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NON-COMMERCIAL COMPLEX AEROPLANE OPERATIONS

LIST OF REGULATIONS

SUBPART 1: GENERAL

93.01.1 Applicability

(1) Subject to the provisions of sub-regulation (2), this Part applies to an operation of an aircraft registered in Namibia that is used in corporate aviation operation if an operation involves a use of three or more aircraft, of which at least two aircraft conform to the following requirements:

(a) an aeroplane with a MCM exceeding 5 700kg, or a helicopter which has a MCM exceeding 3 180kg; or

(b) an aircraft which is equipped with one or more turbine powered engines.

(2) This Part does not apply to -

(a) NTCA or an aircraft that is required to be operated under Part 121, 127, 135 or 141 of these regulations;

(b) aircraft sales company or aircraft sales division of an organisation when dealing with the following operations-

(i) positioning flight;

(ii) flight for demonstration; and

(iii) flight for a customer with a sole purpose of selling an aircraft.

(3) A person operating under this Part shall also comply with all provisions of Part 61 and 91.

SUBPART 2: OPERATIONS PERSONNEL REQUIREMENTS

Division One: Flight crew member qualifications and requirements

93.02.1 Composition of flight crew

(1) A CAO shall, when a type of operation so requires, allocate additional flight crew members as specified in its operations manual.

(2) A flight crew shall include at least one member who is proficient in navigating over a route to be flown using equipment required for such navigation.

(3) A CAO shall designate a PIC for each flight.

(4) When a separate flight engineer's station is incorporated in a design of an aircraft, at least one flight engineer should be assigned to that station, unless the duties associated with that station can be satisfactorily performed by another flight crew member, holding a flight engineer license issued in terms of Part 63 of these regulations, without interference with that flight engineer's regular duties.

93.02.2 Minimum requirements for assignment as PIC

(1) CAO shall develop and publish requirements for minimum flight time for assignment and operating experience for a PIC as prescribed in Document NAM-CATS 93.

(2) Requirements for flight time assignment and operating experience referred to in sub-regulation (1) shall be incorporated in an operations manual.

93.02.3 Flight crew member emergency duties

(1) A flight crew member shall not accept an assignment of emergency duties on an aircraft unless such flight crew member has been instructed in the performance of such emergency duties and has undergone the required initial and recurrent training in accordance with subpart 3 of this Part.

(2) A CAO's training programme shall include -

(a) instructions in the use of all emergency and lifesaving equipment required to be carried on board an aircraft; and;

(b) aircraft emergency evacuation drill.

93.02.4 Area, route and aerodrome familiarisation

(1) CAO shall establish and implement procedures to ensure that a PIC is familiar with an area, route and aerodrome over or into which he or she is to operate.

(2) Procedures referred to in sub-regulation (1) shall be incorporated in an operations manual.

93.02.5 Flight crew member qualifications

(1) Subject to sub-regulation (4), an operator shall not assign a person to act and no person shall act as the PIC or second-in-command of an aircraft unless the person-

(a) is the holder of valid licence, rating and certificate appropriate to his or her assignment; and

(b) has completed the training and checking requirements specified in subpart 3 as appropriate to the intended flight.

(2) A pilot who does not meet the recency requirements of regulation 91.02.4 or whose training and checking validity periods have lapsed, shall regain competency only after satisfying the regaining competency requirements specified in subpart 3 of this Part.

(3) Where a person does not meet the requirements of sub-regulation (1), a CAO may only permit such person to act as a PIC or second-in-command of an aircraft when operated for training, ferry or positioning flight.

Division Two: Requirements for personnel other than flight crew

93.02.6 Requirement for flight followers

(1) A CAO shall define its standards to ensure that a person responsible for flight following is suitably qualified and competent.

(2) Standards referred to in sub-regulation (1) shall be incorporated in an operations manual.

93.02.7 Ground personnel qualifications

(1) A CAO shall, when necessary, employ ground personnel to provide essential ground support services appropriate to aircraft and type of service being operated.

(2) A CAO shall ensure a person assigned to provide direct service to an aircraft or any passenger, cargo or mail intended to be carried aboard such aircraft, is trained and qualified as appropriate to his or her assignment.

93.02.8 Cabin crew member complement

(1) An aircraft certified to carry more than 19 passengers may not be operated with a passenger on board unless-

(a) one or more cabin crew members have been assigned to duty; and

(b) a minimum number of cabin crew members assigned to a flight is not less than that prescribed in Document NAM-CATS 121, notwithstanding the actual number of passengers on board an aircraft.

(2) Notwithstanding the provisions of sub-regulation (1) and taking into account a size, complexity and physical layout of an aircraft, the Executive Director may, notwithstanding an aircraft's certificated seating capacity-

(a) require one or more cabin crew members licensed in terms of Part 64 to be assigned to duty; or

(b) require an operator to demonstrate a capability to provide an equivalent level of safety as would be achieved under paragraph (a).

(3) A cabin crew member shall give priority to performance of duties relating to safety of passengers as may be assigned by an operator or a PIC.

(4) In unforeseen circumstances, an operator may reduce a required minimum number of cabin crew members: provided that a number of passengers has been reduced in accordance with procedures specified in its operations manual and shall file a report with the Executive Director after completion of that flight.

(5) Where a cabin crew member is not legally required, a PIC shall remain responsible for all safety related duties and shall conduct safety briefing and notify passengers that he or she is ultimately responsible for the use of all safety or emergency equipment.

93.02.9 Operation on more than one type or variant by cabin crew member

(1) A cabin crew member may not operate on more than three aircraft types unless otherwise authorized by the Executive Director.

(2) The Executive Director may only approve an operation on a fourth aircraft type for a crew member if at least two of aircraft types concerned have similar emergency and safety equipment and procedures and based on factors prescribed in Document NAM-CATS 121.

93.02.10 Senior cabin crew member

(1) A CAO shall appoint a senior cabin crew member whenever more than one cabin crew members are carried on board an aircraft operated under this Part.

(2) A senior cabin crew member shall be responsible to the PIC for the conduct of cabin operations and co-ordination and performance of safety duties.

(3) A CAO shall establish procedures to select a qualified cabin crew member to operate as senior cabin crew member in an event a nominated senior cabin crew member is unable to perform his or her duties.

93.02.11 Cabin crew member emergency duties

(1) A CAO, and where appropriate, a PIC shall assign to each cabin crew member necessary functions to be performed in an emergency or a situation requiring emergency evacuation.

(2) Assignment of functions referred to in sub-regulation (1) shall ensure that any reasonably anticipated emergency can be adequately dealt with and shall take into consideration a possible incapacitation of individual flight and cabin crew member.

(3) A CAO shall submit proof to the Executive Director that adequate procedures to accomplish an evacuation required by regulation 91.02.2 have been adopted and demonstration has been carried out in accordance with the requirements prescribed in Document NAM-CATS 121.

(4) A CAO shall carry out an emergency evacuation demonstration referred to in sub-regulation (3) when a new type or variant of aircraft or new configuration of an existing aircraft is introduced for use and has not been certified under a certification process prescribed in Document NAM-CATS 121.

(5) Passengers may not be carried in an aircraft unless an operator has first conducted, to the satisfaction of the Executive Director, an actual full-capacity emergency evacuation demonstration for that aircraft type, model and configuration in 90 seconds or less.

(6) The Executive Director may approve a partial-Capacity demonstration in lieu of a full-capacity demonstration where an operator can produce evidence that-

(7) a satisfactory full-capacity emergency evacuation for an aircraft to be operated was demonstrated during an aircraft type certification or during a certification of another operator; or

(8) there is an engineering analysis, which shows that an evacuation is still possible within the 90 second standard, if an aircraft configuration differs with regard to a number of exits or exit types or number of cabin crew members.

(9) Emergency evacuation procedures referred to in sub-regulation (1) shall be contained in a CAO's operations manual and shall form part of an operator's emergency training programme.

(10) A CAO may not assign a flight or cabin crew member to perform any emergency function unless such crew member has been trained to perform emergency functions in accordance with an operator's approved emergency training programme.

(11) A flight or cabin crew member may not accept an assignment of duty to perform any emergency functions unless such crew member has been trained to perform emergency functions in accordance with an operator's approved emergency training programme.

93.02.12 Seating of cabin crew members during flight

During take-off and landing, and whenever deemed necessary by a PIC in the interests of aviation safety, cabin crew members shall be seated at their assigned stations or seats, on all decks that are occupied by passengers.

Division Three: Flight time and duty limitations

93.02.13 Flight time and duty period scheme

(1) A CAO shall establish a flight and duty scheme that should be published in its operations manual.

(2) Flight and duty scheme referred to in sub-regulation (1) shall comply with flight time and duty period limitations, rest periods and days free of duty, prescribed in Document NAM-CATS 93.

(3) Notwithstanding the provisions of sub-regulation (2), the Executive Director may, subject to the provisions of Regulation 93.02.14, approve a flight and duty scheme consisting of a system of flight time and duty period limitations, rest periods and days free of duty proposed by an operator where the Executive Director is of the opinion that an equivalent level of safety will be achieved.

(4) A CAO may not assign a flight crew member if such assignment will not be in compliance with the provisions of flight and duty scheme referred to in sub-regulation (1).

(5) A flight crew member may not accept a flight assignment when he or she knows or has been made aware that such flight assignment will cause him or her to exceed a flight and duty scheme applicable to that flight or if he or she is suffering from or, is likely to suffer from fatigue which may endanger a safety of an aircraft or its flight crew members and passengers.

(6) Where a flight crew member is aware of any reason they would be in violation of a flight and duty scheme referred to in sub-regulation (2), that crew member shall, without delay, inform appropriate management personnel, a duty crew scheduler of an operator or a person responsible for operational control over that flight.

(7) Where any flight crew member is aware of any reason they would be in violation of flight and duty scheme referred to in sub-regulation (3), that crew member shall, without delay, inform a PIC.

(8) A PIC shall be responsible to ensure compliance with a flight and duty scheme referred to in sub-regulation (3).

93.02.14 Fatigue risk management system

(1) A CAO who establishes a flight and duty scheme in accordance with regulation 93.02.13(3) shall establish a fatigue risk management programme that ensures that all operator personnel involved in an operation and maintenance of aircraft do not carry out their duties when fatigued.

(2) A fatigue risk management programme referred to in sub-regulation (1) shall be incorporated in an operations manual and shall meet the requirements prescribed in Document NAM-CATS 93.

(3) A fatigue risk management system established in terms of sub-regulation (1) shall be integrated with SMS and shall be based on scientific principles, knowledge and operational experience with the aim of ensuring that flight crew and cabin crew members are performing at an adequate level of alertness.

(4) A CAO shall designate a person responsible for fatigue risk management system who meets Qualifications and experience requirements, and who will be responsible for functions prescribed in Document NAM-CATS 93.

93.02.15 Approval of a fatigue risk management system

(1) A CAO required to establish a fatigue risk management system shall submit a proposed fatigue risk management system to the Executive Director for approval.

(2) The Executive Director shall approve a commencement of a trial phase for implementation of a proposed fatigue risk management system referred to in sub-regulation (1) for a trial period of up to 36 months if the Executive Director is satisfied that an operator has complied with prescribed requirements.

(3) At any time during a trial phase, the Executive Director may withdraw an approval if it becomes evident that an operator does not comply with the provisions of a system or the regulations.

(4) During the trial phase the operator may implement the proposed maximum and minimum flight time and duty values, as determined by the operator and approved by the Executive Director.

(5) A CAO may after a period of 24 months of approval under sub-regulation (2), apply to the Executive Director for full approval by providing evidence that a fatigue risk management system is delivering required safety outcomes.

(6) The Executive Director may issue a full approval to implement a fatigue risk management system if satisfied with evidence provided under sub-regulation (5).

93.02.16 Fatigue risk management system manual

(1) A CAO required to establish a fatigue risk management system shall draw up a fatigue risk management system manual containing all the information required under this Part.

(2) A fatigue risk management system manual referred to in sub-regulation (1) shall be incorporated in an operations manual and shall meet the requirements as prescribed in Document NAM-CATS 93.

SUBPART 3: TRAINING AND CHECKING

Division One: General provisions for a CAO

93.03.1 Training and checking program

(1) A CAO shall establish and maintain a ground and flight training program that includes a checking program, either through its internal programs or through an ATO approved in accordance with Part 141 of these regulations.

(2) A training program referred to in sub-regulation (1) shall -

(a) be described in an operations manual;

(b) include training to ensure competency for operating all equipment installed;

(c) comply with the requirements prescribed in Document NAM-CATS 93;

(d) include a system of record keeping as prescribed: and

(e) be submitted to the Executive Director for approval.

(3) A CAO shall ensure that each person shall, prior to assignment on duty, whether employed on a full-time or part-time basis -

(a) receive training as appropriate to his or her duties in accordance with the provisions in Document NAM-CATS 93; and

(b) complete, as necessary, a skills test or other comprehension assessment acceptable to the Executive Director.

(4) A CAO shall keep training records and retain them as provided in regulation 93.04.6.

Division Two: Flight crew member training

93.03.2 Flight crew member training

(1) A CAO shall ensure that every flight crew member is provided with ground and flight training as appropriate to its operation and type of aircraft operated.

(2) Training referred to in sub-regulation (1) shall include at least the following training components-

(a) crew resource management training including human factors, risk analysis and error management training;

(b) cabin safety procedures, emergency equipment procedures and security training;

(c) initial and recurrent aircraft type ground and flight training;

(d) regaining recency;

(e) regaining qualification training;

(f) company induction training to its flight crew members;

(g) line induction training on an aircraft with an MTOM of greater than 5 700kg following initial training or upgrade training;

(h) differences and familiarisation training where the operator intends to assign a flight crew member to variant types;

(i) initial upgrade training for aircraft required to be crewed by two pilots;

(j) for aircraft with dual controls, pilot training to operate in either pilot seat for pilots required to operate in either seat;

(k) area, route and airport familiarisation training on initial conversion or upgrade training, as applicable;

(l) ACAS training (as applicable);

(m) RVSM training (as applicable);

(n) upset prevention and recovery;

(o) training for LVO;

(p) single-engine IFR and night VFR training, as applicable;

(q) single pilot IFR and night VFR training, as applicable;

(r) dangerous goods training if an operator is authorised to carry dangerous goods or, if not so authorised, dangerous goods awareness training; and

(s) any other course as may be required by the Executive Director to ensure full competency of personnel on new or special equipment installed in an aircraft or other operations requiring specialized training.

(3) Training required by sub-regulation (1) shall be as prescribed in Document NAM-CATS 93.

Division Three: Cabin crew member training

93.03.3 Cabin crew member training

A CAO, who is required to engage cabin crew in its operation, shall ensure that each cabin crew member has successfully completed an initial training as prescribed in this Part and Parts 64 and 121 of these regulations, before operating as a cabin crew member-

Division Four: Corporate employee and service agent training

93.03.4 Corporate employee and service agent training

(1) A CAO shall ensure provision of initial, recurrent and refresher training and checking as prescribed in Document NAM-CATS 93 for any person whose function is essential to safe operations in terms of this Part.

(2) A person required to be provided with training in accordance with sub-regulation (1) shall include but not limited to -

(a) flight operations officer;

(b) ground service personnel, as applicable; and

(c) any other person that may be determined by the Executive Director.

Division Five: Checking, Training and Validity

93.03.5 Checking of flight crew members and operational personnel

(1) A CAO may not assign a flight crew member to operate an aircraft under this Part unless has completed the check requirements as prescribed in Document NAM-CATS 93.

(2) A flight crew member shall not accept an assignment to operate an aircraft under this Part unless he or she has completed the check requirements as prescribed in Document NAM-CATS 93.

93.03.6 Certification training and validity periods

(1) Training, checking or demonstration of competency validity periods shall apply as follows:

(a) flight crew member;

(i) training shall be valid to a first day of a thirteenth month following a month in which such training took place;

(ii) a pilot proficiency check completed on an aircraft is valid to a first day of a seventh month following a month on which a pilot proficiency check took place; and

(iii) a pilot proficiency check completed on an approved FSTD is valid to a first day of a thirteenth month following a month on which such pilot proficiency check took place.

