (e) Place of departure;
 - (f) Place of arrival;
 - (g) Time of departure (off-block time);
 - (h) Time of arrival (on-block time);
 - (i) Hours of flight;
 - (j) Nature of flight
 - (k) Incidents, observations (if any) and;
 - (l) Pilot-in-command's signature.
- (2) The operator must ensure that all entries are made concurrently and that they are permanent in nature.

127.04.6 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) Helicopter registration;
 - (b) helicopter type and variant;
 - (c) date of flight;
 - (d) flight identification;
 - (e) names of crew members;
 - (f) duty assignment of 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 flight plan clearance and subsequent re-clearance;
 - (t) in-flight re-planning 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) The operator must ensure that the operational flight plan and its use is described in the operations manual.
- (4) The operator must ensure that all entries in the operational flight plan are made concurrently and that they are permanent in nature.

127.04.7 FLIGHT PLAN

1. Items in a flight plan

- (1) A flight plan filed prior to departure must contain the following items:
- (a) Helicopter identification and transponder data;
 - (b) flight rules and type of flight;
 - (c) number and type(s) of helicopter(s) and wake turbulence category;
 - (d) radio communication, navigation and approach-aid equipment;
 - (e) aerodrome of departure and time;
 - (f) flight information region boundaries and estimated times;
 - (g) cruising speed and flight level;
 - (h) route to be followed;
 - (i) destination aerodrome and estimated times of arrival;
 - (j) alternate aerodrome(s);
 - (k) alerting action required;
 - (l) fuel endurance;
 - (m) total number of persons on board;

- (n) emergency and survival equipment and colour of helicopter;
 - (o) other pertinent information; and
 - (p) name, postal address, telephone and telefax number of the operator or pilot-in-command of the helicopter which must be completed in field 18 of the standard flight plan form.
- (2) A flight plan filed in flight to comply with CAR 127.04.7(6) must contain the following items:
- (a) Helicopter registration;
 - (b) flight rules;
 - (c) type of helicopter;
 - (d) aerodrome of departure;
 - (e) cruising speed and flight level;
 - (f) route to be followed and estimates as applicable;
 - (g) destination aerodrome and estimated time of arrival;
 - (h) alternate aerodrome for IFR flights;
 - (i) alerting action required;
 - (j) fuel endurance if alerting action required;
 - (k) total number of persons on board; and
 - (l) name, postal address, telephone and telefax number of the operator or pilot-in-command of the helicopter.

127.04.13 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 in TS 127.01.5.

127.04.15 DOCUMENT STORAGE PERIODS

An operator shall ensure that the following information/documentation is stored in an acceptable form accessible to the Director, for the periods shown in the table below.

Note: Additional information relating maintenance records is prescribed in Subpart 10.

Table 1 - Information used for the Preparation and execution of a flight

Information used for the preparation and execution of the flight as described in CAR 127.04.6	
Operational flight plan	3 months
Aeroplane Technical Log	24 months after the date of the last entry
Route specific NOTAM/AIS briefing documentation edited by the operator	3 months
Mass and balance documentation	3 months
Notification of special loads including dangerous goods	3 months

Table 2 - Reports

Reports	
Journey Log	3 months
Flight report(s) for recording details of any occurrence, as prescribed in CAR 127.04.4, or any event which the commander deems necessary to report/record	3 months
Reports on exceedances of duty and/or reducing rest periods	3 months

Table 3 - Flight crew records

Flight crew Reports	
Flight, duty and rest time	15 minutes
Licence	As long as the flight crew member is exercising the privileges of the licence for the operator
Conversion training and checking	3 years
Command course (including checking)	3 years
Recurrent training and checking	3 years
Training and checking to operate in either pilot's seat	3 years
Recent experience	15 months
Route and aerodrome competence	3 years
Dangerous goods training as appropriate	3 years

Table 4 - Cabin crew records**Table 5 - Records for other operations personnel**

Records for other operations personnel	
Training/qualification records of other personnel for whom an approved training programme is required by Part 127	Last 2 training records

Table 6 - Other records

Other records	
Quality system records	5 years

127.04.17 TECHNICAL LOG**1. Information to be contained in a technical log**

- (1) The following information for each flight must be contained in the technical log:
 - (a) Helicopter registration;

- (b) date;
 - (c) names(s) of crew member(s);
 - (d) duty assignment of crew member(s);
 - (e) place of departure;
 - (f) place of arrival;
 - (g) time of departure (off-block time);
 - (h) time of arrival (on block-time);
 - (i) hours of flight;
 - (j) nature of flight;
 - (k) incidents, observations (if any);
 - (l) signature of pilot-in-command;
 - (m) the current maintenance statement giving the helicopter maintenance status of what maintenance, scheduled or out of phase, is next due;
 - (n) all outstanding deferred defects which affect the operation of the helicopter;
 - (o) fuel used; and
 - (p) fuel uplift.
- (2) The operator or pilot-in-command need not keep a technical log or part thereof, if the relevant information is available in other documentation.
- (3) The operator must ensure that all entries are made concurrently and that they are permanent in nature.

127.05.10 FLIGHT RECORDER

1. Flight recorder specifications

All digital flight recorders must comply with one of the following specifications as applicable:

- (1) ARINC 542A
- (2) ARINC 573-717
- (3) ARINC 717
- (4) ICAO.

127.05.12 COCKPIT VOICE RECORDER

1. Types of helicopters

- (1) A helicopter with a maximum certificated mass exceeding 2 730 kilograms and to which an individual certificate of airworthiness was first issued on or after 1 April 1998.

- (2) A helicopter with a maximum certificated mass exceeding 7 000 kilograms, or a maximum approved passenger seating configuration of more than nine seats, to which an individual certificate of airworthiness was first issued up to and including 1 April 1998.

127.05.13 FLIGHT DATA RECORDER

1. Types of helicopters

(Reserved.)

127.05.20 STANDARD FIRST AID KIT

1. Standard first aid kits

- (1) The following must be included in the first aid kit:
 - (a) Bandage (unspecified);
 - (b) burns dressings (unspecified);
 - (c) wound dressings, large and small;
 - (d) adhesive tape, safety pins and scissors;
 - (e) small adhesive dressings;
 - (f) antiseptic wound cleaner;
 - (g) adhesive wound closures;
 - (h) adhesive tape;
 - (i) disposable resuscitation aid;
 - (j) simple analgesic e.g. paracetamol;
 - (k) antiemetic e.g. cinnarizine;
 - (l) nasal decongestant;
 - (m) first aid handbook;
 - (n) splints, suitable for upper and lower limbs;
 - (o) gastrointestinal antacid +;
 - (p) anti-diarrhoeal medication e.g. loperamide +;
 - (q) ground/air visual signal code for use by survivors;
 - (r) disposable glove; and
 - (s) a list of contents. This should include information on the effects and side effects of drugs carried.

Note: 1. *An eye irrigator whilst not required to be carried in the first aid kit should, where possible, be available for use on the ground.*

2. *+ indicates helicopters with more than 9 passenger seats installed.*

- (2) Unless the standard first aid kit is clearly visible, its location must be indicated by a placard or sign, and appropriate symbols may be used to supplement the placard or sign.
- (3) The operator or pilot-in-command must ensure that the standard first aid kit is readily accessible for use.
- (4) A helicopter must be equipped with the following number of standard first aid kits:

Number of passenger seats installed	Number of standard first aid kits required
0 to 99	1
100 to 199	2
200 to 299	3
300 and more	4

127.05.21 SUPPLEMENTAL OXYGEN IN CASE OF NON-PRESSURED HELICOPTER

1. General

- (1) The operator or pilot-in-command may not operate a non-pressurised helicopter at altitudes above 10 000 feet, unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.
- (2) The amount of supplemental oxygen for sustenance required for a particular operation must be determined on the basis of flight altitudes and flight duration, consistent with the operating procedures established for each operation in the operations manual and with the routes to be flown, and with the emergency procedures specified in the operations manual, if applicable.
- (3) A helicopter intended to be operated above 10 000 feet, must be provided with equipment capable of storing and dispensing the oxygen supplies required.

2. Oxygen supply requirements

- (1) Flight crew members

Each flight crew member on duty in the cockpit must be supplied with supplemental oxygen in accordance with paragraph 3. If all occupants of cockpit seats are supplied from the flight crew source of oxygen supply, they are to be considered as flight crew members on cockpit duty for the purpose of oxygen supply.

- (2) Cabin crew members, additional crew members and passengers

Cabin crew members and passengers must be supplied with oxygen in accordance with paragraph 3. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, are to be considered as passengers for the purpose of oxygen supply.

3. Minimum requirements for supplemental oxygen for non-pressurised helicopters

SUPPLY FOR		DURATION AND PRESSURE ALTITUDE
1.	All occupants of cockpit seats on duty in cockpit	Entire flight time at pressure altitudes above 10 000 feet.
2.	All required cabin crew members	Entire flight time at pressure altitudes above 13 000 feet and for any period exceeding 30 minutes at pressure altitudes above 10 000 feet but not exceeding 13 000 feet.
3.	100% of passengers (See Note)	Entire flight time at pressure altitudes above 13 000 feet.
4.	10% of passengers (See Note)	Entire flight time after 30 minutes at pressure altitudes greater than 10 000 feet but not exceeding 13 000 feet.

Note: For the purpose of this table 'passengers' means passengers actually carried and includes infants.

127.05.22 HAND FIRE EXTINGUISHERS

1. Hand fire extinguishers

The operator or pilot-in-command may not operate a helicopter unless hand fire extinguishers are provided for use in crew, passenger and, as applicable, cargo compartments and galleys in accordance with the following:

- (1) The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used and, for personnel compartments, must minimise the hazard of toxic gas concentration.
- (2) At least one hand fire extinguisher, containing Halon 1211 (bromochlorodifluoromethane, CBrClF₂), or equivalent as the extinguishing agent, must be conveniently located in the cockpit for use by the flight crew.
- (3) At least one hand fire extinguisher must be located in, or readily accessible for use in, each galley not located on the main passenger deck.
- (4) At least one readily accessible hand fire extinguisher must be available for use in each cargo compartment which is accessible to crew members during flight for the purpose of fire fighting.
- (5) At least the following number of hand fire extinguishers must be conveniently located to provide adequate availability for use in each passenger compartment:

Passenger compartment seating capacity	Number required
7 to 30	1
31 to 60	2
61 and more	3

127.05.24 MEGAPHONES

1. Megaphones

- (1) The operator or pilot-in-command may not operate a helicopter with a maximum approved passenger seating configuration of more than 19 seats and carrying one or more passengers unless it is equipped with portable

battery-powered megaphones readily accessible for use by crew members during an emergency evacuation, to the following scales:

(a) For each passenger compartment:

Passenger seating configuration	Number of megaphones required
19 to 99	1
100 or more	2

(b) For aeroplanes with more than one passenger compartment, in all cases when the total passenger seating configuration is more than 19 seats, at least 1 megaphone is required.

- (2) When one megaphone is required, it must be readily accessible from a cabin crew member's assigned seat. Where two or more megaphones are required, they must be suitably distributed in the passenger cabin(s) and readily accessible to cabin crew members assigned to direct emergency evacuations. This does not necessarily require megaphones to be positioned such that they can be reached by a cabin crew member when strapped in a cabin crew member's seat.
- (3) Unless the megaphone is clearly visible, its location must be indicated by a placard or sign, and appropriate symbols may be used to supplement the placard or sign.

127.05.25 EMERGENCY LIGHTING

1. Emergency lighting

The helicopter must be equipped with -

- (1) an emergency lighting system having an independent power supply to provide a source of general cabin illumination to facilitate the evacuation of the helicopter; and
- (2) illuminated emergency exit marking and locating signs.

127.05.26 AUTOMATIC EMERGENCY LOCATOR TRANSMITTER

1. Distress frequencies

The operator or pilot-in-command must ensure that the automatic emergency locator transmitter (ELT) is capable of transmitting on the distress frequencies 121,5 MHz and 243 MHz, except that, where the whole of a proposed flight is within an area where, for search and rescue purposes, only one of these frequencies is required, the use of that single frequency may be specifically authorised, if so agreed by the authority responsible for search and rescue in the area concerned.