(b) operational personnel-

(i) flight operations officers' training and checks shall be valid to a first day of a thirteenth month following a month on which a training or demonstration of competency took place; and

(ii) training and checks for all other personnel not included in paragraph (a) and sub-paragraph (b)(i) shall be valid to a first day of a twenty-fifth month following a month on which such training, check or demonstration of competency took place.

(2) A CAO shall, in an operations manual provide information and manner of intended compliance with pilot proficiency check requirements taking into account the risk of operation and type of aircraft operated.

(3) A CAO may deviate from the requirements prescribed in paragraph (a)(ii) and (iii) of sub-regulation (1), subject to such deviation being approved in an operations manual.

(4) Where any required training, check or demonstration of competency is renewed within the last 90 days of its validity period, its validity period shall be extended for 6, 12 or 24 months as appropriate.

(5) The Executive Director may extend a validity period of any required training, check or demonstration of competency by up to 30 days where the Executive Director is satisfied that an extension is justified and that aviation safety shall not be compromised: Provided that a request for such an extension is submitted prior to expiration of such training, check or demonstration of competency.

(6) Completion of any required training, check or demonstration of competency at any time during the periods specified in sub-regulations (4) or (5) shall be considered as completed in a month due for calculation of a next due date.

93.03.7 Pilot proficiency check

(1) A CAO shall ensure that each pilot acting as a flight crew member of an aircraft under VFR has, within the immediately preceding 12 months, successfully completed a flight crew proficiency check, administered by a holder of a valid type rated Grade II flight instructor rating as approved in an operations manual, which covers-

(a) emergency procedures and a pilot's flying skills; and

(b) crew resource management, including human factors.

(2) A CAO shall ensure that each pilot acting as a flight crew member of an aircraft under IFR has within the immediately preceding 12 months, successfully completed a flight crew proficiency check administered by a DFE that covers-

(a) procedures, including emergency procedures, appropriate to the equipment fitted to the aircraft and to the type of operations to which the pilot is assigned; and

(b) crew resource management, including human factors.

(3) A twelve monthly flight crew proficiency check, referred to in sub-regulation (2), may either be conducted on an aircraft or an approved FSTD and shall cover all aspects specified in Document NAM-CATS 93: Provided that a pilot proficiency check shall be conducted in relation to each aircraft for which a pilot holds a valid rating and is required to operate.

(4) If an initial type rating on a turbojet or turbo fan aircraft is done on an aircraft, an approved simulator course must be completed within six months of a type rating.

(5) The Executive Director may on application and under exceptional circumstances referred to in subregulation (6), grant an exemption to an operator from the requirements stipulated in subregulation (3) for a particular type of aeroplane for a period not exceeding 12 months: Provided that such an operator demonstrates a satisfactory equivalent of proficiency.

(6) The Executive Director may grant an exemption referred in subregulation (5), if an operator can prove that-

(a) a flight simulator is not timeously available;

(b) a flight simulator does not exist for a particular aeroplane in which a contemplated abnormal and emergency procedure can be simulated; or

(c) a relevant abnormal or emergency procedure can be safely carried out in such an aircraft, or in a similar aircraft.

(7) The Executive Director may, review an exemption granted in terms of subregulation (6) at any time.

(8) The Executive Director may withdraw an exemption granted in terms of subregulation (6) when a suitable flight simulator device becomes available within Namibia.

SUBPART 4: DOCUMENTATION AND RECORDS

93.04.1 Documentation requirements

(1) A CAO shall ensure that the following documents are carried on board an aircraft during flight-

(a) a copy of OFP;

(b) special load notification, if applicable;

(c) a certified copy of a suitable insurance certificate or proof of insurance;

(d) for CAOC holders, a certified copy of latest updated CAOC and OpSpec;

(e) load and trim sheet;

(f) a copy of standard operating procedures or aircraft operating manual, including aircraft performance data;

(g) a checklist as referred to in regulation 91.03.3;

(h) a copy of operations manual, where applicable; and

(i) a copy of dangerous goods report as specified in regulation 92.00.15, if applicable.

(2) A CAO shall ensure that a copy of OFP, a copy of relevant parts of flight folio, load trim sheet, crew list and where applicable, passenger list, cargo manifest and NOTOC, are retained in a safe place at a first point of departure in respect of each flight undertaken.

(3) Except when otherwise instructed by the Executive Director, documents referred to in sub-regulation (2) shall be retained at the CAO's main base of operations for a period of at least 90 days.

93.04.2 Operations manual

(1) A CAO shall prepare an operations manual containing all the information required under this part and setting out the manner in which it will conduct its operation.

(2) A CAO shall ensure that an operations manual prepared in terms of sub-regulation (1) can be easily amended and-

(a) all parts thereof are consistent and compatible with any condition contained in its CAOC;

(b) contains an amendment control page and a list of effective pages that are in effect showing an effective date for each page; and

(c) has a date of last amendment to each page specified on that page that agrees with a list of effective pages.

(3) A CAO shall submit the operations manual in duplicate to the Executive Director for approval.

(4) If the Executive Director is satisfied that a CAO will comply with prescribed requirements, the Executive Director shall certify in writing on both copies of an operations manual that such manual has been approved and shall return one copy of an approved operations manual to an operator concerned.

(5) A CAO shall amend its operations manual-

(a) where there is a change in any aspect of an operation;

(b) where an operations manual no longer meets the requirements of these regulations or associated technical standards; or

(c) when so required by the Executive Director.

(6) A CAO shall submit an amendment to its operations manual in duplicate to the Executive Director for approval in accordance with sub-regulation (4).

(7) A CAO shall at all times operate its aircraft in accordance with an approved operations manual or an approved amendment thereto.

(8) A CAO shall ensure that-

(a) all operations personnel are able to understand a technical language used in an operations manual;

(b) all personnel are properly instructed in their particular duties and responsibilities and relationship of such duties to an operation as a whole;

(c) every flight is conducted in accordance with an operations manual and that those parts of an operations manual which are required for the conduct of a flight are easily accessible to crew members on board during flight time;

(d) an operations manual is available for the use and guidance of operations personnel;

(e) controlled copies of relevant sections of operations manual are made available on board an aircraft for use of crew members;

(f) each manual holder is provided with copies of all amendments after approval by the Executive Director and such manual holder shall insert amendments issued to him or her prior to their next flight assignment; and

(g) an operations manual is kept in a safe place.

(9) A structure and contents of an operations manual referred to in sub-regulation (1) shall be as prescribed in Document NAM-CATS 93.

93.04.3 Aircraft flight manual

(1) A CAO shall operate its aircraft in accordance with an approved AFM required by regulation 91.03.2.

(2) A CAO shall maintain a system that ensures timely receipt and insertion of all AFM revisions as published by an aircraft manufacturer or as required by the Executive Director.

93.04.4 Operational flight plan

(1) A CAO shall ensure that an OFP is completed for each flight undertaken in terms of this Part.

(2) All entries in an OFP required to be completed for each flight shall be current and permanent in nature.

(3) An OFP shall contain all items as prescribed in Document NAM-CATS 93.

(4) An OFP and its use shall be contained in the operations manual, where such operations manual is required.

93.04.5 Flight time and duty period records

(1) A CAO shall maintain current flight time and duty period records of all flight crew members in such operator's employ.

(2) A CAO shall retain flight time and duty period records referred to in sub-regulation (1) for a period of 15 calendar months calculated from a date of last flight of each flight crew member, on the ground at the main base of operation.

(3) A flight crew member, who is employed by more than one operator or otherwise accumulates flight time outside of his or her employment, shall maintain an accurate record of flight time and duty periods and shall provide copies thereof to all operators by whom such flight crew member is employed.

(4) Whilst a flight crew member is responsible to report all flight activity, each employer maintains responsibility to ensure a flight crew member concerned does not exceed prescribed flight time and duty scheme limits of an operator.

93.04.6 Training records

(1) A CAO shall establish a training file for each person required to receive training and retain on such file a record of all training and checking as specified in Document NAM-CATS 93.

(2) A CAO shall establish procedures to make an employee's training file available for supervised review by such employee.

93.04.7 Load and trim sheet

(1) A PIC may not commence a flight until a person superintending a loading of such aircraft has completed and certified a load and trim sheet.

(2) A PIC may not conduct a take-off unless he or she has accepted a load and trim sheet as prescribed in Document NAM-CATS 93.

(3) A load and trim sheet referred to in sub-regulation (1) shall be completed in duplicate and one copy shall be carried in an aircraft and one copy shall be retained in accordance with the provisions of regulation 93.04.1.

(4) A load and trim sheet shall contain minimum information as prescribed in Document NAM-CATS 93.

SUBPART 5: AIRCRAFT INSTRUMENTS AND EQUIPMENT

93.05.1 Flight, navigation and associated equipment for aircraft operated under IFR or at night

(1) An aircraft may only be operated under IFR or at night if such aircraft is equipped with flight, navigation and associated equipment as follows-

(a) for all large turbine-engine aeroplanes for which an individual certificate of airworthiness is first issued after 1 January 2014, or all aeroplanes for which an individual certificate of airworthiness is first issued after 1 January 2009. a pressure altitude reporting transponder with a capability of providing pressure-altitude information with a resolution of 25 ft or better for an aeroplane;

(b) for a helicopter and large aeroplane, a single standby attitude indicator, capable of being used from either pilot's station, which-

(i) is powered continuously during normal operation and, after a total failure of normal electrical generating system, is powered from a source independent of a normal electrical generating system;

(ii) provides reliable operation for a minimum of 30 minutes after total failure of normal electrical generating system, taking into account other loads on an emergency power supply and operational procedures;

(iii) operates independently of any other attitude indicating system;

(iv) is operative automatically after total failure of normal electrical generating system;

(v) is appropriately illuminated during all phases of operation: Provided that if a standby attitude instrument system is capable of being used through flight attitudes of 360° of pitch and roll, turn-and-slip indicators may be replaced by slip indicators.

(c) CNS equipment as prescribed in regulations 91.05.1 and 91.05.2.

(2) A CAO may not operate an aircraft in IMC, unless such aircraft is equipped with or comply with the following-

(a) at least two independent electrical generating systems, each operated by separate engine and individually capable of powering all required instruments and equipment necessary for safe emergency operation of an aircraft;

(b) at least two independent sources of energy, of which at least one is an engine-driven pump or generator, which are both able to drive all required gyroscopic instruments powered by or to be powered by that particular source, and installed in such a manner that failure of one instrument or source does not interfere with an energy supply to remaining instruments or other energy source, except where a rate-of-turn indicator of a single-engine aircraft involved in all-cargo operations only, has a source of energy separate from a bank and pitch and direction indicators. For the purpose of this paragraph, each engine-driven source of energy of a multi-engine aircraft must be on a different engine;

(c) either airborne weather radar equipment or other equipment, approved by the Executive Director, capable of detecting thunderstorms and other potentially hazardous weather conditions.

(3) In complying with the provisions of sub-regulation (1)(b) it shall be clearly evident to flight crew members when such standby attitude indicator is being operated by emergency power.

(4) Where a standby attitude indicator referred to in sub-regulation (1)(b) has its own dedicated power supply, there shall be an associated indicator, either on an instrument or instrument panel, when such power supply is in use.

(5) Instruments that are used by a pilot shall be so arranged as to permit a pilot to see their indications readily from his or her station with a minimum practicable deviation from a position and line of vision normally assumed when looking forward along a flight path.

93.05.2 Terrain awareness and warning system (GPWS/TAWS)

(1) All turbine-engine and piston-engine aircraft of a MTOM in excess of 5 700kp or authorised to carry more than nine passengers, shall be equipped with a TAWS which has a predictive terrain avoidance function.

(2) A TAWS referred to in sub-regulation (1) shall meet the requirements as prescribed in Document NAM-CATS 91 and shall-

(a) automatically provide a timely and distinctive warning to flight crew when an aircraft is in potentially hazardous proximity to the earth's surface;

(b) provide, as a minimum, warning of at least the circumstances prescribed in Document NAM-CATS 91.

(3) A person may not inhibit or otherwise render inoperative any required TAWS during flight time except in accordance with an approved aircraft flight manual.

93.05.3 Airborne weather radar equipment

(1) Subject to the provisions of sub-regulation (2), a PIC shall not operate an aeroplane, or helicopter with a maximum approved passenger seating configuration of more than nine seats, at night or in IMC in an area where thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborne weather radars, may be expected to exist along a route unless such aircraft is equipped with airborne weather radar equipment.

(2) In the case of a non-pressurised aeroplane, an airborne weather radar equipment required in terms of sub-regulation (1), may be substituted by other approved equipment, which is capable of detecting thunderstorms and other potentially hazardous weather conditions, and capable of providing flight crew with bearing and distance of such detected conditions.

93.05.4 Airborne collision avoidance system

(1) A large turbine-engine aeroplane may only be operated if it is equipped with a serviceable ACAS II meeting specifications prescribed in Document NAM-CATS 91.

(2) A flight crew member shall only operate a large turbine-engine if he or she is trained in the use of ACAS as prescribed Document NAM-CATS 93.

93.05.5 Flight data recorder

(1) A CAO shall ensure that the following aircraft are equipped and operated with suitable FDR as specified in Document NAM-CATS 93 -

(a) aeroplane with an MCM exceeding 5 700 kg for which an original Certificate of Airworthiness was issued on or after 1 January 2005;

(b) aeroplane with an MCM exceeding 2 7000 kg for which an original Certificate of Airworthiness was issued on or after 1 January 1989;

(c) helicopter with an MCM exceeding 7 000 kg, or having a passenger seating configuration of more than nineteen, for which a certificate of airworthiness was first issued on or after 1 January 1989;

(d) helicopter with an MCM exceeding 3 180 kg for which a certificate of airworthiness was first issued after 1 January 2016; and

(e) turbine-engine helicopter with an MCM of 2 250 kg up to 3 180 kg, for which an application for type certification is submitted on or after 1 January 2018.

(2) A CAO shall ensure that an FDR required by sub-regulation (1) complies with the specifications prescribed in Document NAM-CATS 91.

(3) Parameters of FDR shall be determined within ranges, accuracies and recording intervals as prescribed in Document NAM-CATS 91.

93.05.6 Cockpit voice recorders

(1) A CAO shall ensure an aircraft operated under this part is equipped with a CVR specified in Document NAM-CATS 91 if that aircraft-

(a) is an aeroplane that has a MTOW exceeding 5 700 kg but not exceeding 27 000 kg and to which a certificate of airworthiness was first issued on or after 1 January 1987 and is required to be operated by more than one pilot;

(b) is an aeroplane that has a MTOW exceeding 27 000 kg and to which a certificate of airworthiness was first issued on or after 1 January 1987; or

(c) is a helicopter that has a MTOW exceeding 7 000 kg.

(2) A CVR referred to in sub-regulation (1) may be combined with an FDR referred to in regulation 93.05.5.

(3) An aircraft equipped with a CVR may not be operated using magnetic tape or wire.

(4) An aircraft may commence a flight with a CVR inoperative: Provided that-

(a) an aircraft may not take-off from an aerodrome where repairs or replacements to such CVR can be made;

(b) an aircraft does not operate more than six consecutive flights with a CVR unserviceable;

(c) not more than 48 hours have elapsed since a CVR became unserviceable; and

(d) FDR required to be carried is operative, unless the FDR is combined with a CVR.

93.05.7 Equipment requirements for aeroplanes on long range over water flights

(1) An aeroplane shall be installed with life-saving equipment when used on a route where an aeroplane may be flown over water at more than a distance corresponding to 120 minutes at cruising speed or 400nm, whichever is lesser, away from land suitable for making an emergency landing.

(2) Notwithstanding the provisions of subregulation (1), a single engine landplane operated in accordance with Regulation 91.04.25 used on a route over water at more than a distance corresponding to 30 minutes or 100 nm, whichever is lesser, shall have-

(a) life-saving rafts in sufficient numbers to carry all persons on board, stowed to facilitate their ready use in an emergency;

(b) life-saving equipment, including means of sustaining life as is appropriate to a flight to be undertaken;

(c) equipment for making pyrotechnical distress signals; and

(d) for a landplane of a MCTOW of over 27 000 kg, a securely attached underwater locating device operating at a frequency of 8.8 kHz which has the capability to operate for a minimum of 30 days and which device shall not be installed in wings or empennage.