2. Types of ELTs

Types of ELTs are defined as follows:

2.1 Automatic Fixed (ELT (AF))

This type of ELT is intended to be permanently attached to the helicopter before and after a crash and is designed to aid search and rescue teams in locating a crash site;

2.2 Automatic Portable (ELT (AP))

This type of ELT is intended to be rigidly attached to the helicopter before a crash, but readily removable from the helicopter after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the helicopter-mounted antenna may be disconnected and an auxiliary antenna (stores on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life raft. This type of ELT is intended to aid search and rescue teams in locating the crash site or survivor(s);

2.3 Automatic Deployable (ELT (AD))

This type of ELT is intended to be rigidly attached to the helicopter before the crash and automatically ejected and deployed after the crash sensor has determined that a crash has occurred. This type of ELT should float in water and is intended to aid search and rescue teams in locating the crash site.

3. Installation

To minimise the possibility of damage in the event of crash impact, the ELT should be rigidly fixed to the helicopter structure as far aft as practicable with its antenna and connections so arranged as to maximise the probability of the signal being radiated after a crash.

127.05.28 LIFE RAFTS AND SURVIVAL RADIO EQUIPMENT FOR EXTENDED OVER-WATER FLIGHTS

1. Equipment

- (1) The operator or pilot-in-command must ensure that the helicopter is equipped with -
 - (a) in the case of a helicopter carrying less than 12 persons, a minimum of one life raft with a rated capacity of not less than the maximum number of persons on board;
 - (b) in the case of a helicopter carrying 12 persons or more, a minimum of two life rafts sufficient together to accommodate all persons capable of being carried on board. Should one life raft of the largest rated capacity be lost, the overload capacity of the remaining life raft(s) must be sufficient to accommodate all persons in the helicopter;
 - (c) one emergency locator transmitter;
 - (d) emergency exit lighting; and
 - (e) life saving equipment including means of sustaining life as appropriate to the flight to be undertaken.
- (2) Each life raft must conform to the following specifications:
 - (a) It must be of an approved design and stowed so as to facilitate its ready use in an emergency;
 - (b) it must be radar conspicuous to standard airborne radar equipment;
 - (c) when carrying more than one life raft on board, at least 50 per cent must be jettisonable by the crew while seated at their normal station, where necessary by remote control; and
 - (d) those life rafts which are not jettisonable by remote control or by the crew, must be of such mass as to permit handling by one person. A mass of 40 kilograms must be considered a maximum mass.

- (3) Each life raft must contain at least the following:
- (a) One approved survivor locator light;
 - (b) one approved visual signalling device;
 - (c) one canopy, for use as a sail, sunshade or rain catcher;
 - (d) one radar reflector;
 - (e) one 20 m retaining line designed to hold the life raft near the helicopter but to release it if the helicopter becomes totally submerged;
 - (f) one sea anchor;
 - (g) one survival kit, appropriately, equipped for the route to be flown, which must contain at least the following:
 - (i) One life raft repair kit;
 - (ii) one bailing bucket;
 - (iii) one signalling mirror;
 - (iv) one police whistle;
 - (v) one buoyant raft knife;
 - (vi) one supplementary means of inflation;
 - (vii) seasickness tablets;
 - (viii) one first aid kit;
 - (ix) one portable means of illumination;
 - (x) one half litre of pure water and one sea water desalting kit; and
 - (xi) one comprehensive illustrated survival booklet.
- (4) Batteries used in the ELTs must be replaced, or recharged, if the battery is rechargeable, when the equipment has been in use for more than one cumulative hour, and also when 50 per cent of their useful life or, if rechargeable, 50 per cent of their useful life of charge, as established by the equipment manufacturer, has expired.

The new expiry date for the replacement, or recharged, battery must be legibly marked on the outside of the equipment. The battery useful life, or useful life of charge, requirements specified in this subparagraph, do not apply to batteries, such as water-activated batteries, which are essentially unaffected during probable storage intervals.

127.05.29 SURVIVAL EQUIPMENT

1. Survival equipment

The operator or pilot-in-command may not operate a helicopter across areas in which search and rescue would be especially difficult, unless it is equipped with the following:

- (1) Signalling equipment to make the pyrotechnical distress signals prescribed in TS 127.11.10;
- (2) at least one ELT; and
- (3) additional survival equipment for the route to be flown taking account of the number of persons on board as prescribed in paragraph 3.

2. Interpretation

For the purposes of this technical standard, the expression “area in which search and rescue would be especially difficult” means -

- (1) an area so designated by the State responsible for managing search and rescue; or
- (2) an area which is largely uninhabited and where -
 - (a) the State responsible for managing search and rescue has not published any information to confirm that search and rescue would not be especially difficult; and
 - (b) the State referred to in (a) does not, as a matter of policy, designate areas as being especially difficult for search and rescue.

3. Additional survival equipment

- (1) The following additional survival equipment must be carried when required:
 - (a) 500 ml of water for each 4, or fraction of 4, persons on board;
 - (b) one knife;
 - (c) first aid equipment;
 - (d) one set of air/ground codes.
- (2) In addition, when polar conditions are expected, the following should be carried:
 - (a) A means for melting snow;
 - (b) one snow shovel and one ice saw;
 - (c) sleeping bags for use by one third of all persons on board and space blankets for the remainder or space blankets for all passengers on board; and
 - (d) one Arctic/polar suit for each crew member carried.

4. Duplicates

If any item of equipment contained in the above list is already carried on board the helicopter in accordance with another requirement, there is no need for this to be duplicated.

5. Location

Unless the survival equipment is clearly visible, its location must be indicated by a placard or sign, and appropriate symbols may be used to supplement the placard or sign.

127.05.33 COMMUNICATION EQUIPMENT**1. General**

- (1) The operator or pilot-in-command must ensure that a flight does not commence unless the communication and navigation equipment required under Subpart 5 of Part 127, is -
 - (a) approved and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements;
 - (b) installed in such manner that the failure of any single unit required for either communication or navigation purposes, or both, will not result in the inability to communicate and/or navigate safely on the route being flown;
 - (c) in an operable condition for the kind of operation being conducted except as provided in the MEL; and
 - (d) so arranged that if equipment is to be used by one flight crew member at his or her station during flight, it must be readily operable from his or her station. When a single item of equipment is required to be operated by more than one flight crew member, it must be installed so that the equipment is readily operable from any station at which the equipment is required to be operated.
- (2) Communication and navigation equipment minimum performance standards are those prescribed in the applicable NAM-TSO, unless different performance standards are prescribed. Communication and navigation equipment complying with design and performance specifications other than NAM-TSO on the date of commencement of the CARs, may remain in service, or be installed, unless additional requirements are prescribed in Subpart 5 of Part 127.

2. Radio equipment

- (1) The operator or pilot-in-command may not operate a helicopter unless it is equipped with radio equipment required for the kind of operation being conducted.
- (2) Where two independent (separate and complete) radio systems are required, each system must have an independent antenna installation except that, where rigidly supported non-wire antennae or other antenna installations or equivalent reliability are used, only one antenna is required.
- (3) The radio communication equipment required to comply with subparagraph (1), must also provide for communication on the aeronautical emergency frequency 121,5 MHz.

3. Audio selector panel

The operator or pilot-in-command may not operate a helicopter under IFR unless it is equipped with an audio selector panel accessible to each required flight crew member.

4. Radio equipment for operations under VFR over routes navigated by reference to visual landmarks

The operator or pilot-in-command may not operate a helicopter under VFR over routes than can be navigated by reference to visual landmarks, unless it is equipped with the radio equipment (communication and SSR transponder equipment) necessary under normal operating conditions to fulfil the following:

- (1) Communicate with appropriate ground stations;
- (2) communicate with appropriate air traffic service facilities from any point in controlled airspace within which flights are intended;
- (3) receive meteorological information; and
- (4) reply to SSR interrogations as required for the route being flown.

5. Communication and navigation equipment for operations under IFR, or under VFR over routes not navigated by reference to visual landmarks

- (1) The operator or pilot-in-command may not operate a helicopter under IFR, or under VFR over routes that cannot be navigated by reference to visual landmarks, unless the helicopter is equipped with -
 - (a) two independent radio communication systems necessary under normal operating conditions to communicate with an appropriate ground station from any point on the route;
 - (b) two independent navigation aids appropriate to the route/area to be flown;
 - (c) an approach aid suitable for the destination and alternate aerodromes;
 - (d) an area navigation system when area navigation is required for the route/area being flown;
 - (e) an additional VOR receiving system on any route, or part thereof, where navigation is based only on VOR signals;
 - (f) an additional ADF system on any route, or part thereof, where navigation is based only on NDB signals; and
 - (g) SSR transponder equipment as required for the route/area being flown.
- (2) The operator or pilot-in-command may operate a helicopter that is not equipped with the navigation equipment specified in subparagraph (1)(e) or (f), provided that it is equipped with alternative equipment authorised, for the route/area being flown, by the Director. The reliability and the accuracy of alternative equipment must allow safe navigation for the intended route.
- (3) The above requirements may be met by combinations of instruments or by integrated flight systems or by a combination of parameters on electronic displays provided that the information so available to each required pilot is not less than that provided by the instruments and associated equipment as specified above.
- (4) Where not more than one item of equipment specified in subparagraph (1), is unserviceable when the helicopter is about to begin a flight, the helicopter may nevertheless take off on that flight if -
 - (a) it is not reasonably practicable for the repair or replacement of that item to be carried out, before the beginning of the flight;
 - (b) the helicopter has not made more than one flight since the item was last serviceable; and
 - (c) the pilot-in-command is satisfied that, taking into account the latest information available as to the route/area and aerodrome to be used,

including any planned diversion, and the weather conditions likely to be encountered, the flight can be made safely and in accordance with any relevant requirements of the appropriate air traffic service unit.

127.06.2 QUALITY ASSURANCE SYSTEM

1. Minimum standards for a quality assurance system

- (1) The quality assurance system referred to in CAR 127.06.2(2), must include -
 - (a) a clear definition of the level of quality the operator intends to achieve;
 - (b) a quality assurance programme that contains procedures designed to verify that all operations are being conducted in accordance with all the applicable requirements, standards and procedures;
 - (c) a procedure that sets out the level and frequency of the internal reviews;
 - (d) a procedure to record the findings and communicate them to management;
 - (e) a list of responsible persons;
 - (f) procedures by which other quality indicators such as facility malfunction reports, incidents, occurrences, complaints and defects are brought into the quality assurance system;
 - (g) procedures for management analysis and overview;
 - (h) procedures for rectifying any deficiencies which may be found; and
 - (i) procedures for documenting the complete review process from the inspection to the satisfactory management review so that this is available to the Director during a safety inspection and audit.
- (2) For maintenance purposes, the quality assurance system must, in addition, include at least the following functions:
 - (a) Monitoring that the activities of maintenance responsibility are being performed in accordance with the approved procedures;
 - (b) monitoring that all contracted maintenance is carried out in accordance with the contract; and
 - (c) monitoring the continued compliance with the requirements prescribed in Subpart 10 of Part 127.
- (3) Measures must be taken to ensure that the system is understood, implemented and complied with at all levels.
- (4) The quality assurance system must be documented in the operations manual referred to in CAR 127.04.3.

2. Compliance with procedures for operations inspection, certification and continued surveillance

The quality assurance system must be established in accordance with the current edition of ICAO Doc 8335, "Manual of Procedures for Operations Inspection, Certification and Continued Surveillance".

127.06.5 APPLICATION FOR AIR OPERATOR CERTIFICATE OR AMENDMENT THEREOF**1. Form of application**

The form referred to in CAR 127.06.5, in which application must be made for the issuing of an air operator certificate, or an amendment thereof, is contained in Annexure C.

127.06.6 ADJUDICATION OF APPLICATION AND ISSUING OF CERTIFICATE**1. Form of certificate**

The form referred to in CAR 127.06.6(4), on which an air operator certificate is issued, is contained in Annexure D.

127.06.11 STATISTICAL INFORMATION**1. Statistical information**

The statistical information referred to in CAR 127.06.11, that must be furnished to the Director, is the appropriate statistical information required by -

- (1) the International Civil Aviation Organisation, in the Manual on the ICAO Statistics Programme, Doc 9060, 4th edition, 1994; and
- (2) the Southern African Development Community Protocol on Transport, Communications and Meteorology of 24 August 1996, Chapter 9.

127.06.15 RENEWAL OF CERTIFICATE**1. Form of application**

The form in which an application for the renewal of an air operator certificate must be made, is contained in Annexure C.

127.07.2 APPLICATION FOR FOREIGN AIR OPERATOR PERMIT OR AMENDMENT THEREOF**1. Form of application**

The form referred to in CAR 127.07.2, in which application must be made for the issuing of a foreign air operator permit, or an amendment thereof, is contained in Annexure E.

127.07.3 ADJUDICATION OF APPLICATION AND ISSUING OF PERMIT**1. Form of permit**

The form referred to in CAR 127.07.3(4), on which a foreign air operator permit is issued, is contained in Annexure F.

127.07.7 RENEWAL OF PERMIT**1. Form of application**

The form in which an application for the renewal of a foreign air operator permit must be made, is contained in Annexure E.

127.08.3 OPERATIONAL CONTROL AND SUPERVISION**1. Approval of method of supervision**

The Director shall give due consideration to:

- (1) Qualification for employment;
- (2) Training/examination/licences;
- (3) Licence and qualification validity;
- (4) Competence of operations;
- (5) Personnel;
- (6) Supervisory staff;
- (7) Control, analysis and storage of records;
- (8) Flight documents and data;
- (9) Documents used for the preparation and execution of the flight;
- (10) Reports;
- (11) Analysis and retention of documents and records;
- (12) Quality control of EDP;
- (13) Documents storage periods – flight crew records;
- (14) Documents storage periods – cabin crew records;
- (15) Flight time and duty period records (flight crew and cabin crew);
- (16) Documents storage periods – records for other operations personnel;
- (17) Flight recorder records; and
- (18) Accident prevention and flight safety programme:
 - (a) Accident prevention;
 - (b) Human factors;
 - (c) Accident prevention organisation;
 - (d) Flight safety programme; and
 - (e) Main aspects of the flight safety programme.

127.08.11 AERODROME OPERATING NAMIBIA**1. Take-off minima****1.1 General**

- (1) Take-off minima established by the operator must be expressed as visibility or RVR limits, taking into account all relevant factors for each aerodrome planned to be used and the helicopter characteristics. Where there is a specific need to see and avoid obstacles on departure and/or for a forced landing, additional conditions (e.g. ceiling) must be specified.
- (2) The pilot-in-command may not commence take-off unless the weather conditions at the aerodrome of departure are equal to or better than the applicable minima for landing at that aerodrome unless a suitable take-off alternate aerodrome is available.
- (3) When the reported meteorological visibility is below that required for take-off and RVR is not reported, a take-off may only be commenced if the pilot-in-command can determine that the RVR/visibility is equal to or better than the required minimum.
- (4) When no reported meteorological visibility or RVR is available, a take-off may only be commenced if the pilot-in-command can determine that the RVR/visibility is equal to or better than the required minimum.

1.2 Visual reference

- (1) The take-off minima must be selected to ensure sufficient guidance to control the helicopter in the event of both a discontinued take-off in adverse circumstances and a continued take-off after failure of the critical power unit.
- (2) For night operations ground lighting must be available to illuminate the FATO and any obstacles unless otherwise approved by the Director.

1.3 Required RVR/Visibility

- (1) For Performance Class I operations, an operator must establish an RVR and visibility respectively (RVR/VIS) as take-off minima in accordance with the following table:

On-shore aerodrome with IFR departure procedures	RVR/Visibility
Nil facilities (day)	250 m or the rejected take-off distance whichever is the greater
Nil facilities (night)	800 m
Unit/unmarked defined runway/FATO	200 m
Touch down zone edge/FATO lighting and centre line marking	200 m
Touch down zone edge/FATO lighting, centreline lighting and RVR information	150 m
Onshore aerodrome without IFR departure procedures	800 m

- (2) For performance Class 2 operations, an operator must operate to take-off minima of 800 m RVR/VIS and remain clear of cloud during the take-off manoeuvre or until reaching Performance Class 1 capabilities.
- (3) For Performance Class 3 operations an operator must operate to take-off minima of 600 ft cloud ceiling and 800 m RVR/VIS.
- (4) Table 6 below, for converting reported meteorological visibility to RVR, must not be used for calculating take-off minima.

2. Non-precision approach

2.1 System minima

- (1) An operator must ensure that system minima for non-precision approach procedures, which are based upon the use of ILS without glidepath (LLZ only), VOR, NDB, SRA and VDF are not lower than the MDH values given in Table 2 below.

Table 2 : System minima for non-precision approach aids

System minima	
Facility	Lowest MDH
ILS (no glide path - LLZ)	250 ft
SRA (terminating at 1/2 NM)	250 ft
SRA (terminating at 1NM)	300 ft
SRA (terminating at 2 NM)	350 ft
VOR	300 ft
VOR/DME	250 ft
NDB	300 ft
VDF (QDM and QGH)	300 ft

2.2 Minimum descent height

An operator must ensure that the minimum descent height for a non-precision approach is not lower than either -

- (1) the OCH/OCL for the category of helicopter; or
- (2) the system minimum.

2.3 Visual reference

A pilot may not continue an approach below MDA/H unless at least one of the following visual references for the intended touch down area is distinctly visible and identifiable to the pilot:

- (1) Elements of the approach light system;
- (2) the threshold;
- (3) the threshold markings;
- (4) the threshold lights;
- (5) the threshold identification lights;
- (6) the visual glide slope indicator;
- (7) the touch down zone or touch down zone markings;
- (8) the touch down zone lights;
- (9) touch down zone edge lights; or
- (10) other visual references accepted by the Director.

2.4 Required RVR

- (1) For non-precision approaches by performance Class 1 and 2 helicopters, the minima given in the following table apply:

Table 3: Onshore non-precision approach minima

Onshore non-precision approach minima (Category I)			
MDH (ft)	Facilities		
	Full (1)	Intermediate (2)	Basic (3)
250 - 299	600	600	1 000
300 - 449	800	1 000	1 000
450 and above	1 000	1 000	1 000

- Note: 1.** *Full facilities comprise touch down zone markings, 720 m or more of HI/MI approach lights, touch down zone edge lights, threshold lights and touch down zone end lights. Lights must be on.*
2. *Intermediate facilities comprise touch down zone markings, 420 - 719 m of HI/MI approach lights, touch down zone edge lights, threshold lights and touch down zone end lights. Lights must be on.*
3. *Basic facilities comprise touch down zone markings, < 420 m of HI/MI approach lights, any length of LI approach lights, touch down zone edge lights, threshold lights, touch down zone end lights or no lights at all.*
4. *The tables are only applicable to conventional approaches with a nominal descent slope of not greater than 4E. Greater descent slopes will usually require that visual glide slope guidance (e.g. PAPI) is also visible at the Minimum Descent Height.*
5. *The above figures are either reported RVR or meteorological visibility converted to RVR as in paragraph 7 below.*
6. *The MDH mentioned in Table 3 refers to the initial calculation of MDH. When selecting the associated RVR, there is no need to take account of a rounding up to the nearest ten feet, which may be done for operational purposes, e.g. conversion to MDA.*

(2) Where the missed approach point is within _ NM of the landing threshold, the approach minima given for full facilities may be used regardless of the length of approach lighting available. However, touch down zone edge lights, threshold lights, end lights and touch down zone markings are still required.

(3) Night operations

For night operations ground lighting must be available to illuminate the FATO and any obstacles unless otherwise approved by the Director.

(4) Single-pilot operations

For single-pilot operations the minimum RVR is 800 m or the Table 3 minima whichever is higher.

3. Precision approach - Category I operations

3.1 General

A Category I operation is a precision instrument approach and landing using ILS, MLS or PAR with a decision height not lower than 200 ft and with a visibility not less than 500 m.

3.2 Decision height

An operator must ensure that the decision height to be used for a Category I precision approach is not lower than -

- (1) the minimum decision height specified in the helicopter flight manual (HFM) if stated;
- (2) the minimum height to which the precision approach aid can be used without the required visual reference;
- (3) the OCH/OCL for the category of helicopter; or

- (4) 200 ft.

3.3 Visual reference

A pilot may not continue an approach below the Category I decision height, determined in accordance with paragraph 3.2 above, unless at least one of the following visual references for the intended touchdown area is distinctly visible and identifiable to the pilot:

- (1) Elements of the approach light system;
- (2) the threshold;
- (3) the threshold markings;
- (4) the threshold lights;
- (5) the threshold identification lights;
- (6) the visual glide slope indicator;
- (7) the touchdown zone or touchdown zone markings;
- (8) the touchdown zone lights; or
- (9) touchdown zone edge lights.

3.4 Required RVR

For Category I operations by Performance Class I and 2 helicopters the following minima applies:

Table 4 : Onshore precision approach minima - Category I

Onshore non-precision approach minima (Category I)			
MDH (ft)	Facilities		
	Full (1)	Intermediate (2)	Basic (3)
200	500	600	1 000
201 - 250	650	650	1 000
251 - 300	600	700	1 000
301 and above	750	800	1 000

- Notes:**
1. *Full facilities comprise touchdown zone markings, 720 m or more of HI/MI approach lights, touchdown zone edge lights, threshold lights and touchdown zone end lights. Lights must be on.*
 2. *Intermediate facilities comprise touchdown zone markings, 420 - 719 m of HI/MI approach lights, touchdown zone edge lights, threshold lights and touchdown zone end lights. Lights must be on.*
 3. *Basic facilities comprise touchdown zone markings, < 420 m of HI/MI approach lights, any length of LI approach lights, touchdown zone edge lights, threshold lights and touchdown zone end lights or no lights at all.*
 4. *The above figures are either the reported RVR or meteorological visibility converted to RVR in accordance with paragraph 7.*
 5. *The table is applicable to conventional approaches while a glide slope angle up to and including 4E.*

6. *The DH mentioned in Table 4 refers to the initial calculation of DH. When selecting the associated RVR, there is no need to take account of a rounding up to the nearest ten feet, which may be done for operational purposes, e.g. conversion to DA.*

(1) Night operations

For night operations ground lighting must be available to illuminate the FATO and any obstacles unless otherwise approved by the Director.

(2) Single-pilot operations

For single-pilot operations, the operator must calculate the minimum RVR for all approaches. An RVR of less than 800 m is not permitted except when using a suitable autopilot coupled to an ILS or MLS, in which case normal minima apply. The decision height applied must not be less than 1.25 x the minimum disengagement height for the autopilot.

4. Onshore precision approach - Category II operations

4.1 General

A Category II operation is a precision instrument approach and landing using ILS or MLS with:

- (1) A decision height below 200 ft but not lower than 100 ft; and
- (2) a visibility of not less than 300 m.

4.2 Decision height

An operator must ensure that the decision height for a Category II operation is not lower than -

- (1) the minimum decision height specified in the helicopter flight manual.
- (2) the minimum height to which the precision approach aid can be used without the required visual reference;
- (3) the OCH/OCL for the category of helicopter; or
- (4) the decision height to which the flight crew is authorised to operate; or
- (5) 100 ft.

4.3 Visual reference

A pilot may not continue an approach below the Category II decision height determined in accordance with paragraph 4.2 above, unless visual references containing a segment of at least 3 consecutive lights being the centre line of the approach lights, or touch down zone lights, or touch down zone edge lights, or a combination of these is attained and can be maintained. This visual reference must include a lateral element of the ground pattern, i.e. an approach lighting crossbar or the landing threshold or a barrette of the touch down zone lighting.