(3) Every person on board an aeroplane engaged on long range over water flight shall have access to a life jacket and equivalent individual flotation device equipped with a means of electronic illumination for the purpose of facilitating the location of persons.

(4) A life raft, survival radio equipment and information requirements for extended over-water flight shall be as prescribed in Document NAM-CATS 91.

Note.— Underwater locator beacon performance requirements are as contained in the SAE AS6254, Minimum Performance Standard for Low Frequency Underwater Locating Devices (Acoustic) (Self-Powered), or equivalent documents.

93.05.8 Microphones

All flight crew members, when operating on flight deck duty, shall communicate through boom or throat microphones below the transition level or altitude.

93.05.9 Cabin attendant seats

(1) An aircraft shall, where applicable, be equipped with seats for cabin crew members, which are forward or rearward facing within 15° of the longitudinal axis of an aircraft and located as close as possible to floor-level emergency exits.

(2) A cabin crew member required to satisfy emergency evacuation criteria shall be provided a seat equipped with a safety harness: Provided that a safety belt with one diagonal shoulder strap is permitted if it not reasonably practical to fit a safety harness.

93.05.10 Supplemental oxygen and requirements

A person operating under this Part, shall comply with supplemental oxygen requirements prescribed in Part 91 of these regulations and Subpart 4 of Document NAM-CATS 91.

SUBPART 6: CORPORATE AVIATION OPERATOR CERTIFICATE

93.06.1 Requirements to hold a Corporate Aviation Operator Certificate

(1) A CAO may only operate an aircraft under conditions of a CAOC issued to that CAO in terms of this Part.

(2) A CAOC issued to a CAO in terms of this Part shall contain OpSpec, which shall include type, model or series and registration number of each aircraft approved for use by that particular CAO.

(3) A CAOC may be issued with any condition pertaining to an operation of an aircraft that is necessary for aviation safety and may contain OpSpec regarding authorization with respect to low visibility operations, navigation system operations and conducting a specialized operation deemed necessary, by the Executive Director.

93.06.2 Validity and status of CAOC

(1) Subject to the provisions of sub-regulation (2), a CAOC shall be valid for indefinite period, unless otherwise provided by the Executive Director.

(2) A CAOC shall cease to be valid if-

(a) voluntarily surrendered by a holder;

(b) cancelled by the Executive Director; or

(c) a holder fails to pay an annual fee as prescribed in Part 187 of these regulations.

(3) The Executive Director may suspend or cancel a CAOC if a holder-

(a) no longer meets requirement for the issuance of CAOC;

(b) fails to successfully complete prescribed audits and inspections;

(c) fails to resolve any adverse finding made by the Executive Director within a reasonable period allowed by the Executive Director; and

(d) violates a condition or OpSpec of a CAOC.

(4) Where a CAOC has seized to be valid or is suspended or cancelled by the Executive Director, a holder must return a CAOC concerned to the Executive Director within seven days of being so notified.

93.06.3 Application for issuance or amendment of CAOC and OpSpec

(1) An application for issuance or amendment of CAOC or OpSpec shall be made to the Executive Director in the form and manner prescribed in Document NAM-CATS 93 and shall be accompanied by appropriate fee as prescribed.

(2) An application referred to in sub-regulation (1) shall demonstrate that an applicant has adequate equipment, facilities and personnel to conduct a proposed operation in a safe and proper manner and in full compliance with applicable legislation.

(3) Where a CAO is not a registered owner of an aircraft to be used for operation under this Part, an application referred to in sub-regulation (1) shall be accompanied by a written agreement between a registered owner of an aircraft and a CAO in respect of the use of that aircraft.

(4) A holder of a CAOC may add to its OpSpec an aircraft registered on another AOC: Provided that-

(a) an aircraft is not registered on more than three operating certificates;

(b) an aircraft is maintained by only one AMO;

(c) a manual of procedures or maintenance control manual, as applicable, for all operators and OpSpec for each operator, specifying an AMO responsible for maintenance of each shared aircraft, by aircraft registration number;

(d) all operators use same aircraft flight folio such that there is one continuous record of aircraft's activities, and flight crew members are trained in the procedures for completion of flight folio;

(e) there is same procedure for entry, reporting and rectification of defect and flight crew members are trained in such procedure;

(f) where applicable, the flight crew members shall use a MEL approved for the aircraft and shall be trained in MEL procedures for that particular aircraft. The operations manual shall specify the procedures to be followed by the flight crew in the event the maintenance personnel is required; and

(g) each flight crew member's training file has records of ground and flight training covering any differences between model(s) operated by all operators concerned, including at least-

(i) safety equipment contained on board;

(ii) ancillary equipment such as navigational aids, auto flight system, flight director or FMS, ACAS, TAWS, weather radar; and

(iii) systems differences, engine or airframe limitations, performance considerations and operating characteristics.

(5) Personnel referred to in sub-regulation (2) shall be approved by the Executive Director and shall include the following:

(a) accountable manager;

(b) person responsible for flight operations;

(c) person responsible for aircraft;

(d) safety manager; and

(e) quality manager.

(6) The Executive Director may, after consideration of a scope and size of an operation concerned, approve assignment of more than one position to one person or approve different positions.

(7) The Executive Director may only approve a nominated post-holder required by sub-regulation (5) if a nominee meets the qualifications and requirements prescribed in Document NAM-CATS 93: Provided that the Executive Director may accept a deviation from the qualification requirements on the basis of scope and size of an operation concerned.

(8) Notwithstanding any provision of the regulations, the Executive Director may withdraw an approval if a post-holder no longer meets the requirements of such approval or fails to discharge responsibilities of that position.

(9) The Executive Director may amend a CAOC if he or she is satisfied that it is in the public interest and the interest of aviation safety.

(10) An amendment referred to in sub-regulation (9) becomes effective on a date determined by the Executive Director or in the case of emergency requiring immediate amendment, immediately upon receipt of a written notice to that effect.

(11) Any person affected by an amendment referred to in sub-regulation (10) may make representation to the Executive Director concerning such amendment: Provided that a CAO shall operate in accordance with such amendment until it is varied or set aside.

(12) A holder of CAOC may request amendment to CAOC or associated OpSpec at least 30 days prior to anticipated operation in accordance with such amendment.

(13) A person may not perform a corporate aviation operation for which a CAOC amendment is required until such amendment has been approved by the Executive Director.

93.06.4 Application, adjudication of and issuance of CAOC and operations specifications

(1) In considering an application referred to in regulation 93.06.3, the Executive Director may conduct an investigation as he or she deems necessary to determine an applicant's ability to meet the prescribed requirements.

(2) An application shall be granted and a CAOC and associated OpSpec issued, with such conditions as the Executive Director may determine, if the Executive Director is satisfied that an applicant meets the prescribed requirements and will not operate contrary to any provision of the Act or the Air Services Act, 1949.

(3) A CAOC and associated OpSpec shall be issued in a prescribed form and shall contain at least the information prescribed in Document NAM-CATS 93.

93.06.5 Safety and security inspections and audits

(1) An applicant for an issuance of a CAOC shall permit an authorised officer, inspector or authorised person to carry out such safety and security inspection and audit which may be necessary to support an application concerned.

(2) Any finding or non-compliance determined during an inspection or audit referred to in subregulation (1) shall be categorised as prescribed in Document NAM-CATS 93.

93.06.6 Administrative duties of a CAOC holder

(1) A holder of a CAOC shall keep a certificate in a safe place and produce such certificate to an authorised officer or inspector, for inspection, if so requested.

(2) A CAO shall advise the Executive Director of any changes in personnel occupying a management position, specified in regulation 93.06.3 (5) and shall submit names and qualifications of a replacement person to the Executive Director for approval before effecting such change: Provided that in a case of a sudden departure of an incumbent, a CAO shall immediately notify the Executive Director of the event and means by which safety of operations will be ensured whilst embarking in a process of replacing such person.

(3) In case of change of its ownership, a CAO shall notify the Executive Director of names and contact details of new owner.

93.06.7 Register of CAOCs

(1) The Executive Director shall maintain a register of CAOCs issued in terms of these regulations.

(2) A register referred to in sub-regulation (1) shall contain at least the following particulars-

(a) full name and, if any, business name of a holder of CAOC;

(b) postal and physical addresses of a holder of CAOC;

(c) number of CAOC issued to such holder of CAOC;

(d) particulars of type of operation for which a CAOC was issued, including a list of OpSpec issued;

(e) particulars of category of aircraft for which a CAOC was issued; and

(f) date on which a CAOC was issued.

(3) Particulars referred to in sub-regulation (2) shall be recorded in a register within 30 days of issue of CAOC.

(4) A register shall be kept in a safe place at the premises of the Authority.

(5) A copy of a register shall be furnished to any person who requests such copy on payment of the appropriate fee as prescribed in Part 187 of these regulations.

93.06.8 Operator notification

(1) If a CAO operates, under its CAOC in a State, other than Namibia, the CAO shall notify the Executive Director as well as the State in which the operation is conducted.

(2) On receipt of a notification referred to in sub-regulation (1), the Executive Director shall coordinate safety and security oversight with an appropriate authority of a State in which an operation is performed.

93.06.9 Operational demonstration

(1) A person may only operate an aircraft under this Part, after that person has conducted satisfactory demonstration of operation as specified in Document NAM-CATS 93.

(2) An aircraft may not be operated in a designated special area or through a use of a specialised navigation system unless a person operating an aircraft has conducted a satisfactory operational demonstration as required by the Executive Director.

(3) The Executive Director may authorise a deviation from this regulation if he or she finds that special circumstances require such a deviation in the interest of aviation safety and security.

SUBPART 7: FLIGHT OPERATIONS

Division One: General

93.07.1 Routes and areas of operation and aerodrome facilities for aeroplanes

(1) A single-engine aeroplane may be operated over any route or airway in IMC if a cloud base at any point along a route of flight is not lower than that which would permit descent in VMC below a minimum en-route altitude published or established by an operator for such route or airway.

(2) In an event of a failure of a critical engine, a twin-engine aeroplane may be operated over any route or airway in IMC if such aeroplane-

(a) is capable of maintaining a minimum en-route altitude published or established by an operator for such route or airway; or

(b) is able to maintain flight to a suitable landing area and a cloud base at any point along a route of flight is not lower than that which would permit descent in VMC below a minimum en-route altitude published or established by an operator for such route or airway and flight in VMC to a suitable landing area.

(3) In an event of a failure of any two engines, an aeroplane having three or more engines may be operated over any route or airway in IMC if such aeroplane is capable of maintaining a minimum en-route altitude published or established by an operator for such route or airway.

(4) Notwithstanding the provisions of sub-regulations (1), (2) and (3), an aeroplane may be operated over any route or airway in IMC if such aeroplane is capable of landing at an intended destination or alternate aerodrome in accordance with a related landing performance criteria for such aeroplane.

(5) A PIC shall comply with the relevant provisions of Document NAM-CATS 93 when planning destination alternate aerodromes.

(6) A CAO shall operate all flights in accordance with such route, aerodrome or other approvals and conditions pertaining to flight operations as are contained in its CAOC.

(7) A CAO shall specify in its operations manual procedures used to determine minimum altitudes to be flown in order to meet obstacle clearance requirements specified in regulation 91.07.2 and, for operations in uncontrolled airspace, the means for ensuring that a navigational capability is maintained while operating on any route used therein.

(8) Subject to the provisions of sub-regulation (9), a person may not commence a flight unless such person has ascertained, by every reasonable means available, that aerodrome ground facilities and services, including meteorological and rescue fire-fighting services are-

(a) available as required for a safe operation of an aircraft and protection of passengers;

(b) adequate for a type of operation being conducted; and

(c) functioning normally for their intended purpose.

(9) A CAO, who is unable to comply with the provisions of sub-regulation (8), shall establish procedures in its operations manual that will ensure an operation will be safely conducted, and such procedures shall, in an event that rescue fire-fighting services at an aerodrome that may be used are or may be below that for which an aerodrome is certified, include risk assessment as prescribed in Part 140.

(10) A CAO shall report without delay to a responsible authority any observed operational inadequacy of facilities referred to in sub-regulation (8).

(11) The information related to the level of rescue and firefighting service protection that is deemed acceptable by a CAO shall be contained in the operations manual.

(12) A CAO shall, as part of its SMS, assess the level of rescue and firefighting service protection available at an aerodrome intended to be specified in the operational flight plan to ensure that an acceptable level of protection is available for an aeroplane intended to be used.

93.07.2 Routes and areas of operation and aerodrome facilities for helicopters

(1) Subject to the provisions of subsection (2), a person operating a helicopter in terms of this Part shall ensure that such operation is only conducted along such routes for which-

(a) it has been ascertained by every reasonable means available that ground facilities and services, including meteorological services, are available as required for a safe operation of a helicopter and protection of passengers, are adequate for a type of operation being conducted and are functioning normally for their intended purpose; and

(b) appropriate maps and charts are available.

(2) A CAO who is unable to comply with the provisions of sub-regulation (1) shall establish procedures in its operations manual that will ensure an operation will be safely conducted, and such procedures shall, in an event that rescue fire-fighting services at an aerodrome that may be used are or may be below that for which an aerodrome is certified, include risk assessment as prescribed in Part 140.

(3) A CAO shall ensure that-

(a) flights are only conducted within such areas and along such routes and in accordance with such conditions for which approval or authorisation has been obtained from appropriate authority as required;

(b) performance of a helicopter intended to be used, is adequate to comply with minimum flight altitude requirements; and

(c) equipment of a helicopter intended to be used, complies with minimum requirements for a planned operation.

(4) A CAO shall report without delay to a responsible authority any observed operational inadequacy of facilities referred to in sub-regulation (1).

(5) Prior to conducting a passenger-carrying IFR or night VFR flight in uncontrolled airspace, an operator shall ensure that a navigational capability is able to be maintained while operating on any route used in such airspace.

(6) For offshore operations as referred to in regulation 93.07.25, an operator shall select suitable offshore alternates and specify each in the OFP for each IFR flight as provided in Document NAM-CATS 93.

(7) A CAO may only permit a commencement of a flight to be conducted in accordance with IFR for which one or more destination alternate aerodromes are required, only if aerodrome meteorological forecast indicates that conditions for a period of at least one hour before until one hour after estimated time of arrival at both destination and alternate aerodrome will meet or exceed those prescribed in Document NAM-CATS 93.

(8) A PIC may not commence a flight to be conducted in accordance with IFR for which one or more destination alternate aerodromes are required, unless if aerodrome meteorological forecast indicates that conditions for a period of at least one hour before until one hour after estimated time of arrival at both destination and alternate aerodrome will meet or exceed those prescribed in Document NAM-CATS 93.

93.07.3 Establishment of procedures

(1) A CAO shall provide a checklist system to be used by flight crew members for all phases of operation under normal, abnormal and emergency conditions, to ensure that operating procedures are followed.

(2) An approved checklist system referred to in sub-regulation (1), shall include-

(a) an easy-to-use checklist for normal phases of flight operation;

(b) a quick reference-type checklist dealing with malfunctions requiring a use of abnormal or emergency procedures;

(c) an amplified checklist that ensures all reference check items are dealt with in accordance with an aircraft manufacturer's recommended procedures, if any

(d) an easy to locate and employ system of supplementary checks and procedures, if applicable;

(e) any other check items relating to the use of equipment not installed at the time of aircraft manufacture or not included in a check system provided for in an aircraft flight manual and;

(f) human factor principles in design and utilization.

(3) A PIC shall ensure all check procedures, including checklists, are complied with in detail.

93.07.4 Competence of operations personnel

A CAO shall ensure that all personnel assigned to, or directly involved in ground and flight operations, are properly instructed, have demonstrated their abilities in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole.

93.07.5 Use of air traffic services

A PIC shall ensure that air traffic services are used for all flights whenever available.

93.07.6 Instrument approach and departure procedures

A CAO may implement instrument approach and departure procedures, other than instrument approach and departure procedures referred to in regulation 91.07.16: Provided that such instrument approach and departure procedures have been approved by the Executive Director or an appropriate authority of a State in which a concerned aerodrome is located.

93.07.7 IFR or night flight without second-in-command

(1) Subject to the provisions of sub-regulation (2), a CAO may not operate an aircraft during IFR or night VFR flight without a second-in-command.