4.4 Required RVR

For Category II approaches by performance Class 1 helicopters the following minima apply:

Table 5 : RVR for Category II approach vs DH

Onshore non-precision approach minima - Category III	
Decision height	Auto-coupled to below DH (1) RVR (m)
100 - 120	300
121 - 140	400
141 and above*	450

Note: The reference to “auto-coupled to below DH” in this table means continued use of the automatic flight control system down to a height which is not greater than 80% of the applicable DH. Thus airworthiness requirements may, through minimum engagement height for the automatic flight control system, affect the DH to be applied.

5. Onshore circling

- (1) Circling is the term used to describe the visual phase of an instrument approach, to bring a helicopter into position for landing on a touch down area which is not suitably located for a straight in approach.
- (2) For circling the specified MDH may not be less than 250 ft, and the meteorological visibility may not be less than 800 m.

Note: Visual manoeuvring (circling) with prescribed tracks is an accepted procedure within the meaning of this paragraph.

6. Visual approach

An operator may not use an RVR of less than 800 m for a visual approach.

7. Conversion of reported meteorological visibility to RVR

- (1) An operator must ensure that a meteorological visibility to RVR conversion is not used for calculating take-off minima, Category II or III minima or when a reported RVR is available.
- (2) When converting meteorological visibility to RVR in all other circumstances than those in subparagraph (1) above, an operator must ensure that the following table is used:

Table 6 : Conversion of visibility to RVR

Lighting elements in operation	RVR = Met. Visibility multiplied by	
	Day	Night
HI approach and touch down zone lighting	1.5	2.0
Any type of lighting	1.0	1.5
No lighting	1.0	Not applicable

- (a) Airborne radar approach (ARA) for over-water operations

General

- (i) An operator may not conduct ARAs unless approved by the Director.
- (ii) Airborne radar approaches are only permitted to rigs or vessels under way when a multi-crew concept is used.

- (iii) A pilot-in-command may not undertake an airborne radar approach unless the radar can provide course guidance to ensure obstacle clearance.
 - (iv) Before commencing the final approach the pilot-in-command must ensure that a clear path exists on the radar screen for the final and missed approach segments. If lateral clearance from any obstacle will be less than 1.0 nm, the pilot-in-command must -
 - 1. approach to a nearby target structure and thereafter proceed visually to the destination structure; or
 - 2. make the approach from another direction leading to a circling manoeuvre.
 - (v) The pilot-in-command must ensure that the cloud ceiling is sufficiently clear above the helideck to permit a safe landing.
- (b) Minimum descent height (MDH)
- (i) The MDH is determined from a radio altimeter. The MDH for an airborne radar approach may not be lower than:
 - 1. 200 ft by day;
 - 2. 300 ft by night.
 - (ii) The MDH for an approach leading to a circling manoeuvre may not be lower than:
 - 1. 300 ft by day;
 - 2. 500 ft by night.
- (c) Minimum descent altitude (MDA)
- A MDA may only be used if the radio altimeter is unserviceable. The MDA may be a minimum of MDH + 200 ft and may be based on a calibrated barometer at the destination or on the lowest forecast QNH for the region.
- (d) Decision range
- The decision range may not be less than 0.75 nm unless an operator has demonstrated to the Director that a lesser decision range can be used at an acceptable level of safety.
- (e) Visual reference
- No pilot may continue an approach beyond decision range or below MDA/H unless he or she is visual with the destination.
- (f) Single-pilot operations
- The MDA/H for a single-pilot ARA must be 100 ft higher than that calculated using subparagraphs (b) and (c) above. The decision range may not be less than 1.0 nm.

127.08.14 MASS AND BALANCE**1. Definitions**

Any word or expression to which a meaning has been assigned in the Aviation Act, 1962, and the Namibian Civil Aviation Regulations, 2001, bears, when used in this technical standard, the same meaning unless the context indicates otherwise, and -

“dry operating mass” means, for the purposes of this technical standard, the total mass of the helicopter ready for a specific type of operation excluding all usable fuel and traffic load;

“maximum take-off mass” means the maximum permissible total helicopter mass at take-off; and

“traffic load” means the total mass of passengers, baggage and cargo, including any non-revenue load.

2. Loading, mass and balance

The operator must specify, in the operations manual, the principles and methods involved in the loading and in the mass and balance system which comply with the provisions of CAR 135.08.14. This system must cover all types of intended operations.

3. Mass values for crew

- (1) The operator or pilot-in-command must use the following mass values to determine the dry operating mass:
 - (a) Actual masses including any crew baggage; or
 - (b) standard masses, including hand baggage, of 85 kg for flight crew members and 75 kg for cabin crew members.
- (2) The operator or pilot-in-command must correct the dry operating mass to account for any additional baggage. The position of this additional baggage must be accounted for when establishing the centre of gravity of the helicopter.

4. Mass values for passengers and baggage

- (1) The operator or pilot-in-command must compute the mass of passengers and checked baggage using either the actual weighed mass of each person and the actual weighed mass of baggage or the standard mass values specified in Tables 1 to 3 below except where the number of passenger seats available is less than 6, when the passenger mass may be established by a verbal statement by or on behalf of each passenger or by estimation. The procedure specifying when to select actual or standard masses must be included in the operations manual.
- (2) If determining the actual mass by weighing, the operator or pilot-in-command must ensure that passengers' personal belongings and hand baggage are included. Such weighing must be conducted immediately prior to boarding and at an adjacent location.
- (3) If determining the mass of passengers using standard mass values, the standard mass values in Tables 1, 2 and 3 below must be used. The standard masses include hand baggage and the mass of any infant carried by an adult on one passenger seat. Infants occupying separate passenger seats are to be considered as children for the purpose of this paragraph.

- (4) Where the total number of passenger seats available in a helicopter is 20 or more, the standard masses of male and female in Table 1 are applicable. As an alternative, in cases where the total number of passenger seats available is 30 or more, the 'All Adult' mass values in Table 1 are applicable.

Table 1

Passenger seats	20 and more		30 and more
	Male	Female	All adult
All flights	82 kg	64 kg	78 kg
Children	35 kg	35 kg	35 kg
Hand baggage (where applicable)			
Survival suit (where applicable)		6 kg	

- (5) Where the total number of passenger seats available in a helicopter is 10 - 19 inclusive, the standard masses in Table 2 are applicable.

Table 2

Passenger seats	10 - 19	
	Male	Female
All flights	86 kg	68 kg
Children	35 kg	35 kg
Hand baggage (where applicable)	6 kg	
Survival suit (where applicable)	3 kg	

- (6) Where the number of passenger seats available is 1 - 5 inclusive or 6 - 9 inclusive, the standard masses in Table 3 are applicable.

Table 3

Passenger seats	1-5	6-9
Male	98 kg	90 kg
Female	80 kg	72 kg
Children	35 kg	35 kg
Hand baggage (where applicable)	6 kg	
Survival suit (where applicable)	3 kg	

- (7) Where the total number of passenger seats available in the helicopter is 20 or more, the standard mass value for each piece of checked baggage is 13 kg. For helicopters with 19 passenger seats or less the actual mass of checked baggage, determined by weighing, must be used.
- (8) If the operator or pilot-in-command wishes to use standard mass values other than those contained in Tables 1 to 3 above, he or she must advise the Director of his or her reasons and gain such approval in advance. After verification and approval by the Director of the results of the weighing survey, the revised standard mass values are only applicable to that operator. The revised standard mass values can only be used in circumstances consistent with those under which the survey was conducted. Where revised standard masses exceed those in Tables 1 to 3, then such higher values must be used.

- (9) On any flight identified as carrying a significant number of passengers whose masses, including hand baggage, are expected to exceed the standard passenger mass, the operator or pilot-in-command must determine the actual mass of such passengers by weighing or by adding an adequate mass increment.
- (10) If standard mass values for checked baggage are used and a significant number of passengers check-in baggage that is expected to exceed the standard baggage mass, the operator or pilot-in-command must determine the actual mass of such baggage by weighing or by adding an adequate mass increment.
- (11) The operator must ensure that a pilot-in-command is advised when a non-standard method has been used for determining the mass of the load and that this method is stated in the mass and balance documentation.

5. Mass and balance documentation

5.1 General

- (1) The operator must establish mass and balance documentation prior to each flight specifying the load and its distribution.

The mass and balance documentation must enable the pilot-in-command to determine by inspection that the load and its distribution is such that the mass and balance limits of the helicopter are not exceeded.

The person supervising the loading of the helicopter must confirm by signature that the load and its distribution are in accordance with the mass and balance documentation.

Acceptance of the loading of the helicopter by the pilot-in-command, must be indicated by countersignature or equivalent.

- (2) The mass and balance documentation must contain the following information:
 - (a) The helicopter 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 centre of gravity of the helicopter;
 - (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, cargo and ballast;
 - (i) the take-off mass, landing mass and zero fuel mass;
 - (j) the load distribution;
 - (k) the applicable helicopter centre of gravity positions; and

- (l) the limiting mass and centre of gravity values.

5.2 Last minute change

- (1) The operator must specify procedures for last minute changes to the load.
- (2) If any last minute change occurs after the completion of the mass and balance documentation, this must be brought to the attention of the pilot-in-command and the last minute change must be entered on the mass and balance documentation.

The maximum allowed change in the number of passengers or hold load acceptable as a last minute change, must be specified in the operations manual.

If this number is exceeded, new mass and balance documentation must be prepared.

5.3 Computerised systems

- (1) Where mass and balance documentation is generated by a computerised mass and balance system, the operator must verify the integrity of the output data.
- (2) The operator must establish a system to check that amendments of the input data are incorporated properly in the system and that the system is operating correctly on a continuous basis by verifying the output data at intervals not exceeding six months.

5.4 Onboard mass and balance systems

The operator must obtain the approval of the Director if the operator wishes to use an onboard mass and balance computer system as a primary source of despatch.

5.5 Datalink

When mass and balance documentation is sent to helicopters via datalink, a copy of the final mass and balance documentation as accepted by the pilot-in-command, must be available on the ground.

127.08.16 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 helicopter from the expected fuel consumption data;
- (2) deviations from forecast meteorological conditions; and
- (3) deviations from planned routings and/or cruising levels/altitudes.

127.08.20 NOISE ABATEMENT PROCEDURES

1. Procedures

Aeroplane operating procedures for noise abatement must comply with the provisions of PANS-OPS (Doc 8168), Volume I, Part V, published by ICAO.

127.08.28 COMMENCEMENT AND CONTINUATION OF APPROACH**1. Conversion of reported visibility**

- (1) The pilot-in-command must ensure that a meteorological visibility to RVR conversion is not used for calculating take-off minima, Category II or III minima or when a reported RVR is available.
- (2) When converting meteorological visibility to RVR in circumstances other than those in subparagraph (1) above, the pilot-in-command must ensure that the following table is used:

Conversion of visibility to RVR

Passenger seats	RVR = Reported Met. Visibility multiplied by	
	Day	Night
HI approach and runway/ touchdown and lift-off area lighting	1.5	2
Any type of lighting installation other than above	1	1.5
No lighting	1	Not applicable

127.08.35 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, must 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 must not be exceeded;
- (3) underseat stowages must 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 must 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 must not be of such size that they prevent latched doors from being closed securely;
- (6) baggage and cargo must not be placed where it can impede access to emergency equipment; and
- (7) checks must 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 helicopter or cause injury by failing (or other movement) as may be appropriate to the phase of flight.

127.09.1 HELICOPTER PERFORMANCE CLASSIFICATION

(Reserved.)

127.10.6 OPERATOR'S MAINTENANCE MANAGEMENT MANUAL**1. Information to be contained in the manual**

The operator's maintenance management manual must contain details of the organisation structure, including:

- (1) the competent person responsible for the maintenance system;
- (2) the personnel responsible for planning, performing, supervising and inspecting all maintenance to ensure -
 - (a) that such maintenance is carried out on time to an approved standard so that the maintenance responsibility referred to in CAR 127.10.3 is satisfied; and
 - (b) the functioning of the quality assurance system referred to in CAR 127.06.2; and
- (3) the procedures to be followed to satisfy such maintenance responsibility and quality assurance functions.