(2) A flight conducted under the following circumstances is exempted from a prohibition in sub-regulation (1):

(a) flight conducted with an aeroplane with a MCTCW of less than or equal to 5 700 kg;

(b) flight conducted with a helicopter with a MCTOW of equal or less than 3 180 kg;

(c) flight conducted with an aircraft with certificated to carry a maximum of nine passengers;

(d) flight conducted with an aircraft not certificated or otherwise required by these regulations to be flown by two pilots; and

(e) flight conducted by an operator who is authorised to do so in his or her OpSpec and in accordance with the relevant provisions of Document NAM-CATS 93.

93.07.8 Reporting of hazardous flight conditions

A PIC shall report any condition considered to be hazardous to his, her or another aircraft to any appropriate ATSU as soon as possible, giving such details as may be pertinent to safety of aircraft.

93.07.9 Refuelling and de-fuelling with passengers on board

(1) An aircraft may not be refuelled or defueled when passengers are embarking, disembarking or on board, unless such fuelling or defueling is carried out in accordance with procedures specified in Document NAM-CATS 93 and an AFM makes provision for such procedures.

(2) Procedures referred to in sub-regulation (1) shall be included in an operator's operations manual.

93.07.10 Reporting acts of unlawful interference

A PIC shall report an act of unlawful interference, which, in his or her opinion, may jeopardize safety of persons on board an aircraft, to a nearest ATSU through a most discrete method possible using means devised for such communication.

93.07.11 In-flight simulation of emergencies

A person may not simulate any emergency or abnormal condition during flight that would effectively alter a flight characteristic of an aircraft or otherwise induce a potentially unsafe condition when passengers are on board such aircraft.

93.07.12 Security of the flight crew compartment

(1) A flight crew compartment door, where fitted, shall be closed and locked in all phases of a flight if, in the opinion of a PIC, it is in the interest of aviation security.

(2) If cabin crew is required or carried, a procedure shall be established by which cabin crew can discreetly notify a flight crew in the event of suspicious activity or security breach in a cabin.

(3) The requirements stipulated in subregulations (1) and (2) shall apply to a passenger-carrying aeroplane with -

(a) MCTOW in excess of 54 500 kg; or

(b) MCTOW in excess of 45 500 kg with a passenger seating capacity greater than 19.

(4) An aeroplane with a passenger seating capacity of more than 60 shall be equipped with an approved flight crew compartment door capable of being locked and unlocked from either pilot's station, designed to resist penetration by a small firearm, grenade shrapnel, and forcible intrusions from an unauthorised person.

93.07.13 Environmental protection

A CAO engaged in international operation shall comply with the requirements relating to the monitoring, reporting and verification of annual CO2 emissions as prescribed in Part 91 of these regulations.

Division Two: Dispatch and flight release rules

93.07.14 Operational control and supervision of flight operations

(1) A CAO shall establish and maintain an OCS that meets the requirements prescribed in Document NAM-CATS 93 and which provides operational control services appropriate to flights operated.

(2) A CAO may use an OCS of an agent whether domestic or foreign: Provided that a service agreement is approved by the Executive Director and methods, procedures and policies for effecting operational control are described in the CAO'S operations manual.

93.07.15 Retention of flight operations documents and reports

(1) Unless otherwise specified by the Executive Director, a CAO shall retain all flight documents made in terms of this subpart, for a period of not less than 90 days.

(2) All flight documentation required by this subpart to be prepared with respect to a flight and which was carried on board that flight shall be returned to a main base specified in a CAOC.

(3) Flight documentation referred to in sub-regulation (2) shall include weather maps and printed information, NOTAMs, cargo and fuel loading sheets and manifests and all paperwork used to record a flight's progress or diversion and irregular or emergency situations.

93.07.16 Minimum equipment list

(1) A person may not conduct a take-off in an aircraft with instruments or equipment that are not serviceable or that have been removed unless an aircraft is operated in accordance with a CDL, provisions specified in such aircraft flight manual or conditions or limitations specified in a MEL, which have been approved by the Executive Director.

(2) A CAO shall establish a MEL for each type of aircraft for which a MMEL has been approved by a State of Manufacture of such aircraft: Provided that such State of Manufacture is a Contracting State.

(3) An aircraft may only be operated in accordance with a MEL if such MEL is carried on board.

93.07.17 Aerodrome, operating minima

(1) A CAO shall establish aerodrome operating minima for each aerodrome planned to be used in a manner approved by the Executive Director.

(2) An aerodrome operating minima referred to in sub-regulation (1) shall not be lower than the values prescribed in Document NAM-CATS 91, except as provided in regulation 91.06.32.

(3) A CAO shall ensure that all instrument approaches and departures are conducted in accordance with procedures approved for such operator in its OpSpec.

(4) Where a CAO is operating at an aerodrome other than a Namibian aerodrome, an aerodrome operating minima established by such operator may be lower than a minima established by an appropriate authority of a State in which such aerodrome is located: Provided that-

(a) a State concerned approves a lower operating minima; and

(b) a CAO has been authorised in its OpSpec to operate to such lower minima.

93.07.18 Fuel and oil supply and record keeping

(1) A CAO shall establish a policy and procedures to ensure that in-flight fuel checks and fuel management are performed.

(2) A policy and procedures referred to in sub-regulation (1) shall be submitted to the Executive Director for approval.

(3) A PIC shall be responsible to ensure that in-flight fuel checks and fuel management are performed.

93.07.19 Operation of aircraft in icing conditions

(1) A person may not conduct a take-off or continue a flight in an aircraft when icing conditions are reported to exist or are forecast to be encountered along a route to be flown unless an aircraft is equipped to be operated in such conditions and a type certificate or an AFM authorises flying in such conditions.

(2) A flight may not be initiated or continued on in icing conditions where, in the opinion of a PIC, the conditions experienced may adversely affect flight safety.

(3) An aircraft may not be operated in icing conditions at night unless such aircraft is equipped with means to illuminate a representative surface or otherwise detect a formation of ice.

93.07.20 Mass and balance control

(1) A person may not operate an aircraft unless, during every phase of that flight, load restrictions, mass and centre of gravity of an aircraft conform to limitations specified in an aircraft flight manual.

(2) A CAO shall have a mass and balance programme that complies with regulation 91.07.11.

(3) A CAO shall specify in its operations manual its mass and balance programme and instructions to employees regarding a preparation and accuracy of mass and balance forms and load and trim sheet.

93.07.21 Inertial navigation and inertial reference systems

A person may only use inertial navigation or reference systems if so authorised by the Executive Director and in accordance with requirements prescribed in Document NAM-CATS 93.

93.07.22 Low visibility operations

A person may not conduct a low visibility take-off or Category II or III approach unless-

(a) such a person is authorised to do so by the Executive Director;

(b) such person meets the conditions prescribed in Document NAM-CATS 93; and

(c) such take-off or approach is conducted in accordance with procedures approved for a CAO in its operations manual and specified on OpSPec.

93.07.23 Operations with head-up displays, enhanced vision systems and night vision goggles

(1) A CAO may only prescribe the use of automatic landing systems, a HUD or equivalent display, EVS, SVS, CVS or any combination of these systems into a hybrid system for the safe operation of an aeroplane, if-

(a) such CAO is authorised to do so in its operation specifications;

(b) such CAO ensures that all requirements for automatic landing systems, a HUD or equivalent display, EVS, SVS, or CVS whichever is applicable, as prescribed in Document NAM-CATS 93 are complied with;

(c) such equipment meets the appropriate airworthiness certification requirements stipulated in Part 21;

(d) such CAO has carried out a safety risk assessment of an operation supported by the automatic landing systems, a HUD or equivalent display, EVS, SVS, or CVS;

(e) the Executive Director has authorised operational credit for such operations with an aeroplane equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS, or CVS;

(f) such CAO has acquired a specific approval where operational credit relates to low visibility operations: Provided that such specific approval shall not affect a classification of instrument approach procedure.

(2) A CAO shall include suitable operational procedures for use of, and training requirements for equipment referred to in subregulation (1) in the operations manual referred to in Regulation 93.04.2, which shall provide for the following:

(a) equipment limitations;

(b) operational credits as specified in Document NAM-CATS 93;

(c) flight planning;

(d) ground and airborne operations;

(e) crew resource management;

(f) standard operating procedures; and

(g) ATS flight plans and communication.

93.07.24 Operations with electronic flight bags

(1) A person shall not use an EFB unless an operator or owner of an aircraft-

(a) is authorised to do so in its operations specifications; and

(b) complies with the EFB requirements prescribed in Document NAM-CATS 93.

(2) Where an EFB is used on board aircraft a CAO shall -

(a) assess the safety risk associated with each EFB function;

(b) establish and document procedures for the use of, and training requirements for an EFB device and each EFB function in an operations manual referred to in Regulation 93.04.2;

(c) ensure that, in the event of an EFB failure, sufficient information is readily available to a flight crew for a flight to be conducted safely;

(d) ensure requirements are established for redundancy of information, if appropriate, contained and displayed by an EFB function;

(e) ensure that an EFB equipment and its associated installation hardware, including interaction with aircraft systems where applicable, meet the appropriate airworthiness certification requirements; and

(f) establish and document procedures for the management of EFB functions including any database it may use.

(3) Where a portable EFB is used on board aircraft, an operator or owner of an aircraft shall ensure that it does not affect the performance of aeroplane systems, equipment or ability to operate an aircraft.

93.07.24A RVSM

(1) A CAO shall not operate in an RVSM airspace unless such CAO –

(a) is authorised to do so by means of a specific approval; and

(b) complies with the requirements prescribed in regulation 91.04.31.

(2) A CAO authorised to operate in an RVSM airspace shall ensure that a minimum of two aeroplanes of each fleet type have their height-keeping performance monitored at least once every 2 years or at least within intervals of 1 000 flight hours per aircraft, whichever period is longer: Provided that, if an operator's aircraft fleet consists of a single aeroplane, monitoring of that aircraft shall be accomplished within a period specified in aircraft documentation.

(3) The height-keeping performance monitoring requirements required in subregulation (2) may be met using data obtained from any air traffic services regional monitoring programme.

93.07.25 Helicopter offshore operations

(1) A CAO shall ensure that, in case of a flight over water by a helicopter-

(a) a helicopter is equipped for flights over water in terms of these Regulations;

(b) a shore base or other flight-monitoring station shall maintain means of flight monitoring with a helicopter as approved by the Executive Director; and

(c) a full complement of crew to operate a helicopter and its safety equipment under normal, abnormal or emergency conditions is carried on board.

(2) A PIC shall ensure that if a flight is undertaken in accordance with provisions of sub-regulation (1) with a single-reciprocating-engine helicopter-

(a) such flight shall only be undertaken by daylight and under VMC;

(b) a flight may not be commenced if it cannot be completed at least one hour before night;

(c) flight shall be limited to five nautical miles seaward from base unless if a flight is undertaken by an amphibian helicopter or a helicopter with approved flotation gear.

(3) A PIC shall ensure that if a flight is undertaken in accordance with the provisions of sub-regulation (1) with a single-turbine-engine helicopter-

(a) a flights shall be undertaken only by daylight and under VMC;

(b) flight shall be limited to 50 nautical miles seaward from base unless if a flight is undertaken by an amphibian helicopter or a helicopter with approved flotation gear; and

(c) for a flight from 5 nautical miles over water, sufficient survival dinghies are carried in such a manner that they will be instantly accessible at a time of ditching.

(4) A CAO shall ensure that if a flight is to be undertaken by night or under IMC using a multi-engine helicopter, such helicopter is equipped for IFR operations and functioning area or on-board navigation aids are available.

(5) A CAO may not, when planning flight for over-water operation, consider offshore alternates when it is possible to carry enough fuel to plan for an on-shore alternate landing site; Provided that an off-shore alternate landing site may be considered in exceptional circumstances, other than for landing for purposes of payload enhancement in adverse weather conditions.

(6) For the purposes of this Part, “shore base” means a site from which a flight over water is commenced or supported.

Division Three: Cabin safety

93.07.26 Carry-on baggage

(1) A CAO shall establish adequate procedures to ensure that only baggage that can be adequately and securely stowed is carried onto an aircraft and taken into a passenger cabin.

(2) Minimum requirements for procedures referred to in sub-regulation (1) are prescribed in Document NAM-CATS 93.

(3) A PIC shall be responsible to ensure that only baggage that can be adequately and securely stowed is carried onto an aircraft and taken into a passenger cabin.

93.07.27 Securing of passenger cabin and galley

(1) Before take-off and landing and whenever deemed necessary in the interests of aviation safety, a PIC shall ensure that-

(a) all equipment, baggage and loose articles in a cabin of an aircraft, including passenger service items and crew members' and passengers' personal effects, are properly secured and stowed so as to avoid a possibility of injury to persons or damage to such aircraft through movement of such articles caused by in-flight turbulence or by unusual accelerations or manoeuvres; and

(b) all aisles, passage ways, exits and escape paths are kept clear of obstructions.

(2) All solid articles shall be placed in approved stowage areas in an aircraft, at all times whenever seat belt lights are illuminated or when so directed by a PIC of an aircraft.

(3) For the purposes of sub-regulation (2), approved stowage area means an area under a passenger seat or a locker, overhead or other, utilised in accordance with placarded mass limitation of a locker.

(4) Where service galleys are made available to passengers on a self- service basis, a cabin briefing shall include a demonstration and safety instructions in the use and stowage procedures of galley area containing such services.

(5) A PIC may not commence take-off unless he or she has completed such cabin checks as necessary to ensure safe condition of a cabin.

93.07.28 Briefing of passengers

(1) A PIC shall ensure that passengers are given a safety briefing in accordance with Document NAM-CATS 93 before commencement of a flight.

(2) Where a safety briefing referred to in sub-regulation (1) is insufficient for a passenger because of that passenger's physical, sensory or comprehension limitations or because that passenger is responsible for another person on board an aircraft, a PIC shall ensure that such passenger is given an individual safety briefing that is appropriate to his or her needs.

(3) A PIC shall ensure that, in an event of an emergency and where time and circumstances permit, all passengers are given an emergency briefing in accordance with the requirements prescribed in Document NAM-CATS 93.

(4) A PIC shall ensure that each passenger who is seated next to an emergency exit is made aware of how and is willing to operate that exit.

93.07.29 Safety features card

A CAO shall ensure that each passenger seat is equipped with a card containing safety features in pictographic form and wording in the English language.

93.07.30 Seat, seat safety belt, harness and child restraint device and carriage of an infant

(1) An aircraft shall only be operated if it is equipped, where applicable, with -

(a) a seat or berth for carriage of each person who is aged two years or more;

(b) a safety belt with or without a diagonal shoulder strap, or a safety harness, for use in each passenger seat for each passenger who is aged two or more;

(c) a safety belt for use in each passenger berth;

(d) a child restraint device for carriage of each child and infant as prescribed in Document NAM-CATS 93;

(e) a safety harness for each flight crew member seat, incorporating a device which shall automatically restrain the occupant's torso in the event of rapid deceleration; and

(f) a safety harness for each cabin crew member seat provided that a safety belt with one diagonal shoulder strap is permitted if fitting a safety harness is not reasonably practical.

(2) A seat for any cabin crew member shall, where possible, be located near a floor-level emergency exit and any additional cabin crew member-seat required shall be located such that a cabin crew member may best be able to assist any passenger in the event of an emergency evacuation: Provided such a seat shall be forward or rearward facing within 15º of the longitudinal axis of an aircraft.

(3) If a PIC cannot see all the passenger seats in an aircraft from his or her own seat, a means of indicating to all passengers and cabin crew members that seat belts should be fastened, shall be installed.

(4) A safety harness and safety belt shall have a single point release.

(5) A passenger shall not be responsible for the safety of more than one infant on board aircraft.

93.07.31 Carriage of persons with disability

(1) All flight crew members shall be responsible for identification, seating position and handling of a passenger with disability.

(2) A CAO shall ensure that-

(a) a PIC is notified when a passenger with a disability is to be carried on board;

(b) a passenger with a disability is not seated in a same row or a row directly forward or aft of an emergency exit;

(c) individual briefing on emergency procedures is given to a passenger with a disability and his or her able-bodied assistant, appropriate to the needs of such passenger; and

(d) a person giving a briefing on emergency procedures shall enquire as to the most appropriate manner of assisting a passenger with a disability so as to prevent pain or injury to such passenger.

(3) Subject to the provisions of sub-regulation (4), a person with disability may be carried on a stretcher in an aircraft only if-

(a) a stretcher is secured so as to prevent it from moving under a maximum acceleration likely to be experienced in flight and in an emergency alighting such as ditching;

(b) such a person is secured by an approved harness to a stretcher or aircraft structure; and

(c) is accompanied by an able-bodied assistant.

(4) A person not licensed in terms of Part 138 f these regulations may carry a patient on a stretcher only in case of an emergency as provided for in regulation 91.07.19 (4).

(5) Subject to the provisions of sub-regulation (6), a person with a certified mental disability may only be carried in an aircraft if-

(a) he or she is accompanied by an able-bodied assistant; and

(b) a medical certificate has been issued by a medical practitioner certifying that such a person with mental disability is suitable for carriage by air and that there is no risk of violence from such person.

(6) A CAO shall obtain a special permission from the Executive Director before carriage of a person with a mental disability who, according to his or her medical history, may become violent.

(7) A passenger with a splinted or artificial limb may travel unaccompanied provided he or she is able to assist himself or herself.

(8) An affected limb or supporting aids of a passenger referred to in sub-regulation (7), may not obstruct an aisle or any emergency exit or equipment.

93.07.32 Portable electronic devices

An operator of a flight referred to in this Part shall ensure that no person operates any portable electronic device on board such flight, except with a permission of a PIC.

SUBPART 8: AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

93.08.1 General requirements

(1) Any determination made for the purposes of this Subpart shall be based on approved performance data set out in an aircraft flight manual for an aircraft concerned.

(2) A person may deviate from the requirements of this Division if that person-

(a) is authorised to do so in his or her OpSpec; and

(b) complies with the requirements as prescribed in Document NAM-CATS 93.

(3) Where a person uses charts or graphs published in an approved aircraft flight manual, allowance shall be made to ensure any extract errors will be on a side of safety.

(4) A CAO shall adopt obstacle data sufficient to make accurate and safe performance calculations.

(5) A CAO shall ensure helicopter operations are conducted in a manner that gives appropriate consideration for achieving a safe forced landing in an event a safe continuation of flight is not assured following a critical power-unit-failure.

(6) An aircraft shall be operated in compliance with the terms of its certificate of airworthiness and within approved operating limitations contained in its flight manual.

(7) A flight may not be commenced with unless performance information provided in an aircraft flight manual, supplemented with data, indicates that the requirements prescribed in this Subpart shall be complied with for a flight to be undertaken.

(8) A PIC shall, before commencement of a flight, ensure that the following factors, as applicable to a phase of a flight, are taken into account-

(a) mass of an aircraft;

(b) operating procedures employed by an operator:

(c) pressure-altitude appropriate to an elevation of an aerodrome;

(d) ambient temperature:

(e) wind;

(f) runway slope (aeroplane only);

(g) condition of a runway surface at the expected time of use; and

(h) any other factor that can significantly affect a performance of an aircraft.

(9) The factors specified in sub-regulation (8) shall be taken into account either directly as operational parameters or indirectly by means of allowances or margins, which may be provided in a scheduling of performance data or in a comprehensive and detailed code of performance in accordance with which an aircraft is being operated.

(10) A CAO shall include in its operations manual –

(a) operating instructions and data on aeroplane climb performance for existing take-off conditions; and

(b) information to enable a PIC to determine climb gradient and intended take-off technique.

Division One: Aeroplane limitations

93.08.2 Take-off mass limitations

(1) A person may not conduct a take-off in an aircraft if a mass of an aircraft-

(a) exceeds the MTOM specified in an aircraft flight manual for a pressure altitude and an ambient temperature at an aerodrome where such a take-off is to be made; or

(b) after allowing for planned fuel consumption during a flight to a destination aerodrome or alternate aerodrome, exceeds a landing mass specified in an aircraft flight manual for a pressure altitude and an ambient temperature at a destination aerodrome or alternate aerodrome.

(2) For the purposes of determination of MTOM referred to in sub-regulation (1)-

(a) a required accelerate-stop distance shall not exceed an accelerate-stop distance available;

(b) a required take-off run shall not exceed a take-off run available; and

(c) a required take-off distance shall not exceed a take-off distance available.

(3) The following factors shall be taken into account for the purposes of sub-regulation (2)-

(a) mass of an aircraft;

(b) specific operating procedures;

(c) pressure altitude at an aerodrome;

(d) ambient temperature;

(e) runway slope in a direction of take-off;

(f) reported headwind component, which shall not be more than 50 percent;

(g) reported tailwind component, which shall not be less than 150 percent;

(h) loss of effective take-off run available during runway alignment except where rolling take-off is approved;

(i) where a runway condition is other than bare and dry, appropriate penalty based upon a runway condition or contaminates such as slope, ice, snow, slush, standing water or water surfaces for seaplanes, shall be factored into a performance calculation; and

(j) any other factor that may significantly affect an aircraft performance.

93.08.3 Net take-off flight path

(1) A person may not conduct a take-off in an aircraft if a mass of such aircraft is greater than a mass specified in such aircraft flight manual as allowing a net take-off flight path that clears all obstacles by at least 35 feet vertically or at least 62 meters horizontally within an aerodrome boundaries and by at least 95 meters horizontally outside such boundaries.

(2) In determining a maximum mass, minimum distances and flight path referred to in sub-regulation (1)-

(a) corrections shall be made for-

(i) runway to be used;

(ii) runway slope in a direction of take-off;

(iii) pressure-altitude at an aerodrome;

(iv) ambient temperature; and

(v) wind component at a time of take-off, where not more than 50 percent of reported headwind component or not less than 150 percent of reported tailwind component may be considered; and

(b) calculations shall be based on a pilot-

(i) not banking an aircraft before reaching an altitude of 50 feet;

(ii) subject to sub-regulation (3), using 15 degrees or less of bank at or below 400 feet; and

(iii) using not more than 25 degrees of bank thereafter, aircraft speed and configuration permitting.

(3) A bank angle greater than the 15 degrees referred to in sub-regulation (2)(b)(ii) may only be used if authorised by the Executive Director.

(4) A CAO shall issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable a PIC to determine a climb gradient that can be achieved during a departure phase for an existing take-off condition and intended take-off technique.

(5) Information referred to in sub-regulation (4) shall be included in an operations manual.

93.08.4 Dispatch limitations: landing at destination and alternate aerodromes

(1) A person may not dispatch or conduct a take-off in an aircraft unless-

(a) if obstacles in an approach path has been cleared in both an aerodrome of intended landing and alternate aerodrome;

(b) such aircraft is able to land on a runway with an assurance that it shall come to a stop; or

(c) for a seaplane, with a satisfactorily low speed within a landing distance available as per such aircraft flight manual.

(2) Where an aerodrome of intended landing has noise criteria that may require a landing mass reduction, a take-off mass shall be adjusted to comply with such limitations.

93.08.5 Dispatch limitations: wet runway - turbojet- or turbofan-powered aircraft

(1) Where a runway is wet and contaminated, a turbojet or turbofan-powered aircraft shall be operated in accordance with restrictions contained in such aircraft flight manual and operator's operations manual and standard OpSpec.

Division Two: Helicopter limitations

93.08.6 Helicopter limitations

A person operating a helicopter under this Part shall comply with helicopter limitations contained in Subpart 8 of Part 127 these regulations.

SUBPART 9: MAINTENANCE CONTROL

93.09.1 General

(1) A CAO may not operate an aircraft under this Part unless such aircraft is maintained in accordance with Parts 21 and 43 of these regulations.

(2) A CAO shall ensure that an aircraft is maintained in accordance with an approved aircraft maintenance programme.

(3) A maintenance programme referred to in sub-regulation (2) shall be provided to maintenance personnel and such other personnel as may be required.

93.09.2 Aircraft maintenance program

(1) A maintenance programme referred to in regulation 93.09.1(2) shall be developed for each aircraft and shall contain the following information-

(a) maintenance tasks and intervals at which these tasks are to be performed, taking into account an anticipated utilisation of an aircraft;

(b) where applicable, a continuing structural integrity program;

(c) procedures for changing or deviating from paragraphs (a) and (b); and

(d) where applicable, condition monitoring and reliability program descriptions for aircraft systems, components and power-plants.

(2) Maintenance tasks and intervals that have been specified as mandatory in approval of a type design shall be identified as such.

(3) A design and implementation of a maintenance program shall observe human factors principles.

(4) Upon approval of the Executive Director, copies of all amendments to a maintenance programme shall be furnished promptly to all organisations or persons to whom a maintenance programme has been issued.

93.09.3 Maintenance contracted to approved AMO

A CAO may only contract out its maintenance to a holder of an AMP approval with appropriate rating issued in terms of Part 145 of these regulations.

93.09.4 Operator's maintenance responsibilities

(1) A CAO shall establish procedures acceptable to the Executive Director that ensure-

(a) each aircraft operated is maintained in an airworthy condition;

(b) operational and emergency equipment necessary for an intended flight are serviceable; and

(c) maintenance of validity of a certificate of airworthiness of each aircraft operated.

(2) A CAO may not operate an aircraft unless it is maintained and released to service by an organisation approved in terms of Part 145 of these regulations.

(3) A CAO shall be resourced sufficiently to ensure that all maintenance is carried out in accordance with a maintenance control manual referred to in regulation 93.09.5.

(4) A CAO shall ensure that maintenance of its aircraft is performed in accordance with approved maintenance program.

93.09.5 Operator's maintenance control manual

(1) A CAO shall provide a maintenance control manual that meets the requirements prescribed in Document NAM-CATS 43 for the use and guidance of maintenance and operational personnel concerned.

(2) A maintenance control manual referred to in sub-regulation (1) shall incorporate relevant principles of human factors.

(3) If a CAO develops a separate maintenance control manual as part of an operations manual system, two copies of a proposed maintenance control manual shall be provided to the Executive Director for approval.

(4) A CAO shall amend its maintenance control manual as necessary in accordance with amendment procedures contained in a maintenance control manual, in order to keep information contained therein up-to-date and accurately reflect a CAO policy with respect to maintenance of its aircraft.

(5) A CAO shall forward two copies of amendments to a maintenance control manual to the Executive Director for approval.

(6) Upon receipt of approved amendment, each holder of a maintenance control manual shall be furnished a copy of such amendment with clear instructions to insert amended pages in a timely manner into a maintenance control manual.

(7) The Executive Director may require a CAO to amend a maintenance control manual where he or she is of the opinion that such maintenance control manual requires updating.

93.09.6 Maintenance records

(1) The following records shall be kept, transferred and maintained in a form and format that ensures readability, security and integrity of records at all times for each aircraft:

(a) total time in service, including hours, calendar time and cycles, of an aircraft and all its life limited components;

(b) current status of compliance with all mandatory continuing airworthiness information;

(c) appropriate details of modification and repair;

(d) time in service including hours, calendar time and cycles, as appropriate since last overhaul of an aircraft or its components subject to a mandatory overhaul life;

(e) status of an aircraft's compliance with its maintenance program; and

(f) detailed maintenance record to show that the requirements for signing of a maintenance release have been met.

(2) A CAO shall describe in its maintenance control manual a person who is responsible for retention of records required by subregulation (1) and where they will be kept.

(3) The records referred to in subregulation (1) shall be kept as follows -

(a) for records referred to in paragraphs (a) to (e) for a minimum period of 90 days after a unit to which they refer has been permanently withdrawn from service; and

(b) for records referred to in paragraph (f), for a minimum period of 5 years after the signing of a maintenance release.

(4) The records referred to in subregulation (1) shall be made available to a new operator in the event of a temporary or permanent change of operator of an aircraft.

93.09.7 Continuing airworthiness information

(1) An owner or operator of an aeroplane, of MTOM in excess of 5 700 kg or any helicopter, shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide such information as required by the Executive Director using a reporting designed for that purpose by the Executive Director.

(2) The Executive Director shall transmit all mandatory continuing airworthiness information reported to him or her in accordance with sub-regulation (1) to a State of Design of an aircraft that has been issued a Namibian certificate of airworthiness and operated in terms of this Part.

(3) A person referred to in sub-regulation (1) shall obtain and assess continuing airworthiness information and recommendations issued by an aircraft manufacturer, an organisation responsible for an aircraft type design or by a State of Design, or any additional requirements issued by the Executive Director for each type of aircraft operated under this Part and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the Executive Director.

93.09.8 Modifications and repairs

(1) All modifications and repairs done on an aircraft shall comply with airworthiness requirements acceptable to the Executive Director.

(2) A CAO shall establish procedures to ensure that substantiating data supporting compliance with airworthiness requirements are retained.

SUBPART 10: QUALITY SYSTEMS

93.10.1 Requirements for QMS

(1) A CAO shall establish a QMS that meets requirements prescribed in Document NAM-CATS 93.

(2) A QMS referred to in sub-regulation (1) shall-

(a) include a quality assurance program that contains procedures designed to verify that all operations are being conducted in accordance with all applicable requirements, standards and procedures; and

(b) be described in relevant documentation as prescribed in Document NAM-CATS 93.

(3) A CAO shall designate a person responsible for the QMS who meets qualifications and experience requirements and who will be responsible for the functions as prescribed in Document NAM-CATS 93.

(4) A CAO shall prepare a quality management manual that meets the requirements prescribed in Document NAM-CATS 93.

(5) Notwithstanding sub-regulation (3) above, an operator may appoint two quality managers, one for flight operations and one for maintenance: Provided an operator has designated one single quality management unit to ensure that a quality system is applied uniformly throughout an entire operation.

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NON-COMMERCIAL COMPLEX AEROPLANE OPERATIONS

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93.02.2 MINIMUM REQUIREMENTS FOR ASSIGNMENT AS PILOT-IN-COMMAND

1. Flight time experience

(1) No person shall act as the pilot-in-command (PIC) of a passenger-carrying aircraft in accordance with CAR Part 93 unless -

(a) in the case of an aeroplane -

(i) on a IFR flight, the person has acquired at least 500 hours of flight time; and

(ii) on a day or night VFR flight, the person has acquired not less than 350 hours of flight time.

(b) in the case of a helicopter with a maximum certified take off mass > 2 730 kg or a maximum certified seating configuration >10 passengers -

(i) on a IFR flight, the person has acquired at least 1 200 hours of flight time; and

(ii) during the day or night VFR, the person has acquired at least 500 hours of flight time.

(2) No person shall conduct single-pilot helicopter operations unless he or she -

(a) has met the recency requirements specified in CAR 91.02.4 (1), (2) and (4) as the sole pilot of the helicopter;

(b) has successfully completed the relevant training, including passenger briefing with respect to emergency evacuation, autopilot management and the use of simplified in-flight documentation; and

(c) has successfully completed a PPC while acting as the sole pilot of the helicopter in an environment representative of the operation.

2. Operating experience

(1) In addition to the requirements in section 3 of this Part -

(a) A corporate aviation operator of an aircraft shall establish procedures to ensure a pilot is not assigned as the PIC following conversion to a new type of aircraft or upgrading to the PIC position on the same or a different aircraft unless adequate in-flight orientation and familiarization has taken place.

(b) The procedures specified in subsection (1) shall include a line induction programme during which a PIC on a new type of aircraft or recently upgraded PIC shall, under the supervision of a PIC qualified to conduct line induction training and designated by the operator, acquire operational flight time comprised of a minimum number of sectors and/or hours of flight time. The minimum number of sector/flight hours shall be published in the operations manual.

Note - *Operational flight time means flight time acquired in addition to any training time*.

(c) A pilot shall not be authorised to operate as an unrestricted PIC until the operator is satisfied that such pilot is capable of operating safely without supervision and the pilot's training records have been annotated accordingly.

(d) Following the line induction programme, the operator shall consider mitigating the risks associated with low experience levels through the implementation of some or all of the following -

(i) limiting the authorised radius of action of the aircraft;

(ii) imposing higher route and aerodrome operating minima;

(iii) increased operational oversight;

(iv) ensure the ability to communicate with the operator as required;

(v) crew with an experienced second-in-command (for two crew operations); or

(vi) additional line training.