127.11.8 LIGHTS TO BE DISPLAYED BY HELICOPTER**1. Aircraft**

At night all aircraft in flight or operating on the manoeuvring area of an aerodrome must display the lights prescribed in paragraph 2, unless otherwise instructed by the Director or by an air traffic service unit: Provided that such aircraft must display no other lights if these are likely to be mistaken for the lights prescribed in paragraph 2.

2. Aeroplane operating lights**2.1 Definitions**

Any word or expression to which a meaning has been assigned in the Aviation Act, 1962, and the Civil Aviation Regulations, 2001, bears, when used in this technical standard, the same meaning unless the context indicates otherwise, and -

Angles of "coverage" means -

- (1) Angle of coverage A is formed by two intersecting vertical planes making angles of 70 degrees to the right and 70 degrees to the left respectively, looking aft along the longitudinal axis to a vertical plane passing through the longitudinal axis.
- (2) Angle of coverage F is formed by two intersecting vertical planes making angles of 110 degrees to the right and 110 degrees to the left respectively, looking forward along the longitudinal axis to a vertical plane passing through the longitudinal axis.
- (3) Angle of coverage L is formed by two intersecting vertical planes one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis.

- (4) Angle of coverage R is formed by two intersecting vertical planes one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis;

“horizontal plane” means the plane containing the longitudinal axis and perpendicular to the plane of symmetry of the aeroplane;

“longitudinal axis of the aeroplane” means a selected axis parallel to the direction of flight at a normal cruising speed, and passing through the centre of gravity of the aeroplane;

“making way” means that an aeroplane on the surface of the water is under way and has a velocity relative to the water;

“under command” means that an aeroplane on the surface of the water is able to execute manoeuvres as required by the International Regulations for Preventing Collisions at Sea for the purpose of avoiding other vessels;

“under way” means that an aeroplane on the surface of the water is not aground or moored to the ground or to any fixed object on the land or in the water;

“vertical planes” means planes perpendicular to the horizontal plane; and

“visible” means visible on a dark night with a clear atmosphere.

Lights to be displayed in the air

As illustrated in Figure 1, the following unobstructed navigation lights must be displayed:

- (1) A red light projected above and below the plane through angle of coverage L;
- (2) a green light projected above and below the horizontal plane through angle of coverage R;
- (3) a white light projected above and below the horizontal plane rearward through angle of coverage A.

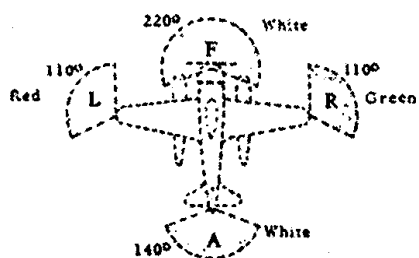


Figure 1

2.3 Lights to be displayed on the water

- (1) General
 - (a) The International Regulations for Preventing Collisions at Sea require different lights to be displayed in each of the following circumstances:
 - (i) When under way;
 - (ii) when towing another vessel or aeroplane;
 - (iii) when being towed;
 - (iv) when not under command and not making way;

- (v) when making way but not under command;
- (vi) when at anchor;
- (vii) when aground.

(b) The lights required by aeroplanes in each case are described below.

(2) When under way

(a) As illustrated in Figure 2, the following appearing as steady unobstructed lights:

- (i) A red light projected above and below the plane through angle of coverage L;
- (ii) a green light projected above and below the horizontal plane through angle of coverage R;
- (iii) a white light projected above and below the horizontal plane rearward through angle of coverage A; and
- (iv) a white light projected through angle of coverage F.

(b) The lights described in the first three items should be visible at a distance of at least 3.7 km (2 nm). The light described in the fourth item should be visible at a distance of 9.3 km (5 nm) when fitted to an aeroplane of 20 m or more in length or visible at a distance of 5.6 km (3 nm) when fitted to an aeroplane of less than 20 m in length.

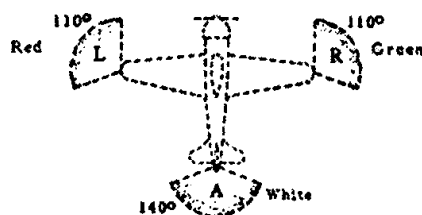


Figure 2

(3) When towing another vessel or aeroplane

As illustrated in Figure 3, the following appearing as steady, unobstructed lights:

- (a) the lights described in subparagraph (2);
- (b) a second light having the same characteristics as the light described in the fourth item of subparagraph (2) and mounted in a vertical line at least 2 m above or below it; and
- (c) a yellow light having otherwise the same characteristics as the light described in the third item of subparagraph (2) and mounted in a vertical line at least 2 m above it.

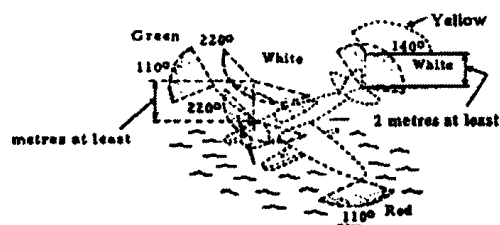


Figure 3

- (4) When being towed

The lights described in the first three items of subparagraph (2) appearing as steady unobstructed lights.

- (5) When not under command and not making way

As illustrated in Figure 4, two steady red lights placed where they can best be seen, one vertically over the other and not less than 1 m apart, and of such a character as to be visible all around the horizon at a distance of at least 3,7 km (2 nm).

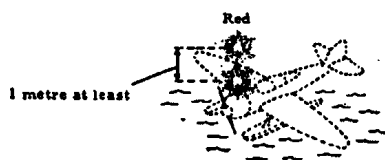


Figure 4

- (6) When making way but not under command

As illustrated in Figure 5, the lights described in subparagraph (5) and the first three items of subparagraph (2).

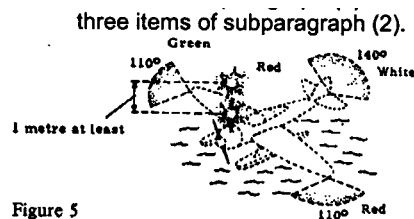


Figure 5

Note: The display of lights prescribed in subparagraphs (5) and (6) above is to be taken by other aircraft as signals that the aeroplane showing them is not under command cannot therefore get out of the way. They dare not signals of aeroplanes in distress and requiring assistance.

- (7) When at anchor

- (a) If less than 50 m in length, where it can best be seen, a steady white light (Figure 6), visible all around the horizon at a distance of at least 3.7 km (2 nm).



Figure 6

- (b) If 50 m or more in length, where they can best be seen, a steady white forward light and a steady white rear light (Figure 7) both visible all around the horizon at a distance of at least 5.6 km (3 nm).

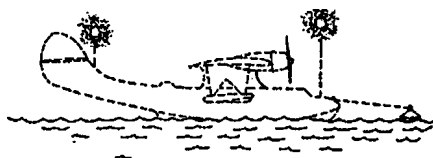


Figure 7

- (c) If 50 m or more in span a steady white light on each side (Figures 8 and 9) to indicate the maximum span and visible, so far as practicable, all around the horizon at a distance of at least 1.9 km (1 nm).

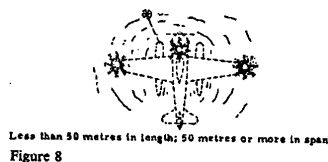


Figure 8

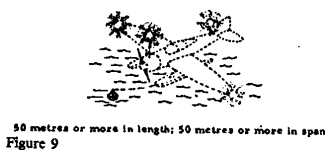


Figure 9

- (8) When aground

The lights prescribed in paragraph (7) and in addition two steady red lights in vertical line, at least 1 m apart so placed as to be visible all around the horizon.

127.11.10 SIGNALS

1. Distress signals

- (1) The following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:
 - (a) A signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (. . . _ _ _ . . . in the Morse Code);
 - (b) a signal sent by radiotelephony consisting of the spoken word MAYDAY;
 - (c) rockets or shells throwing red lights, fired one at a time at short intervals;
 - (d) a parachute flare showing a red light.
- (2) Alarm signals for actuating radiotelegraph and radiotelephone auto-alarm systems:
- (3) The radiotelegraph alarm signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. It may be transmitted by hand but its transmission by means of an automatic instrument is recommended.
- (4) The radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone has a frequency of 2 200 Hz and the other a frequency of 1 300 Hz, the duration of each tone being 250 milliseconds.
- (5) The radiotelephone alarm signal, when generated by automatic means, must be sent continuously for a period of at least thirty seconds but not exceeding one minute; when generated by other means, the signal must be sent as continuously as practicable over a period of approximately one minute.

- (6) None of the provisions in this paragraph prevent the use, by an aircraft in distress, of any means at its disposal to attract attention, make known its position and obtain help.

2. Urgency signals

- (1) The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:
- (a) The repeated switching on and off of the landing lights; or
 - (b) the repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.
- (2) The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:
- (a) A signal made by radiotelegraphy or by any other signalling method consisting of the group XXX;
 - (b) a signal sent by radiotelephony consisting of the spoken words PAN, PAN.
- (3) None of the provisions in this paragraph prevent the use, by an aircraft in distress, of any means at its disposal to attract attention, make known its position and obtain help.

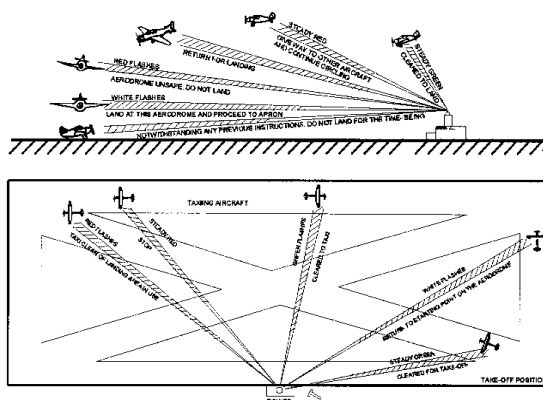
3. Visual signals used to warn an unauthorised aircraft flying in, or about to enter a restricted, prohibited or danger area

By day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an unauthorised aircraft that it is flying in or about to enter a restricted, prohibited or danger area, and that the aircraft is to take such remedial action as may be necessary.

4. Signals for aerodrome traffic

- (1) Light and pyrotechnic signals
- (a) Instructions

Light	From aerodrome control to		
	Aircraft in flight	Aircraft on the ground	
Directed towards aircraft concerned (see Figure 1.1)	Steady green	Cleared to land	Cleared for take-off
	Steady red	Give way	Stop
	Series of green flashes	Return for landing*	Cleared to taxi
	Series of red flashes	Aerodrome at this aerodrome and proceed to apron*	Taxi clear of landing area in use
	Series of white flashes	Notwithstanding any previous instructions, do not land for the time being	Return to starting point on the aerodrome
	Steady red on final approach		
* Clearance to land and to taxi will be given in due course.			



(a) Acknowledgement by aircraft

(i) When in flight:

1. During the hours of daylight:

by rocking the aircraft's wings;

Note: This signal should not be expected on the base and final legs of the approach

2. during the hours of darkness:

by flashing on and off twice the aircraft's landing lights, or if not so equipped, by switching on and off twice its navigation lights;

(ii) when on the ground:

1. During the hours of daylight:

by moving the aircraft's ailerons or rudder;

2. during the hours of darkness:

by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

(2) Visual ground signals

(a) Prohibition of landing

A horizontal red square panel with yellow diagonals (Figure 1.2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.

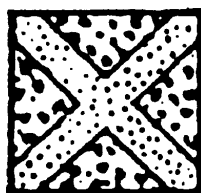


Figure 1.2

(b) Need for special precautions while approaching or landing

A horizontal red square panel with one yellow diagonal (Figure 1.3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions must be observed in approaching to land or in landing.