(e) The PIC, or responsible person, operating an aircraft mentioned in CAR 93.01.1(1)(a) or (b), shall ensure that the PIC has undergone adequate inflight orientation and familiarisation, following a conversion to a new type of aircraft or an upgrade to the PIC position.

(f) In addition to paragraph (e) the PIC shall, under the supervision of a PIC qualified to conduct line induction training, acquire operational flight time comprised of a minimum number of sectors and/or hours of flight time.

93.02.14 FLIGHT TIME AND DUTY PERIOD SCHEME

Note - *CAR 93.02.14 requires each operator, or PIC, to establish a scheme for the administration of flight time and duty periods. Operators and the PIC are reminded that they bear sole responsibility for such schemes being in full compliance with any Acts, Laws and Regulations that are external to the Namibia Civil Aviation Regulations, notwithstanding any approvals given by the Executive Director.*

1. General

Time spent on flight watch or home reserve is deemed to be part of a rest period as provided in section 8(4)(e) of this technical standard.

2. Maximum flight time

(1) An operator may not allow nor may a flight crew member exceed the following maximum flight times -

(a) 10 hours during any duty period of which a maximum of eight hours may be consecutive, except that single-pilot night VFR or IFR operations in an aircraft without a serviceable autopilot are restricted to 8 hours in a duty period;

(b) during the preceding seven days -

(i) for a single-pilot operation, 35 hours;

(ii) for a multi-pilot operation, 40 hours; and

(iii) for mixed single- and multi-pilot operations, 37.5 hours;

(c) during the preceding thirty days -

(i) for a single-pilot operation, 100 hours;

(ii) for a multi-pilot operation, 120 hours; and

(iii) for mixed single- and multi-pilot operations, 110 hours;

(d) 300 during the preceding 90 days; or

(e) 1 000 hours during the preceding 365 days.

(2) If a flight crew member expects his or her projected cumulative flight hours for a particular operation to exceed the appropriate limit, the flight crew member shall inform the operator or responsible person accordingly.

3. Approval of a flight time and duty period scheme

(1) A Corporate Aviation Operator shall submit a proposed scheme for the regulation of flight time and duty periods and minimum rest periods to the Executive Director for approval.

(2) Any deviation from the approved scheme shall be submitted to the Executive Director for consideration.

(3) With regards to operators operating under CAR 93.01.1(1)(a) or (b), the scheme developed by the PIC or responsible person does not need to be approved by the Executive Director. However, as per CAR 93.02.14(2), the flight time and duty periods shall be retained and available for inspection on request by the Executive Director.

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

(1) The prime objective of any scheme of flight time and duty limitations is to ensure that flight crew members are adequately rested at the beginning of each flight duty period (FDP). Corporate Aviation Operators, and the PIC, 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 rest; and

(c) cumulative duty hours within specific periods.

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

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

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

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

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

5. Responsibilities of flight crew members

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

6. Standard provisions required for a flight time and duty period scheme

(1) The standard provisions which the Executive Director regards as the basis for an acceptable scheme of flight time and duty limitations and which, if included in an operator's scheme, will facilitate approval by the Executive Director are contained in sections 7 to 14 below.

(2) Although corporate aviation operators, and the PIC or responsible person, are expected to plan their schemes in accordance with the requirements, it is however, recognised that the standard provisions will

not necessarily be completely adaptable to every kind of operation. In exceptional circumstances therefore, operators may apply to have variations from the standard provisions included in their schemes. However, such variations should be kept to a minimum and approval, or exemption, will only be granted where an operator can show that these proposed provisions will ensure an equivalent level of protection against fatigue.

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

Note - *The tables referred to in this section may be found in section 13 of this technical standard*.

7.1. Maximum rostered flight duty periods

(1) The maximum rostered FDP (in hours) shall be in accordance with Table 1, or Table 2 or 3, or Table 4 or 5 and with Table 6 for helicopter operations. Rostering limits in the tables may be extended by in-flight relief or split duty under the terms of sections 7.2 and 7.3. On the day, the PIC may at his or her discretion further extend the FDP actually worked in accordance with section 7.6.

(2) Maximum FDP - Two pilot crews (Aeroplane only)

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

(3) Maximum FDP - Two pilots plus additional flight crew member (Aeroplane only)

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

(4) Limits on two flight crew long range operations (Aeroplane only)

(a) When an aeroplane flight deck crew comprises only two pilots, the allowable FDP is calculated as follows. A sector scheduled for more than 7 hours is considered as a multi-sector flight, as below -

Scheduled sector times	Acclimatised to local time	Not acclimatized to local time
Sector length over 7 hrs but not more than 9 hrs	2	4
Sector length over 9 hrs but not more than 11 hrs	3	4
Sector length over 11 hrs	4	Not applicable

(b) Table 2 is then entered with the start time of the flight duty period and the "modified" number of sectors, to determine the allowable FDP.

(c) When an additional, current, type rated pilot is a flight crew member, then these limits do not apply and the permissible FDP is determined by entering Table 2 or 3 with time of start and the actual sectors planned.

(5) Maximum FDP: Helicopters - refer to Section 13, Table 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 shall 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 shall be available, for the flight crew member who is resting, a comfortable reclining seat or bunk separated and screened from the flight deck and passengers.

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

(a) if rest is taken in a bunk, a period equal to one half of the total of rest taken, provided that the maximum FDP permissible is 18 hours; 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 hours.

(4) The maximum extension allowable is equivalent to that applying to the basic flight crew member with the least rest.

(5) 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 section 7.4.

7.3. Extension of flight duty period by split duty

(1) When a FDP consists of two or more flight 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 hours rest	Maximum extension of the FDP
Less than 3 3 - 10	Nil Period equal to half of the consecutive hours rest taken

(2) The rest period shall 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 shall be provided.

7.4. Positioning

All time spent on positioning as required by the operator is classed as duty, but positioning as a passenger 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 section 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 or responsible person, exceeds thirty minutes each way, the rest period shall 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 section 7.4.

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

Note - *It is important to note that the PIC discretion shall take into consideration whether or not a ". . . crew member is suffering from or, having regard to the circumstances of the flight to be undertaken, is likely to suffer from fatigue which may endanger the safety of the aircraft or its flight crew members and passengers . . ." as specified in CAR 93.02.14(3)(b).*

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

(2) Whenever a PIC, operating for a Corporate Aviation Operator, exercises his or her discretion, he or she shall report it to the operator. This report shall be retained for inspection purposes.

(3) Should a PIC, operating in accordance with CAR 93.01.1(1)(a) or (b), exercise his or her discretion, a report shall be retained within the flight and duty scheme records, referred to in CAR 93.02.14(2).

(4) Should the maximum normally permitted be exceeded by more than two hours, both the PIC and, where applicable the corporate aviation operator, shall submit a written PIC's discretion report - extension of flight duty period, to the Executive Director within thirty days.

Notes -

1. *Discretion reports either concerning extension of a FDP in excess of two hours or reduction of a rest period shall be submitted to the Executive Director. Those reports will be used by the Executive Director when assessing the realism of particular schedules. The information required to be submitted and an example of the form may be obtained from the NCAA.*

2. *An emergency in respect of an extension of a FDP is a situation which in the judgment of the PIC 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 subsection 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

Pilots engaged in repetitive short flights, with an average of ten or more take-offs and landings per hour shall have a break of at least thirty minutes away from the helicopter within any continuous period of three hours.

8. Rest periods

(1) The Corporate Aviation Operator or responsible person shall, where practicable, notify flight crew members of a FDP and not schedule them for duty other than flight watch or home reserve, so that adequate and, within reason, uninterrupted pre-flight rest can be obtained by the flight crew before the commencement of the next flight duty period. Away from base the Corporate Aviation Operator, or responsible person, shall provide the opportunity and facilities for the flight crew to obtain adequate pre-flight rest.

(2) The Corporate Aviation Operator is responsible to ensure that rest accommodation is satisfactory. When operations are carried out at such short notice that it is impracticable for the operator to ensure that rest accommodation is satisfactory, it will be the PIC's responsibility to obtain satisfactory accommodation.

(3) The PIC of an aircraft operated in accordance with CAR 93.01.1 (1) (a) or (b) shall be responsible to ensure the rest accommodation is satisfactory for all flight crew members.

(4) The following rest period requirements shall be followed -

(a) each flight duty period, as well as flight watch and home reserve, shall be preceded by a rest period of at least -

(i) nine consecutive hours including a local night;

(ii) ten consecutive hours; or

(iii) if the preceding FDP, adjusted for split duty, exceeds eleven hours, an additional rest period shall be provided for in the flight time and duty period scheme to the satisfaction of the Executive Director;

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

(c) following fifty hours (helicopters: sixty hours) of duty of any nature associated with his or her employment, except flight watch and home reserve duty, a flight crew member shall have a rest period of not less than twenty-four consecutive hours before commencing further duties;

(d) when a flight crew member has completed a FDP in excess of eighteen hours, he or she shall receive a rest period of at least eighteen hours including a local night before he or she commences any further duties; and

(e) time spent on flight watch and home reserve duty prior to a FDP shall not be counted when determining the limitations associated with the flight duty period.

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

(a) A PIC may, at his or her discretion, reduce a rest period to below the minimum required by this technical standard. The exercise of such discretion shall be considered exceptional and should not be used to reduce successive rest periods. A rest period shall be long enough to allow flight crew members at least eight hours rest at the accommodation where the rest is taken.

(b) If a rest period is reduced, the PIC shall submit a report to the Corporate Aviation Operator, where applicable. Alternatively, the report shall be retained within the flight and duty scheme records, referred to in CAR 93.02.14(2).

(c) If the reduction exceeds two hours, a written report shall be submitted to the Executive Director within thirty days. (See note 1 to section 7.6).

(6) For the purpose of calculating the minimum rest period before commencement of flight duty, 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 subsection (2) apply.

** However, the provisions of section 7.4 apply.

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

(a) for the calculation of accumulated duty time in terms of section 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 shall count fully as duty time for the calculation of accumulated duty time in terms of sections 8(4)(c) and (d) and 11; and

(c) see section 7.4 in respect of positioning time.

10. Days off

(1) Flight crew members shall -

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

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

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

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

11. Cumulative duty hours

(1) For aeroplanes:

The average weekly total of duty hours may not exceed sixty hours over seven days or fifty hours averaged over any four consecutive weeks. All types of duty, flight duty, 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 duty other than flight duty, flight watch or home reserve, standby or positioning is not included in calculating the above average weekly total of duty hours.

(2) For helicopters:

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 duty other than flight duty, flight watch or home reserve, standby or positioning is not included in calculating the above average weekly total of duty hours.

12. Cabin crew members

For cabin crew member FDP requirements, refer to NAM-CATS 121.02.13(12).

13. Tables

Table 1: Maximum flight duty period: Single-pilot crews - aeroplanes certified for single-pilot operations

Local time of start	Up to 4	5	6	7	8 or more
0500 – 0659	10	9 ¼	8 ½	8	8
0700 – 1359	11	10 ¼	9 ½	8 ¾	8
1400 – 2059	10	9 ¼	8 ½	8	8
2100 – 0459	9	8 ¼	8	8	8

Note - *Pilots engaged in repetitive short flights, with an average eight or more take-offs and landings per hour, shall have a break of at least thirty minutes within any continuous period of three hours away from the aircraft; however for the purpose of this technical standard each such series of repetitive flights shall be counted as a single sector*.

Table 2: Maximum flight duty period: Two pilot crews - aeroplanes: Acclimatised to local time

Local time of start	Sectors							
	1	2	3	4	5	6	7	8 or more
0500 – 0659	13	12 ¼	11 ½	10 ¾	10	9 ¼	9	9
0700 – 1359	14	13 ¼	12 ½	11 ¾	11	10 ¼	9 ½	9
1400 – 2059	13	12 ¼	11 ½	10 ¾	10	9 ¼	9	9
2100 – 0459	12	11 ¼	10 ½	9 ¾	9	9	9	9
2200 – 0459	11	10 ¼	9 ½	9	9	9	9	9

Table 3: Maximum flight duty period: Two pilot crews - aeroplanes: Not acclimatised to local time

Length of preceding rest (hours)	Sectors						
	1	2	3	4	5	6	7 or more
Up to 18 or over 30	13	12 ¼	11 ½	10 ¾	10	9 ¼	9
Between 18 and 30	12	11 ¼	10 ½	9 ¾	9	9	9

Note - *The reason that available duty times are less following rest periods inside 18-30 hours is based on the fact that the aeromedical advice that the quality of rest is less due to the disturbance of the body's natural rhythm.*

Table 4: Maximum flight duty period: Basic crew consisting of three flight crew members - aeroplanes certified for three crew members: Acclimatised to local time

Local time of start	Sectors							
	1	2	3	4	5	6	7	8 or more
0500 – 0659	13	12 ¼	11 ½	10 ¾	10	9 ¼	9	9
0700 – 1359	14	13 ¼	12 ½	11 ¾	11	10 ¼	9 ½	9
1400 – 2059	13	12 ¼	11 ½	10 ¾	10	9 ¼	9	9
2100 – 2159	12	11 ¼	10 ½	9 ¾	9	9	9	9
2200 – 0459	11	10 ¼	9 ½	9	9	9	9	9

Table 5: Maximum flight duty period: Basic crew consisting of three flight crew members aeroplanes certified for three flight crew members: Not acclimatised to local time

Length of preceding rest (hours)	Sectors						
	1	2	3	4	5	6	7 or more
Up to 18 or over 30	13	12 ¼	11 ½	10 ¾	10	9 ¼	9
Between 18 and 30	12	11 ¼	10 ½	9 ¾	9	9	9

Note - *The reason that available duty times are less following rest periods inside 18-30 hours is the aeromedical advice that the quality of rest is less due to the disturbance of the body's natural rhythm*.

Table 6: Maximum flight duty period and flight times: Helicopters

Local time of start	Single pilot		Two pilots	
	Maximum length of flight duty period	Maximum flight time	Maximum length of flight duty period	Maximum flight time
0600 – 1759	10	7	12	8
1800 – 0559	9	6	12	7

14. Flight operations officer or flight follower maximum duty and rest periods

(1) A Corporate Aviation Operator's flight time and duty period scheme shall include the requirements detailed in this section applicable to all flight operations officers and flight followers.

(2) The flight time and duty period scheme shall comply with technical standard 121.02.13(13).

15. Records to be maintained

(1) A Corporate Aviation Operator shall retain flight crew member flight time and duty period records as provided in CAR 93.04.5.

(2) An operator shall retain all PIC discretion reports of extended flight duty periods and reduced rest periods for a period of at least six months.

(3) A flight crew member, operating in accordance with CAR 93.01.1 (1) (a) or (b), shall retain flight time and duty records as provided in CAR 93.02.14 (2), for a period of at least 90 days. These records shall include PIC discretion reports of extended flight duty periods and reduced rest periods.

93.02.15 FATIGUE RISK MANAGEMENT SYSTEM (CAOC HOLDERS ONLY)

1. Fatigue risk management policy

(1) An air service operator's FRMS policy shall -

(a) clearly identify all elements of the FRMS;

(b) define the scope of the operations in the operations manual;

(c) reflect the shared responsibility of management, flight; cabin crew and other involved personnel;

(d) require that clear lines of accountability for management, flight and cabin crew and other involved personnel are identified;

(e) clearly state the safety objectives of the FRMS;

(f) be signed by the accountable executive of the organisation;

(g) be communicated, with visible endorsement, to all the relevant areas and levels of the organisation;

(h) declare management commitment to effective safety reporting;

(i) declare management commitment to the provision of adequate resources for the FRMS;

(j) declare management commitment to continuous improvement of the FRMS; and

(k) document periodic reviews to ensure it remains relevant and appropriate.

(2) FRMS manual

(a) An air service operator shall develop and keep a current FRMS manual that defines and records the following -

(i) FRMS policy and objectives;

(ii) FRMS processes and procedures;

(iii) accountabilities, responsibilities and authorities for these processes and procedures;

(iv) mechanisms for on-going involvement of management, flight and cabin crew members and all other involved personnel;

(v) FRMS training programmes, training requirements and attendance records;

(vi) scheduled and actual flight times, duty periods and rest periods with significant deviations and reasons for such deviations; and

(vii) FRMS outputs including findings from collected data, recommendations, and actions taken.