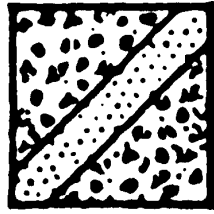


Figure 1.3

(c) Use of runways and taxiways

1. A horizontal white dumb-bell (Figure 1.4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

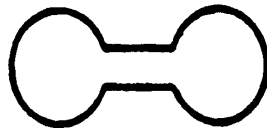


Figure 1.4

2. The same horizontal white dumb-bell as in Figure 1.4 but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure 1.5) when displayed in a signal area indicates that aircraft are required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways.

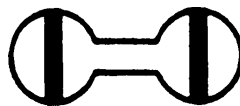


Figure 1.5

(d) Closed runways or taxiways

Crosses of a single contrasting colour, yellow or white (Figure 1.6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft

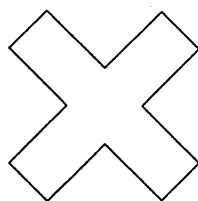


Figure 1.6

(e) Directions for landing or take-off

1. A horizontal white or orange landing T (Figure 1.7) indicates the direction to be used by aircraft for landing and take-off, which must be in a direction parallel to the shaft of the T towards the cross arm.

Note: When used at night, the landing T is either illuminated or outlined in white coloured lights

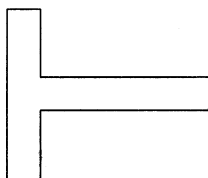


Figure 1.7

- X A set of two digits (Figure 1.8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.



Figure 1.8

(f) Right-hand traffic

When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure 1.9) indicates that turns are to be made to the right before landing and after take-off.

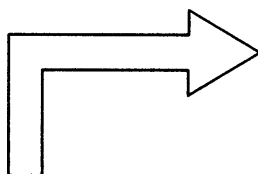


Figure 1.9

(g) Air traffic services reporting office

The letter C displayed vertically in black against a yellow background (Figure 1.10) indicates the location of the air traffic services reporting office.

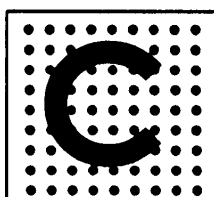


Figure 1.10

(h) Glider flights in operation

A double white cross displayed horizontally (Figure 1.11) in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

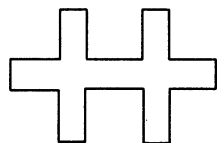


Figure 1.11

(i) Agricultural flights in operation

A figure A (figure 1.12) in the signal area indicates that the aerodrome is being used for agricultural flights.

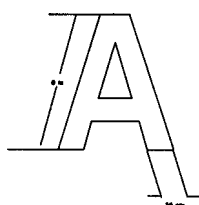


Figure 1.12

5. Marshalling signals

(i) From a signalman to an aircraft

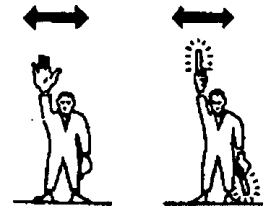
Prior to using the following signals, the signalman must ascertain that the area within which an aircraft to be guided is clear of objects which the aircraft, in complying with this technical standard, might otherwise strike.

Note: The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.

5. Marshalling signals

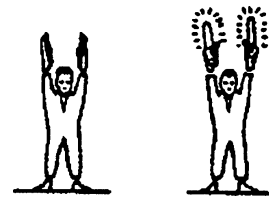
1. Proceed under further guidance by signalman

Signalman directs pilot if traffic conditions on aerodrome require this action.



2. This bay

Arms above head in vertical position with palms facing inward.



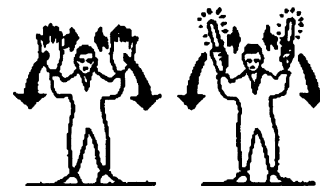
3. Proceed to next signalman

Right or left arm down, other arm moved across the body and extended to indicate direction of next signalman.



4. Move ahead

Arms a little aside, palms facing backward and repeatedly moved upward-backward from shoulder height.



5. Turn

(a) Turn to your left: right arm downward, left are repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.

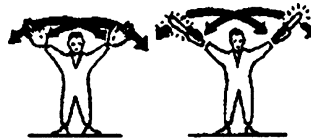


(b) Turn to your right: left arm downward, right arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.



6. Stop

Arms repeatedly crossed above head (the rapidity of the arm movement should be related to the urgency of the stop, i.e. the faster the movement the quicker the stop).

**7. Brakes**

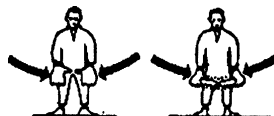
(a) Engage brakes: raise arm and hand, with fingers extended, horizontally in front of body, then clench fist.



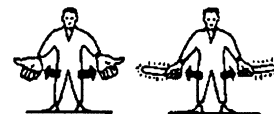
(b) Release brakes: raise arm, with fist clenched, horizontally in front of body, then extend fingers.

**8. Chocks**

(a) Chocks inserted: arms down, palms facing inwards, move arms from extended position inwards.



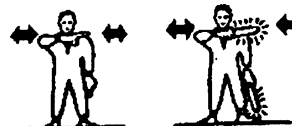
(b) Chocks removed: arms down, palms facing outwards, move arms outwards.

**9. Start engine(s)**

Left hand overhead with appropriate number of fingers extended, to indicate the number of the engine to be started, and circular motion of right hand at head level.

**10. Cut engines**

Either arm and hand level with shoulder, hand across throat, palm downward. The hand is moved sideways with the arm remaining bent.

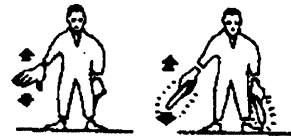
**11. Slow down**

Arms down with palms toward ground, then moved up and down several times.



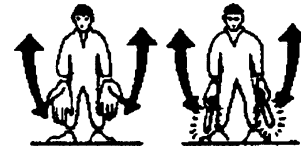
12. Slow down engine(s) on indicated side

Arms down with palms toward ground, then either right or left hand waved up and down indicating the left or right side engine(s) respectively should be slowed down.



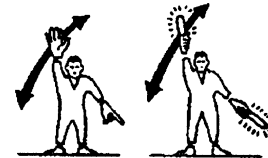
13. Move back

arms by sides, palms facing forward, swept forward and upward repeatedly to shoulder height.

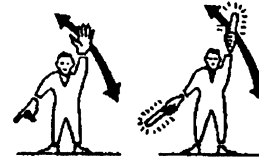


14. Turns while backing

(a) For tail to starboard: point left arm down, and right arm brought from overhead, vertical position to horizontal forward position, repeating right arm movement.

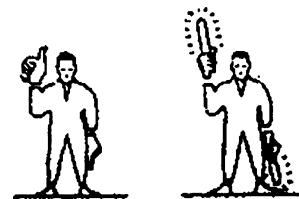


(b) For tail to port: point right arm down, and left arm brought from overhead, vertical position to horizontal forward position, repeating left arm movement.



15. All clear

Right arm raised at elbow with thumb erect.



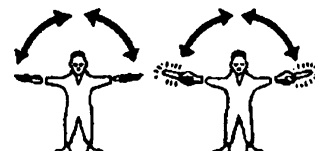
16. Hover*

Arms extended horizontally sideways.



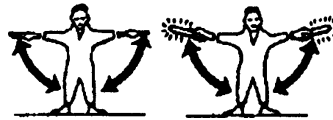
17. Move upwards*

Arms extended horizontally to the side beckoning upwards, with palms turned up. Speed of movement indicates rate of ascent.



18. Move downwards*

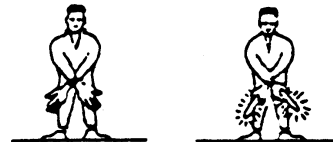
Arms extended horizontally to the side beckoning downwards, with palms turned down. Speed of movement indicates rate of descent.

**19. Move horizontally***

Appropriate arm extended horizontally sideways in direction of movement and other arm moved in front of body in same direction, in a repeating movement.

**20. Land***

Arms crossed and extended downwards in front of the body.



Notes:1. *These signals are designed for use by the signalman, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position:*

- (a) *For fixed-wing aircraft, forward of the left-wing tip within view of the pilot; and*
- (b) *for helicopters, where the signalman can best be seen by the pilot.*

- 2. *The meaning of the relevant signals remains the same if bats, illuminated wands or torchlights are held.*
- 3. *The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).*
- 4. *Signals marked with an asterisk are designed for use to hovering helicopter*

(2) From the pilot of an aircraft to a signal-man

- (a) Brakes

Note: *The moment the fist is clenched or the fingers are extended indicates, respectively, the moment of brake engagement or release.*

- (i) Brakes engaged
- (ii) Raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.

(iii) Brakes released

Raise arm, with fist clenched, horizontally in front of face, then extend fingers.

(b) Chocks

(i) Insert chocks

Arms extended, palms out-wards, move hands inwards to cross in front of face.

(ii) Remove chocks

Hands crossed in front of face, palms outwards, move arms outwards.

(c) Ready to start engine

Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

Note: 1. These signals are designed for use by a pilot in the cockpit with hands plainly visible to the signalman, and illuminated as necessary to facilitate observation by the signalman.

2. The aircraft engines are numbered in relation to the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).

127.11.13 MANDATORY RADIO COMMUNICATION IN CONTROLLED AIRSPACE

1. Radio communication failure procedures

The radio communication failure procedures referred to in CAR 127.11.13, are the procedures contained in Chapter 5 of Annex 10, Volume II.

127.11.14 MANDATORY RADIO COMMUNICATION IN ADVISORY AIRSPACE

1. Radio communication failure procedures

The radio communication failure procedures referred to in CAR 127.11.14, are the procedures contained in Chapter 5 of Annex 10, Volume II.

127.11.18 VISIBILITY AND DISTANCE FROM CLOUD

1. Conditions of visibility and distance from cloud

Airspace class	B	C D E	F G
			ABOVE 900m (3 000 ft) AMSL or above 300 m (1 000 ft) above terrain, whichever is the higher.
			At and below 900 m (3 000ft) AMSL or 300 m (1 000 ft) above terrain, whichever is the higher.
Distance from cloud	Clear of cloud	1 500 m horizontally 300 m (1 000 ft) vertically	Clear of cloud and in sight of the surface
Flight visibility	8 km at and above 3 050 m (10 000 ft) AMSL 5 km below 3 050 m (10 000 ft) ASML		5 km

127.11.28 SEMI-CIRCULAR RULE**1. Semi-circular rule**

MAGNETIC TRACK			
Flight level			
From 000° to 179°		From 180° to 359°	
IFR	VFR	IFR	VFR
30	15	20	24
50	35	40	45
70	55	60	65
90	75	80	85
110	95	100	105
130	115	120	125
150	135	140	145
170	155	160	165
190	175	180	185
210	195	200	
230		220	
250		240	
270		260	
290		280	
330		310	
370		350	
410		390	
450		430	
490		470	
etc.		510	
		etc.	

127.12.4 TRAINING AND QUALIFICATIONS FOR LOW-VISIBILITY OPERATIONS**1. General**

- (1) The operator must ensure that flight crew member training programmes for low-visibility operations include structured courses of ground, simulator and/or flight training. The operator may abbreviate the course content as prescribed in subparagraphs (2), (3) and (4) below, if the content of the abbreviated course is approved by the Director.
- (2) Flight crew members with no Category II or Category III experience, must complete the full training programme prescribed in paragraphs 2, 3 and 4 below.
- (3) Flight crew members with Category II or Category III experience with another operator, may undertake an abbreviated ground training course.
- (4) Flight crew members with Category II or Category III experience with the operator, may undertake an abbreviated ground simulator and/or flight training course. The abbreviated course is to include at least the requirements of paragraph 4(1) or 4(4)(a) or (b), as appropriate.

2. Ground training

The operator must ensure that the initial ground training course for low-visibility operations covers at least -

- (1) the characteristics and limitations of the ILS and/or MLS;

- (2) the characteristics of the visual aids;
- (3) the characteristics of fog;
- (4) the operational capabilities and limitations of the particular airborne system;
- (5) the effects of precipitation, ice accretion, low level wind shear and turbulence;
- (6) the effect of specific helicopter malfunctions;
- (7) the use and limitations of RVR assessment systems;
- (8) the principles of obstacle clearance requirements;
- (9) recognition of and action to be taken in the event of failure of ground equipment;
- (10) the procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m;
- (11) the significance of decision heights based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems;
- (12) the importance and significance of alert height, if applicable, and the action in the event of any failure above and below the alert height;
- (13) the qualification requirements for pilots to obtain and retain approval to conduct low-visibility take-offs and Category II or III operations; and
- (14) the importance of correct seating and eye position.

3. Simulator training and/or flight training

- (1) The operator must ensure that simulator and/or flight training for low-visibility operations includes -
 - (a) checks of satisfactory functioning of equipment, both on the ground and in flight;
 - (b) effect on minima caused by changes in the status of ground installations;
 - (c) monitoring of automatic flight control systems and Autoland status annunciators with emphasis on the action to be taken in the event of failures of such systems;
 - (d) actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems;
 - (e) the effect of known unserviceabilities and use of minimum equipment lists;
 - (f) operating limitations resulting from airworthiness certification;
 - (g) guidance on the visual cues required at decision height together with information on maximum deviation allowed from glidepath or localiser; and
 - (h) the importance and significance of alert height, if applicable, and the action in the event of any failure above and below the alert height.

- (2) The operator must ensure that each flight crew member is trained to carry out his or her duties and instructed on the coordination required with other flight crew members. Maximum use must be made of suitably equipped simulators for this purpose.
- (3) Training must be divided into phases covering normal operation with no helicopter or equipment failures but including all weather conditions which may be encountered and detailed scenarios of helicopter and equipment failure which could affect Category II or III operations. If the helicopter system involves the use of hybrid or other special systems (such as head up displays or enhanced vision equipment), flight crew members must practise the use of these systems in normal and abnormal modes during the simulator phase of training.
- (4) Incapacitation procedures appropriate to low-visibility take-offs and Category II and III operations must be practised.
- (5) For helicopters with no type specific simulator, operators must ensure that the flight training phase specific to the visual scenarios of Category II operations is conducted in a simulator approved for that purpose by the Director. Such training must include a minimum of 4 approaches. The training and procedures that are type specific must be practised in the helicopter.
- (6) Category II and III training must include at least the following exercises:
 - (a) Approach, using the appropriate flight guidance, autopilots and control systems installed in the helicopter, to the appropriate decision height and to include transition to visual flight and landing;
 - (b) approach with all engines operating using the appropriate flight guidance systems, autopilots and control systems installed in the helicopter down to the appropriate decision height followed by missed approach, all without external visual reference;
 - (c) where appropriate, approaches utilising automatic flight systems to provide automatic flare, hover, landing and roll-out; and
 - (d) normal operation of the applicable system both with and without acquisition of visual cues at decision height.
- (7) Subsequent phases of training must include at least -
 - (a) approaches with engine failure at various stages on the approach;
 - (b) approaches with critical equipment failures (e.g. electrical systems, autoflight systems, ground and/or airborne ILS/MLS systems and status monitors);
 - (c) approaches where failures of autoflight equipment at low level require either -
 - (i) reversion to manual flight to control flare, hover, landing and roll out or missed approach; or
 - (ii) reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below decision height including those which may result in a touchdown on the touchdown and lift-off area;

- (d) failures of the system which will result in excessive localiser and/or glideslope deviation, both above and below decision height, in the minimum visual conditions authorised for the operation. In addition, a continuation to a manual landing must be practised if a head-up display forms a downgraded mode of the automatic system or the head-up display forms the only flare mode; and
 - (e) failures and procedures specific to helicopter type or variant.
- (8) The training programme must provide practice in handling faults which require a reversion to higher minima.
 - (9) The training programme must include the handling of the helicopter when, during a fail passive Category III approach, the fault causes the autopilot to disconnect at or below decision height when the last reported RVR is 300 m or less.
 - (10) Where take-offs are conducted in RVRs of 400 m and below, training must be established to cover systems failures and engine failure resulting in continued as well as rejected take-offs.

4. Conversion training requirements to conduct low-visibility take-off and Category II and III operations

The operator must ensure that each flight crew member completes the following low-visibility procedures training if converting to a new type or variant of helicopter in which low-visibility take-off and Category II and III operations will be conducted. The flight crew member experience requirements to undertake an abbreviated course are prescribed in paragraphs 1(3) and (4).

(1) Ground training

The appropriate requirements prescribed in paragraph 2 above, taking into account the flight crew member's Category II and Category III training and experience.

(2) Simulator training and/or flight training

- (a) A minimum of 8 approaches and/or landings in a simulator approved for the purpose.
- (b) Where no type-specific simulator is available, a minimum of 3 approaches, including at least 1 go-around, in the helicopter.
- (c) Appropriate additional training if any special equipment is required such as head-up displays or enhanced vision equipment.

(3) Flight crew qualification

The flight crew qualification requirements are specific to the operator and the type of helicopter operated.

- (a) The operator must ensure that each flight crew member completes a check before conducting Category II or III operations.
- (b) The check prescribed in item (a) above may be replaced by successful completion of the simulator and/or flight training prescribed in paragraph 4(2).

(4) Line flying under supervision

The operator must ensure that each flight crew member undergoes the following line flying under supervision -

- (a) For Category II when a manual landing is required, a minimum of 3 landings from autopilot disconnect; and
- (b) for Category III, a minimum of 3 autolands except that only 1 autoland is required when the training required in paragraph 4(2) above, has been carried out in a full flight simulator usable for zero flight time training.

5. Type and command experience

The following additional requirements are applicable to pilots-in-command who are new to the helicopter type:

- (1) 50 hours or 20 sectors as pilot-in-command on the type before performing any Category II or Category III operations; and
- (2) 100 hours or 40 sectors as pilot-in-command on the type. 100 m must be added to the applicable Category II or Category III RVR minima unless he or she has previously qualified for Category II or III operations with another operator.
- (3) The Director may authorise a reduction in the above command experience requirements for flight crew members who have Category II or Category III command experience.

6. Low-visibility take-off with RVR less than 150 m

- (1) The operator must ensure that prior to authorisation to conduct take-offs in RVRs below 150, the following training is carried out:
 - (a) Normal take-off in minimum authorised RVR conditions;
 - (b) take-off in minimum authorised RVR conditions with an engine failure at or after TDP; and
 - (c) take-off in minimum authorised RVR conditions with an engine failure before the TDP.
- (2) The operator must ensure that the training required in subparagraph (1) above, is carried out in a simulator. This training must include the use of any special procedures and equipment. Where no simulator exists, the Director may approve such training in a helicopter without the requirement for minimum RVR conditions.
- (3) The operator must ensure that a flight crew member has completed a check before conducting low-visibility take-offs in RVRs of less than 150 m, if applicable. The check may only be replaced by successful completion of the simulator and/or flight training prescribed in subparagraph (1) on initial conversion to a helicopter type.

7. Recurrent training and checking - Low-Visibility Operations

- (1) The operator must ensure that, in conjunction with the normal recurrent training and proficiency checks, a pilot's knowledge and ability to perform the tasks associated with the particular category of operation, including LVTO, for which he or she is authorised, is checked. The required number

of approaches to be conducted during such recurrent training is to be a minimum of two, one of which is to be a missed approach and at least one low-visibility take-off to the lowest applicable minima. The period of validity for this check is 6 months including the remainder of the month of issue.

- (2) For Category III operations, the operator must use a simulator approved for Category III training.
- (3) The operator must ensure that, for Category III operations on helicopters with a fail passive flight control system, a missed approach is completed at least once every 18 months as the result of an autopilot failure at or below decision height when the last reported RVR was 300 m or less.
- (4) The Director may authorise recurrent training for Category II operations in a helicopter type where no simulator is available.

8. LVTO and Category II or III recency requirements

- (1) The operator must ensure that, in order for pilots to maintain a Category II and Category III qualification, they have conducted a minimum of 3 approaches and landings using approved Category II or III procedures during the previous six months' period, at least one of which must be conducted in the helicopter.
- (2) Recency for LVTO is maintained by retaining the Category II or III qualification prescribed in subparagraph (1) above.
- (3) The operator may not substitute this recency requirement for recurrent training.

TABLE 1: MAXIMUM FLIGHT DUTY PERIOD: HELICOPTERS

Local time of start	Single-pilot		Two pilots	
	Maximum length of flying duty	Maximum flying time	Maximum length of flying duty	Maximum flying time
0500 - 1659	10	7	12	8
1700 - 0459	9	6	12	7

TABLE 2: CABIN CREW FLIGHT TRAINING SYLLABUS

	PI	PR	INITIAL	RE-CURRENT	RE-QUAL	A/C TYPE
AVIATION-GENERAL						
REGULATORY OVERVIEW						
Regulatory overview			!			
Legislation	!		!	!	!	
AVIATION TERMINOLOGY						
Terminology			!			
Terms of reference			!			
THEORY OF FLIGHT						
General helicopter description			!			
Aerodynamics of flight			!			
Meteorology			!			
Air traffic control			!			
PHYSIOLOGY OF FLIGHT						
General			!	!		
Effects of altitude			!	!		
COCKPIT OBSERVATION FLIGHT						
General	N/A	N/A	!	!		!
ROLES AND RESPONSIBILITIES						
OPERATOR						
Operating requirements			!	!		
Operations Manual	!	!	!	!		
CABIN CREW MEMBERS						
General	!		!	!	!	
DCA INSPECTORS						
General			!		!	
SAFETY PROCEDURES						
CREW COORDINATION						
General			!	!	!	
Crew coordination			!	!		
COMMUNICATIONS						
General			!	!	!	
Communication			!	!		
Passenger announcements	!		!			
SURFACE CONTAMINATION						
General			!	!		
Cabin crew member responsibilities			!	!		
De-Icing/anti-icing			!	!		
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	!	!	!			
Crew carry-on baggage			!			!
ELECTRONIC DEVICES						
General	!	!	!	!	!	

	PI	PR	INITIAL	RE-CURRENT	RE-QUAL	A/C TYPE
SERVICE TO PASSENGERS ON THE GROUND						
General			!			
Cabin crew member responsibilities			!	!	!	
FUELING WITH PASSENGERS ON BOARD						
General	!	!	!	!	!	
Crew member responsibilities			!	!	!	
PRE-TAKE-OFF AND PRE-LANDING						
Cabin preparation	!		!		!	
Cabin crew member responsibilities	!	!	!	!	!	
Abnormal situations	!	!	!	!	!	
PROPELLER ABNORMALITIES						
General			!	!	!	!
AERODROME SAFETY						
Hazards on aerodromes			!	!	!	
Cabin crew member responsibilities			!	!	!	
Helicopter operators			!	!	!	
TURBULENCE						
General			!	!	!	
Cabin crew member responsibilities			!	!	!	
CREW MEMBER INCAPACITATION						
General			!	!	!	
Pilot incapacitation	!		!	!	!	
Cabin crew member responsibilities			!	!	!	
COCKPIT 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 PRESURISATION PROBLEMS						
General	!	!	!	!	!	
Cabin crew member responsibilities	!	!	!	!	!	
EVACUATIONS						
General	!	!	!	!	!	
Cabin crew member responsibilities	!	!	!	!	!	
Evacuation procedures	!	!	!	!	!	
Post-evacuation	!	!	!	!	!	
Accident/Incident review	!	!	!	!	!	
EMERGENCY EQUIPMENT EQUIPMENT OVERVIEW						
General			!		!	