Note - *This manual may be incorporated into the SMS manual of the system of operations manuals*.

2. Fatigue risk management processes

2.1. Identification of hazards

(1) When identifying hazards, an air service operator shall develop and maintain the following three fundamental and documented processes for fatigue hazard identification -

(a) The predictive process which shall identify fatigue hazards by examining crew scheduling and taking into account factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include but are not limited to -

(i) Operator or industry operational experience and data collected on similar types of operations;

(ii) Evidence-based scheduling practices; and

(iii) Bio-mathematical models.

(b) The proactive process which shall identify fatigue hazards within current flight operations. Methods of examination may include but are not limited to -

(i) Self-reporting of fatigue risks;

(ii) crew fatigue surveys;

(iii) relevant flight and cabin crew performance data;

(iv) available safety databases and scientific studies; and

(v) analysis of planned versus actual time worked.

(c) The reactive process which shall identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimised. At a minimum, the process may be triggered by any of the following -

(i) fatigue reports;

(ii) confidential reports;

(iii) audit reports;

(iv) incidents; and

(v) flight data analysis events.

(2) Risk assessment

(a) An air service operator shall develop and implement risk assessment procedures that determine the probability and potential severity of fatigue-related events and identify when the associated risks require mitigation. The risk assessments procedures shall review identified hazards and link them to the following -

(i) operational processes;

(ii) their probability;

(iii) possible consequences; and

(iv) the effectiveness of existing safety barriers and controls.

(b) An air service operator shall develop and implement risk mitigation procedures that -

(i) select the appropriate mitigation strategies;

(ii) implement the mitigation strategies; and

(iii) monitor the strategies implementation and effectiveness.

3. FRMS safety assurance processes

(1) An air service operator shall develop and maintain FRMS safety assurance process to attain the following-

(a) Provide for continuous FRMS performance monitoring, analysis of trend, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to the following -

(i) hazard reporting and investigations;

(ii) audits and surveys; and

(iii) reviews and fatigue studies;

(b) Provide a formal process for the management of change which shall include but is not limited to the following -

(i) Identification of changes in the operational environment that may affect FRMS;

(ii) identification of changes within the organisation that may affect FRMS; and

(iii) consideration of available tools which could be used to maintain or improve FRMS performance prior to implementing changes; and

(iv) provide for the continuous improvement of the FRMS. This shall include but is not limited to the following -

(aa) the elimination or modification of risk controls have had unintended consequences or that are no longer needed due to changes in the operational or organisational environment;

(bb) routine evaluations of facilities, equipment, documentation and procedures; and

(cc) the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.

4. FRMS promotion processes

(1) An air service operator shall support the on-going development of the FRMS, the continuous improvement of its overall performance, and attainment of optimum safety levels. The following shall be established and implemented by the air service operator as part of its FRMS -

(a) training programmes to ensure competency commensurate with the roles and responsibilities of management, flight and cabin crew, and all other relevant personnel under the planned FRMS; and

(b) an effective FRMS communications plan that ensures the following -

(i) FRMS policies, procedures and responsibilities are explained to all relevant stakeholders; and

(ii) communication channels used to gather and disseminate FRMS related information are described.

Note - *The FRMS shall reside within a SMS*.

93.03.1 TRAINING AND CHECKING PROGRAM

1. Applicability of training

(1) For the purposes of this section -

"the Corporate Aviation Operator" means the operator employing a pilot whose training was conducted by another operator; and

"the other operator" means the operator who conducted the training on the pilot.

(2) Except as provided in subsections (3) and (4), each person employed by an operator and required to receive the training specified in this technical standard shall take such training from that operator or a contracted organisation, as provided in section 2 of this technical standard.

(3) The initial and recurrent ground training requirements specified in CAR Part 93 Subpart 3 for a pilot on an aeroplane type certificated for a maximum mass of 5 700 kg or less and helicopter type certificated for a maximum mass of 3 180 kg or less shall be deemed to be completed by the operator if completed as part of another Namibia operator's approved training program: Provided that the other operator operates the same aircraft type and -

(a) in the event the operator's aircraft are different models than those upon which the other operator's ground training was based, the operator ensures such pilot receives additional training covering any differences between the models, including, at least, systems differences, engine/airframe limitations, performance considerations and operating characteristics;

(b) in the event the operator's aircraft are equipped with different ancillary equipment than those upon which the other operator's ground training was based or not given, such as navigational aids, auto flight system, flight director or flight management system (FMS), airborne collision avoidance system (ACAS), terrain awareness and warning system (TAWS), weather radar, etc., the operator shall provide training on such equipment; and

(c) the operator establishes, through the administration of a technical ground examination, that the pilot has adequate knowledge of the different models of aircraft and equipment noted in paragraphs (a) and (b) above.

(4) The initial and recurrent flight training requirements specified in CAR Subpart 3 for a pilot on an aeroplane type certificated for a maximum mass of 5 700 kg and helicopter type certificated for a maximum mass of 3 180 kg or less shall be deemed to be completed by the operator if completed as part of another Namibia operator's approved training program: Provided that such training included at least the number of flight hours as that approved for the operator and, prior to conducting a commercial air transport operation, -

(a) the corporate aviation operator or responsible person ensures such pilot receives flight training on any differences that may exist between the operator's model of aircraft and that on which the original training took place, including, at least, safety equipment, systems, engine or airframe, performance and operating characteristics differences;

(b) the corporate aviation operator or responsible person ensures such pilot receives flight training in the use of any equipment installed in its aircraft that was not installed in the other operator's aircraft on which the training took place, such as navigational aids, auto flight system, flight director or FMS, ACAS, TAWS, weather radar, etc., in each aircraft he or she is to fly or an approved flight simulation training device (FSTD); and

(c) the corporate aviation operator ensures such pilot receives flight training and becomes proficient in the use of the operator's SOPs in each aircraft he or she is to fly or an approved full flight simulator (FFS) of the type to be flown.

Notes -

1. An operator may not have to complete the training on each aircraft type if training credits have been approved as provided in sub- subsection 2.5.1 of TS 93.03.3.

2. In the event additional training is required as a result of this technical standard, the operator shall conduct a proficiency check on the pilot following such training to ensure the pilot is familiar with any aircraft differences and is competent in the use of all aircraft equipment and the operator's SOPs.

(5) The Corporate Aviation Operator accepting the training of another operator shall maintain on its training file for such pilot, detailed records of the other operator's and its own training, including at least -

(a) the name of the organisation conducting the training, if other than the operator;

(b) the name of the person having conducted the training and, in the case of flight training, his or her licence number;

(c) the location where the training was completed;

(d) the date the training was completed;

(e) the type, model and registration of the aircraft on which the flight training or any proficiency check was completed;

(f) copies of ground examinations or other approved means of demonstrating adequate knowledge of the aircraft and its equipment;

(g) copies of any proficiency checks completed on the pilot; and

(h) verification by the operator that the training was successfully completed.

(6) The operator shall publish procedures in its operations manual to ensure that for each case in which another operator's training is to be accepted, the operator has -

(a) identified what differences exist, if any, between its aircraft and those used by the other operator for the training and that such differences have been incorporated into its training program; and

(b) determined whether or not the SOPs used for the other operator's training are the same as those used by the operator.

2. Equipment, facilities and personnel of a training program

(1) A Corporate Aviation Operator shall ensure that its training equipment and facilities and personnel are adequate for their intended purpose.

(a) Equipment - While no specific standards are published for the training equipment used as teaching aids, a benchmark is whether or not the information being presented is done so through the use of adequate training aids so as to make the material understandable to the trainee. Equipment will be assessed against state of the art training aids with reasonable consideration given to the scope and size of the operator.

(b) Facilities - Training facilities, like equipment, are assessed for their suitability by a comparison with state of the art training facilities giving due consideration to the scope and size of the operator.

Facilities normally must be such that the trainee will not be distracted from the course material or training aids being displayed and provide an environment conducive to learning. Control over lighting, noise, temperature, location, orientation and general comfort of learning stations and where needed, sound enhancement or amplification must be favourable to a learning environment.

Note - *While no hard benchmarks are imposed for the acceptability of an operator's training equipment and facilities, it will follow that the training times proposed will be assessed in light of the operator's ability to effectively transfer the required information which will in turn depend upon the equipment and/or facilities at the disposal of the training personnel*.

(c) Personnel - The qualifications of training and checking personnel as specified in section 4 of this TS shall be documented by the operator.

3. Use of FSTD's for training and checking

3.1. Aeroplanes

(1) It is anticipated that in the delivery of its flight training program an operator will make every reasonable effort to use the most updated FSTDs where such are available to the operator.

(2) Except as provided in subsections (4) and (5), the use of a full flight simulator (FFS) of the type to be flown is mandatory for initial and recurrent training and checking on aircraft of a maximum certificated mass (MCM) exceeding 15 000kg for the following exercises -

(a) engine failure at V1*;

(b) low and high speed rejected take-offs;

(c) low visibility operations (LVTO, CAT II/III), if applicable*;

(d) asymmetric flap and spoiler deployments;

(e) uncommanded/runaway flap and spoiler deployments;

(f) jammed or inoperative pitch trim (occurring at both high and low speed);

(g) jammed or inoperative primary flight controls;

(h) upset attitude recovery;

(i) uncommanded/runaway auto-flight system control inputs (pitch, roll and yaw);

(j) erroneous pitot-static and gyro instrument indications;

(k) ACAS TA's/RA's*;

(l) TAWS events*;

(m) windshear on final approach and after take-off*;

(n) turbulence penetration and updraft/downdraft;

(o) hydraulic failures (effects on controls, etc.);

(p) engine fire;

(q) electrical failures (effects on systems);

(r) APU fire;

(s) electrical fire;

(t) wheel well fire;

(u) smoke in the cockpit;

(v) asymmetric flaps (zero flaps for some aeroplanes);

(w) maximum crosswind during T/O, landing and approaches*; and

(x) take-off over/under rotation.

Notes -

1. All exercises shall be completed to a satisfactory level during an initial training course.

2. Exercises with an asterisk shall be satisfactorily demonstrated at least every twelve months.

3. Exercises without an asterisk shall be satisfactorily demonstrated at least every 24 months.

4. An operator approved for aircraft grouping as provided in technical standard section 2.5.1 of technical standard 93.03.3 shall alternate the training between the aircraft within the group.

(3) The remainder of the training and checking program may be accomplished in the aircraft.

(4) The Executive Director may require a FFS to be used as part or all of the training program of any aeroplane type or variant where such aeroplane is unusually complex by design or in flying characteristics as compared to an aeroplane of a similar MCM, such that training to address the specific unusual design and/or flying characteristic of the aeroplane cannot properly and safely be carried out without using a FFS.

(5) The Executive Director may permit aeroplane-only training: Provided -

(a) there is no suitable simulator available anywhere;

(b) the FFS is, by virtue of its certification or serviceability, restricted in its training and checking credits; or

(c) the operator or ATO requests an exemption based upon exceptional circumstances.

(6) Reference to a FFS in this technical standard means a FFS of a level required to accomplish the training program approved for the operator.

3.2. Helicopters

(1) It is anticipated that in the delivery of its flight training program, an operator will make every reasonable effort to use the most updated Flight Simulation Training Devices (FSTDs) where such FSTD is available to the operator.

(2) In the case of flight training for which there is in service a FFS, the helicopter specific training shall be completed in a FFS approved for that purpose.

(3) Reference to a FFS in this regulation means a FFS of a level required to accomplish the training program approved for the operator.

(4) Where an operator has been approved for Low Visibility Operations (LVO) all training and checking with respect to LVO shall be performed in a FFS approved for that purpose.

4. Qualifications of training and checking personnel

Notes -

1. *Unless otherwise specified, reference to an aircraft type shall be taken to mean type or variant of that type of aircraft where applicable.*

2. *Other than regaining qualification training as noted, reference to training and or checking shall be taken to mean initial, upgrade, recurrent or differences training.*

(1) Qualifications of all training personnel

(a) An operator shall select its training personnel based on them having a satisfactory practical and theoretical knowledge of -

(i) the subject the instructor is to teach;

(ii) the aircraft type the instructor is to teach on, if applicable;

(iii) the basic principles of learning and techniques of instruction;

(iv) preparation and use of lesson plans;

(v) the administrative procedures with respect to the established trainee progress forms;

(vi) briefing and debriefing techniques relative to the training given;

(vii) all associated training devices including applicable FSTDs to be used, if applicable; and

(viii) the procedures established in the training program for the administration, conduct, review and correction of, as applicable -

(aa) required examinations or other approved methods of establishing comprehension; and

(bb) skills tests, proficiency or other competency checks.

(2) Qualifications of a ground instructor

(a) Each ground training instructor shall have met the requirements of section 4(1) of this TS and -

(i) unless he or she is or has been the holder of an instructor rating as provided in these Regulations, have received training on -

(aa) the fundamental principles of the teaching/learning process;

(bb) teaching methods and procedures;

(cc) the instructor/student relationship;

(dd) learning impediments;

(ee) human factors relating to the effects of stress and hazardous attitudes;

(ff) the objectives and standards of the operator's training program;

(gg) the effective use of training devices used in the program;

(hh) CAR and CATS relating to training requirements; and

(ii) the system of record keeping approved to be used in conjunction with the training program; and

(iii) if conducting aircraft type training, have successfully completed the initial and recurrent technical training and testing as applicable for each type of aircraft or have received training in, or have experience with, the aircraft system or systems to be taught;

(iv) if conducting aircraft type training, have a sound knowledge of the SOPs or AOM, as applicable, AFM, manuals for special equipment training and the operator's operations and training manuals, as applicable;

(v) if conducting training relating to special operations or non-aircraft specific courses, shall have completed the associated training and testing and be certified by the person responsible for training as competent to teach such subject(s); and

(vi) where the type of training includes interfacing with other crew members, an appropriate level of knowledge of the functional manuals assigned to such other crew members.

(3) Qualifications of a flight training pilot

(a) Each flight training pilot who is to conduct training in the aircraft or both the aircraft and a FSTD shall have met the requirements of section 4(1) above of this TS and -

(i) hold the following licences, ratings and certificates -

(aa) a valid flight instructor rating;

(bb) a valid medical certificate; and

(cc) for aeroplanes with an MCM of greater than 5 700 kg and helicopters with an MCM of greater than 3 180 kg, a valid ATPL and a type rating for the type of aircraft on which training will be given; or

(dd) for aeroplanes with an MCM of greater than 5 700 kg and helicopters with an MCM of greater than 3 180 kg, a valid CPL and -

(A) if the aircraft training includes instrument flight training, a valid instrument rating; and

(B) a type rating for the type of aircraft on which training will be given, if applicable;

(ii) be currently qualified for line or operational flying on the type of aircraft;

(iii) be qualified to perform PF and PNF duties while occupying either flight crew member seat;

(iv) know the content of the AFM, SOPs or AOM, if applicable, special equipment manuals, as appropriate, operator's operations and training manuals as applicable to the aircraft type; and

(v) know the relevant provisions of the Namibia and where international operations are involved, the foreign regulations.

(b) Each flight training pilot who is to conduct training only in a FSTD shall meet the requirements prescribed in subsection (3)(a) of this section, with the exception of sub-paragraph (a)(i)(bb), in which case he or she shall either hold or have held an ATPL, and the qualification prescribed in subparagraphs (a)(ii) and (iii), and, in addition -

(i) have successfully completed the operator's ground and flight training program for the type of aircraft;

(ii) have successfully completed within the past 12 months a PPC in the FFS or aircraft for that type;

(iii) shall maintain familiarity with the operator's SOPs, in particular changes to the SOPs; and

(iv) have received instruction from, and demonstrated the ability to operate the FSTD to a suitably qualified instructor.