	PI	PR	INITIAL	RE-CURRENT	RE-QUAL	A/C TYPE
HELICOPTER 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			!	!	!	!
HEATING AND VENTILATION SYSTEMS						
General			!	!	!	!
EXISTS						
General			!	!	!	!
Normal operation			!	!	!	!
Abnormal operation			!	!	!	!
Emergency operation			!	!	!	!
Airstairs				!	!	!
UNIQUE FEATURES						
General			!	!	!	!
DRILLS						
PUBLIC ADDRESS SYSTEM AND INTERPHONE SYSTEM DRILLS						
Introduction	!		!		!	
Equipment criteria	!		!		!	
Performance criteria	!		!		!	
Evaluation criteria	!		!		!	
PASSENGER BRIEFING DRILL						
Equipment criteria	!		!	!	!	
Performance criteria	!		!	!	!	
Evaluation criteria	!		!	!	!	
HELICOPTER EXIST 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	!		!	!		
Evaluation criteria	!		!	!		
RAFT DRILL (WET OR DRY)						
Equipment criteria	X		!	!	!	
Performance criteria	X		!	!	!	

	PI	PR	INITIAL	RE-CURRENT	RE-QUAL	A/C TYPE
HELICOPTER SLIDE DRILL						
Equipment criteria			!	!		!
Performance criteria			!	!		!
FIRE FIGHTING DRILLS						
General	!	!	!	!		
Equipment criteria	!	!	!	!		
Equipment practice performance criteria	!	!	!	!		
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	X	X	!		!	
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	!	!	!	!	!	

*Annexure A***PILOT-IN-COMMAND'S DESCRETION REPORT****SECTION 1: EXTENSION OF FLIGHT TIME AND DUTY PERIOD****Part A:** Operator

Helicopter 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
Start of duty				Duty started		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
FDP to end				FDP to end		
Schedule FDP				Actual FDP		
				Maximum permitted FDP		

Part C: Pilot-in-command's report giving reasons

Signed :

Date :

Operator's remarks / Action taken

Signed :

Date :

Forwarded to DCA Namibia

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

Flight number

Aircraft type

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 :

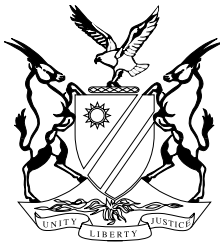
Operator's remarks/action

Signed :

Date :

Forwarded to DCA Namibia

Filed

Annexure B**REPUBLIC OF NAMIBIA****CIVIL AVIATION**

**APPLICATION FOR THE ISSUING OF AN AIR OPERATOR CERTIFICATE
APPLICATION FOR THE AMENDMENT OF AN AIR OPERATOR
CERTIFICATE
APPLICATION FOR THE RENEWAL OF AN AIR OPERATOR CERTIFICATE**

Notes:

- (i) *An application for the issuing of an air operator certificate, or an amendment thereof, must comply with the provisions of CAR 127.06.5.*
- (ii) *An application for the renewal of an air operator certificate, must comply with the provisions of CAR 127.06.15.*
- (iii) *Section 1 must be completed in all cases.*
- (iv) *All other sections must be completed if applicable to the specific application.*
- (v) *The original application must be submitted to the Director: Civil Aviation.*
- (vi) *Where the required information cannot be furnished in the space provided, the information must be submitted as a separate memorandum and attached hereto.*
- (vii) *Please delete if not applicable.*

Mark the appropriate block

- Application for the issuing of an air operator certificate
- Application for the amendment of an air operator certificate
- Application for the renewal of an air operator certificate

1. PARTICULARS REGARDING THE APPLICANT

1.1 Full name :

1.2 Trade name, if any :

1.3 Principal place of business:
.....
.....
.....
.....

1.4 Postal address :
.....
.....
.....
Postal code

1.5 Telephone number :	1.6 Telefax number :
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1.7 Cell phone number :	1.8 E-mail address:
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1.9 SITA code (if any) :	1.10 Telex number :
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1.11 Legal status of applicant/holder (individual/close corporation/company/trust/other - specify:

1.12 Registration number in the case of a close corporation/company/trust:

1.13 Full particulars in respect of the individual/each responsible director/shareholder/partner/member/office bearer:

Name	Position	Identity Number	Nationality	Country of permanent residence
.....
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.....
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.....
.....
.....

1.14 The applicant/holder declares hereby that the particulars provided in this application are true in every respect.

.....
 Signature Date

2. APPLICATION FOR THE ISSUING OF AN AIR OPERATOR CERTIFICATE

2.1 Description of the type(s) of operation(s) applied for:

2.2 Type(s) of helicopter(s) to be operated:

2.3 Nationality and registration mark(s) of the helicopter(s) to be operated:

2.4 Proposed area(s) of operation:

2.5 Attached documents:
 Mark the appropriate block

- Operations manual
- Proof of financial capability
- Maintenance management manual
- Helicopter maintenance programme
- Helicopter technical log
- Maintenance arrangements between applicant and approved aircraft maintenance organisation

3. APPLICATION FOR THE AMENDMENT OF AN AIR OPERATOR CERTIFICATE

3.1 Certificate number:	3.2 Expiry date :
-------------------------------	-------------------------

3.3 Particulars of amendment(s) applied for :

<p>3.4 Attached documents :</p> <p>Mark the appropriate block</p> <p><input type="checkbox"/> Amendment to approved operations manual</p> <p><input type="checkbox"/> Proof of financial capability in respect of amendment</p> <p><input type="checkbox"/> Amended maintenance management manual</p> <p><input type="checkbox"/> Amendment to approved helicopter maintenance programme</p> <p><input type="checkbox"/> Amendment to approved helicopter technical log</p> <p><input type="checkbox"/> Maintenance arrangements between holder and approved aircraft maintenance organisation in respect of amendment</p>
--

4. APPLICATION FOR THE RENEWAL OF AN AIR OPERATOR CERTIFICATE

4.1 Certificate number :	4.2 Expiry date :
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4.3 Description of the type(s) of operation(s) applied for:

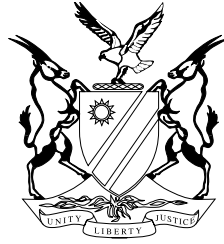
4.4 Type(s) of helicopter(s) to be operated:
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4.5 Nationality and registration mark(s) of the helicopter(s) to be operated:

4.6 Proposed area(s) of operation:
--

<p>4.7 Supporting documents :</p> <p>Mark the appropriate block</p> <p><input type="checkbox"/> Operations manual</p> <p><input type="checkbox"/> Proof of financial capability</p> <p><input type="checkbox"/> Maintenance management manual</p> <p><input type="checkbox"/> Helicopter maintenance programme</p> <p><input type="checkbox"/> Helicopter technical log</p> <p><input type="checkbox"/> Maintenance arrangements between holder and approved aircraft maintenance organisation</p>
--

Annexure C



REPUBLIC OF NAMIBIA

CIVIL AVIATION

AIR OPERATOR CERTIFICATE

1. Certificate number:

2. Name of holder :

3. Principal place of business of holder :	4. Postal address of holder: Postal Code
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5. Type(s) of operation(s) authorised:	6. Type(s) of helicopter(s) authorised for operation:
---	--

7. Nationality and registration mark(s) of helicopter(s) authorised for operation:
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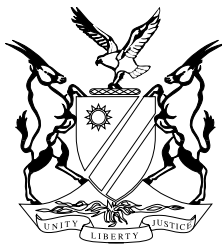
8. Area(s) of operation:

9. Conditions:

10. Date issued:	11. Expiry date:
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12. Date renewed:	13. Expiry date:
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14. I hereby certify that the holder of this certificate has been duly certificated in accordance with Part 127 of the Namibian Civil Aviation Regulations, 2001.	
15. Any attachment to this certificate which supplements its contents, forms an integral part hereof.	
..... Signature Date

Annexure D**REPUBLIC OF NAMIBIA****CIVIL AVIATION**

**APPLICATION FOR THE ISSUING OF A FOREIGN AIR OPERATOR
PERMIT
APPLICATION FOR THE AMENDMENT**

Notes:

- (i) *An application for the issuing of a foreign air operator permit, or an amendment thereof, must comply with the provisions of CAR 127.07.2.*
- (ii) *An application for the renewal of a foreign air operator permit, must comply with the provisions of CAR 127.07.7.*
- (iii) *Section 1 must be completed in all cases.*
- (iv) *All other sections must be completed if applicable to the specific application.*
- (v) *The original application must be submitted to the Director: Civil Aviation.*
- (vi) *Where the required information cannot be furnished in the space provided, the information must be submitted as a separate memorandum and attached hereto.*
- (vii) *Please delete if not applicable.*

Mark the appropriate block

- Application for the issuing of a foreign air operator permit
- Application for the amendment of a foreign air operator permit
- Application for the renewal of a foreign air operator permit

1. PARTICULARS REGARDING THE APPLICANT/HOLDER

1.1	Full name :
-----	-------------------

1.2	Trade name, if any :
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1.3 Full business/residential address: 	1.4 Postal address : Postal code
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1.5 Telephone number :	1.6 Telefax number :
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1.7 Cell phone number :	1.8 E-mail address:
-------------------------------	---------------------------

1.9 SITA code (if any) :	1.10 Telex number :
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1.11 Legal status of applicant/holder (individual/close corporation/company/trust/other - specify:

1.12 Registration number in the case of a close corporation/company/trust:

1.13 Full particulars in respect of the individual/each responsible director/shareholder/partner/member/office bearer:

Name	Position	Identity Number	Nationality	Country of permanent residence
.....
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1.14 The applicant/holder declares hereby that the particulars provided in this application are true in every respect.

.....
Signature

.....
Date

2. APPLICATION FOR THE ISSUING OF A FOREIGN AIR OPERATOR PERMIT

2.1 Description of the type(s) of operation(s) applied for:

2.2 Type(s) of helicopter(s) to be operated:

2.3 Nationality and registration mark(s) of the helicopter(s) to be operated:

2.4 Proposed area(s) of operation:

2.5 Attached documents:
 Mark the appropriate block

Declaration of competency

Copy of valid air operator certificate/equivalent authorisation

Statement certifying the availability of insurance

3. APPLICATION FOR THE AMENDMENT OF A AIR OPERATOR CERTIFICATE

3.1 Certificate number:	3.2 Expiry date :
-------------------------------	-------------------------

3.3 Particulars of amendment(s) applied for :

<p>3.4 Attached documents : Mark the appropriate block</p> <p><input type="checkbox"/> Declaration of competency</p> <p><input type="checkbox"/> Copy of air operator certificate/equivalent authorisation</p> <p><input type="checkbox"/> Statement certifying the availability of insurance</p>

4. APPLICATION FOR THE RENEWAL OF A FOREIGN AIR OPERATOR PERMIT

4.1 Certificate number :	4.2 Expiry date :
--------------------------------	-------------------------

4.3 Description of the type(s) of operation(s) applied for:

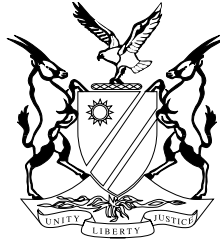
4.4 Type(s) of helicopter(s) to be operated:
--

4.5 Nationality and registration mark(s) of the helicopter(s) to be operated:

4.6 Proposed area(s) of operation:
--

<p>4.7 Supporting documents : Mark the appropriate block</p> <p><input type="checkbox"/> Declaration of competency</p> <p><input type="checkbox"/> Copy of valid air operator certificate/equivalent authorisation</p> <p><input type="checkbox"/> Statement certifying the availability of insurance</p>

Annexure E



REPUBLIC OF NAMIBIA

CIVIL AVIATION

FOREIGN AIR OPERATOR PERMIT

1. Permit number:

2. Name of holder :

3. Principal place of business of holder :	4. Postal address of holder: Postal Code
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5 Type(s) of operation(s) authorised:	6 Type(s) of helicopter(s) authorised for operation:
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7 Nationality and registration mark(s) of helicopter(s) authorised for operation:

8. Area(s) of operation:

9. Conditions:

10. Date issued:	11. Expiry date:
------------------------	------------------------

12. Date renewed:	13. Expiry date:
-------------------------	------------------------

14. I hereby certify that the holder of this certificate has been duly certificated in accordance with Part 127 of the Namibian Civil Aviation Regulations, 2001.	
15. Any attachment to this certificate which supplements its contents, forms an integral part hereof.	
..... Signature Date