(4) Qualifications of pilot checking personnel

(a) Each person authorised to conduct pilot PPCs shall -

(i) in the case of a PPC conducted by a flight training pilot qualified on the aircraft or the aircraft and the FFS -

(aa) have met all the qualification requirements specified in sections 4(1) and 4(3)(a) of this TS;

(bb) for PPCs involving an initial issue or revalidation of an instrument rating or an initial issue of a multi-engine piston class rating or turbine rating, be the holder of a DFE authority issued by the Executive Director appropriate to the aircraft in which such PPC is to be conducted and for all other PPCs, be an approved current Grade I or Grade II flight instructor qualified on that aircraft;

(cc) have been monitored in the preceding 12 months conducting a PPC, in at least one of the aircraft types for which the authority is being sought -

(A) For DFE's, by a NCAA inspector or, in exceptional circumstances, another DFE approved by the Executive Director; and

(B) For flight instructors, by a DFE;

(dd) hold a valid medical certificate;

(ee) have completed the operator's training program and be qualified as a line captain; and

(ff) be qualified to perform PF and PNF duties while occupying either flight crew member seat;

(ii) in the case of a PPC conducted by a FFS-only qualified flight training pilot, have met all the qualification requirements specified in sections 4(1), 4(3)(b) and 4(4)(a)(i) (with the exception of sub-paragraph (ee)) above;

(iii) in the case of line checks -

(aa) have met the qualification requirements specified in sections 4(3)(a) and 4(4)(a)(i) of this TS;

(bb) have completed the operator's training program and be qualified as a line captain on the aircraft type on which the check will be given;

(cc) be qualified to perform PF and PNF duties while occupying either flight crew member seat; and

(dd) be authorised by the operator to conduct line checks as specified in such certification.

Note - *The operator shall retain a copy of all authorisations in the pilot's training record*.

(5) Qualifications of Flight Operations Officer (FOO) instructors and examiners

(a) an operator shall not assign any person to provide and no person shall provide any generic or operator-specific FOO training required in terms of Division Four of Subpart 3, unless such person-

(i) is the holder of a valid FOO certificate of competency issued in terms of Division Five of CAR Subpart 3;

(ii) has completed the FOO generic course of studies;

(iii) has completed the operator-specific FOO training for each type of operational control system and each aircraft type he or she will be required to perform training on; and

(iv) has successfully completed a proficiency check as specified in Division Five of CAR Subpart 3 in the preceding 12 months.

(b) An operator shall not assign and no person shall act as a FOO examiner unless such person -

(i) is the holder of a current FOO certificate of competency appropriate to their assigned duties;

(ii) has completed the FOO training referred to in subparagraph (a) appropriate to their assigned duties;

(iii) has successfully completed a proficiency check as specified in Division Five of CAR Subpart 3; and

(iv) has been certified by the operator to act as a FOO examiner for those types of operational control systems and helicopters listed in the certification.

(6) Training for other than crew members and FOO

Training for ground personnel whose function is essential to safety of flight operations shall be conducted by a competent person assigned by the manager responsible for the department to which such ground personnel are assigned. Specific qualifications for such instructors shall be published in the operators' operations manual.

5. Training records

(1) Every Corporate Aviation Operator shall, for each person who is required to receive training in terms of CAR Subpart 3, establish and maintain a record of -

(a) the person's name and, where applicable, licence number, type and ratings;

(b) if applicable, the person's medical category and the expiry date of that category;

(c) for pilots, the latest date any training for an initial type rating or for regaining qualification, as contemplated in section 2.5 of technical standard 93.03.3 was completed, whether or not such training was completed while in the employ of the operator;

(d) the dates on which the person, while in the operator's employ, successfully completed any training, proficiency check or examination required in terms of CAR Subpart 3 or obtained any qualification required in terms of this Part, Part 61 or Part 64, as applicable;

(e) information relating to any failure of the person, while in the operator's employ, to successfully complete any training, proficiency check or examination required in terms of CAR Subpart 3, or to obtain any qualification required in terms of Part 61, 63 or 64 or this TS; and

(f) the type of aircraft or flight training device used for any training, proficiency check, line check or qualification required under this technical standard.

(2) An operator shall retain a copy of the most recent written examination completed by each person for each subject for which an examination is required.

93.03.2 APPROVAL OF TRAINING PROGRAM

1. Approval process of a corporate aviation operator's training program

(1) The procedures contained in this TS have been established for the initial approval of a corporate aviation operator's training program or the introduction of new equipment. The subsequent approvals of training program amendments will normally be a one-phase process consisting of final approval.

(2) Unless the training program is contained in the company operations manual, each operator shall submit two complete copies of its proposed training program along with a list of effective pages to the Executive Director for review and approval.

(3) Where in the opinion of the Executive Director the proposed program has been presented in sufficient detail to enable him or her to make a preliminary evaluation and determine the program meets the requirements of these technical standards, an initial approval of the training program will be given. One copy of the program will be returned along with a copy of the list of effective pages which will bear an initial approval stamp. The corporate aviation operator is then authorised to present the program.

(4) Where insufficient detail has been provided the Executive Director may return the training program either in whole or in part for further development.

(5) The initial approval referred to in subsection (3) will normally be given for an initial period of one year during which time the program will be monitored in sufficient depth to enable a final decision to be made with respect to the effectiveness of the program in terms of meeting the established training goals.

(6) When the Executive Director is satisfied that the training program meets the requirements of this technical standard, a final approval will be issued.

(7) After the initial approval has been received but before the final approval has been issued, each corporate aviation operator is required to advise the Executive Director within seven days of the intention to present the training program. Unless otherwise advised, the corporate aviation operator shall make accommodation for an inspector to attend.

2. Approval of contracted training services

(1) A corporate aviation operator may contract any required training to another organisation provided -

(a) the arrangement is clearly provided for in the approved training program;

(b) the contracted training organisation is the holder of a valid ATO certificate issued in terms of Part 141 or has been otherwise issued approval to conduct training by the Executive Director;

(c) the contracted training organisation uses the manuals and publications approved for use by the operator (Standard Operating Procedures (SOPs), Aircraft Flight Manual (AFM), Aircraft Operating Manual (AOM), if applicable, Operator's Operations Manual, including Training and Cabin Crew Member's Manual, etc.);

(d) the operator ensures that the training is conducted in accordance with the approved programme;

(e) where aircraft type training is conducted the training is provided on the same type and model aircraft operated by the operator unless appropriate differences training is provided and described in the approved training program; and

(f) the operator remains responsible to ensure the training records approved in the operator's training program are completed by the contracted ATO and maintained in the trainee's file at the base of the operator.

(g) the operator ensures that a service level agreement is in place with the contracted organization.

93.03.3 FLIGHT CREW MEMBER TRAINING

1. Definitions

For the purposes of this Technical Standard the following terms shall have the following meanings -

"company/operator induction training" means company-specific generic training covering a number of subjects as prescribed by regulation. Certain subjects may be presented only as a generic, introductory overview where an operator determines it would be more appropriate to provide amplified training in connection with a specific aircraft type or operational environment;

"cabin safety, emergency equipment and security training" means training given to an aircraft crew member to familiarise them with the location, inspection, testing and use of all emergency equipment required to be carried on board an aircraft and includes specific training required to ensure passenger safety;

"crew resource management training" means training including the principles of human factors designed to ensure the individual and collective efforts of all crew members on board an aircraft are co-ordinated for maximum effectiveness;

"differences training" means training required to ensure a flight crew member is proficient on similar aircraft types or variants having significant differences in terms of equipment, configuration or operation;

"emergency equipment procedures training" means training given to aircraft crew members to familiarise them with the location, inspection, testing and use of all emergency equipment required to be carried on board an aircraft and includes specific training required to ensure passenger safety;

"familiarisation training" means training required to ensure a flight crew member is proficient on similar aircraft types or variants having only minor differences in terms of equipment, configuration, or operation;

"initial training" means the training required for a pilot to obtain a new type rating;

"line/operational training" means training provided to a flight crew member in the form of approved supervised flying during line operations;

"regaining competency" means the training and where specified, the check required when a person exceeds the currency criteria of any qualification required by this Part and is designed to return such person to a satisfactory level of competence;

"sector" means a flight, including a take-off, an en route segment of at least 30 NM, and a landing;

"surface contamination training" means training in an operator's procedures for removal of frozen contaminants from the critical surfaces of an aircraft, as established by the manufacture from the time, from the initial de-icing application to the point of last chance prior to the take-off;

"type training" means initial type training;

"upgrade training" means training provided to advance a flight crew member from one flight crew position to a higher flight crew position;

2. Required training

2.1. Ground training course syllabi

CAR 93.03.1 requires a Corporate Aviation Operation to develop a detailed ground and flight training program. In order to properly assess a training program a detailed syllabus shall be published for each component making up the total program. The following program components shall contain the details of at least the following subject areas. While the company induction would normally be the first course provided to a newly hire employee the sequence of the following curriculum is not necessarily intended to be sequential to the delivery of a corporate aviation operator's program.

2.2. Company induction

(1) Company induction is required only upon initial engagement for all flight crew members except where substantial changes in the company make it necessary to revise the course material. The program shall ensure that persons involved in flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company induction training shall include as applicable -

(a) Namibia Civil Aviation Regulations and, where necessary, foreign regulations, and technical standards;

(b) Corporate aviation operator certificate and operations specifications;

(c) company organisation, reporting relationships, administration and communication procedures;

(d) flight planning and operating procedures;

(e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;

(f) critical surface contamination where required, and safety management system;

(g) passenger safety briefings and safe movement of passengers to/from the aircraft, as applicable;

(h) use and status of company operations manual including the maintenance release procedures and accident/incident reporting procedures;

(i) use of minimum equipment lists, if applicable;

(j) windshear, aircraft icing and other meteorological training appropriate to the area of operations;

(k) navigation procedures and other specialised operations applicable to the operator;

(l) passenger on-board medical emergency;

(m) handling of disabled passengers;

(n) operational control systems;

(o) mass and balance system procedures;

(p) security and security awareness policies and procedures; and

(q) pre-flight crew member briefing including confirmation as to the discrete alerting procedures for suspected security breaches.

2.3. Crew resource management training

(1) A Corporate Aviation Operator or PIC shall ensure each flight crew member has received crew resource management (CRM) training including human factors, risk analysis and error and threat management training -

(a) upon initial appointment to the operator unless such person has, within the preceding 12 months, received CRM training from another approved training organisation. In such cases, the operator shall provide the flight crew member with training in those elements of CRM that are company-specific; and

(b) on a recurrent basis every 12 months thereafter.

(2) CRM training shall include at least classroom lectures and practical exercises. The use of group discussions as forums to problem solving or accident reviews to analyse the human factors breakdown as possible contributing or causal factors contributes significantly to CRM training.

(3) An operator may use a course provided by another operator, if that course has been approved by the Executive Director and the training agreement between the operator and the service provider complies with the requirements as prescribed in TS 93.03.2(2).

2.4. Cabin safety, emergency equipment and security training

(1) A Corporate Aviation Operator, responsible person or PIC shall ensure that each flight crew member receives training and checking on the location and use of all emergency and safety equipment carried on board the operator's aircraft and emergency evacuation training -

(a) upon initial employment by the operator and for each aircraft type to which the flight crew member is assigned that may employ different equipment or procedures unless such person has, within the preceding 12 months, received such training from another approved training source. In such cases, the operator shall provide the flight crew member with training in those elements of cabin safety, emergency equipment and security procedures that are company-specific; and

(b) on a recurrent basis every 12 months thereafter, consisting of items from the initial program that may have changed since the last training session.

(2) Training devices approved to simulate flight operating emergency conditions, static aircraft, ground demonstrations, classroom lectures where adequate visual aids are provided, films or other devices may be used for training: Provided the method used ensures that each crew member is adequately trained in the operation or use of all emergency equipment.

(3) Each flight crew member shall be trained in the operator's security policies and procedures and, in particular, the procedures associated with hijacking, bomb threats and unlawful interference.

(4) Where practical training is required, it shall be completed during initial training and every three years thereafter. This training should, where practicable, be provided either in whole or in part, as determined by the operator, as part of the CRM training scenario and involve both flight and cabin crew members, if applicable. Emergency equipment and procedures training shall include:

Note: *This emergency procedures training does not in itself satisfy the training requirements relating to the emergency procedures laid down in the aircraft flight manual*.

(a) the location, inspection schedules, testing, as applicable, and use of all emergency equipment required to be carried, or otherwise carried on board the aircraft;

(b) emergency evacuation and where applicable, ditching training;

(c) training in the functions for which each flight crew member is responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures;

(d) fire in the air and on the ground;

(e) use of fire extinguishers, including practical training;

(f) operation and use of emergency exits including practical training;

(g) passenger preparation for an emergency landing or ditching, as applicable, including practical training;

(h) emergency evacuation procedures including practical training;

(i) donning and inflation of life preservers, when equipped, including practical training;

(j) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts, when equipped, including practical training;

(k) pilot incapacitation including practical training;

(l) hijacking, bomb threat and other security procedures which ensures crew members act in the most appropriate manner to minimise the consequences of acts of unlawful interference. As a minimum, this program shall include the following elements -

(i) determination of the seriousness of any occurrence;

(ii) crew communication and co-ordination including discrete communications and signals between the cabin and flight crew during flight time;

(iii) appropriate self-defence responses;

(iv) use of non-lethal protective devices assigned to crew members where such use is authorised by the Executive Director;

(v) understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;

(vi) live situational training exercises regarding various threat conditions;

(vii) flight deck procedures to protect the aircraft; and

(viii) aircraft search procedures and guidance on least-risk bomb locations where practicable;

(m) passenger on-board medical emergency;

(n) handling of unruly passengers; and

(o) special emergency procedures when the aircraft is used on MEDEVAC operations including patient evacuation in emergency situations.

2.5. Aircraft type initial and recurrent ground and flight training

2.5.1. General

(1) A Corporate Aviation Operator and the PIC of an aircraft operated in accordance with this technical standard, shall ensure that each flight crew member is provided with ground and flight training on each aircraft type to be flown as follows -

(a) upon initial appointment of the flight crew member to an aircraft for which the flight crew member does not have that type rating or has a newly acquired type rating but no experience on that type; and

(b) on a recurrent basis every 12 months thereafter, unless otherwise approved by the Executive Director based on training credits for similar aircraft types as provided in subsection (4) of this section.

(2) A flight crew member joining a corporate operator with a type rating and experience on the aircraft to be operated with that operator, shall undergo the operator's recurrent ground and flight training program, including sufficient training to ensure he or she is familiar with the operator's aircraft and standard operating procedures. A proficiency check shall be completed following such training.

Note - *For the purposes of this TS, a pilot is deemed to have "experience" if such pilot has accumulated at least 25 hours on the type of aircraft*.

(3) An operator need not administer a complete initial type training program to a pilot coming to the operator with a newly acquired type rating and no experience on that type: Provided -

(a) the operator provides the following ground training to the pilot prior to conducting operations -

(i) in the event the operator's aircraft are different models than those upon which the pilot's ground training was based, the operator ensures such pilot receives additional training covering any differences between the models, including, at least, safety equipment, systems differences, engine/airframe limitations, performance considerations and operating characteristics;

(ii) in the event the operator's aircraft are equipped with different ancillary equipment than those upon which the pilot's ground training was based or not given, such as navigational aids, auto flight system, flight director/flight management system (FMS), airborne collision avoidance system (ACAS), terrain awareness and warning system (TAWS), weather radar, etc., the operator shall provide training on such equipment; and

(iii) the operator establishes that the pilot has adequate knowledge of the different models of aircraft and equipment noted in sub-paragraphs (i) and (ii) above;

(b) the operator provides the following flight training to the pilot prior to conducting operations -

(i) flight training on any differences that may exist between the operator's model of aircraft and that on which the initial training took place, including, at least, systems, engine or airframe, performance and operating characteristics differences;

(ii) flight training in the use of any equipment installed in the operator's aircraft that was not installed in the aircraft on which the initial training took place, such as navigational aids, auto flight system, flight director or FMS, ACAS, TAWS, weather radar, etc., in the aircraft or an approved flight simulation training device (FSTD); and

(iii) sufficient flight training in the aircraft or an approved full flight simulator (FFS) of the type to be flown to ensure the pilot becomes proficient in the use of the operator's SOPs;

Notes -

1. A Corporate Aviation Operator may not have to complete the training on each aircraft type if training credits have been approved as provided in subsection (4) of this section.

2. *In the event additional training is required as a result of this technical standard, the Operator shall conduct a proficiency check on the pilot following such training to ensure the pilot is familiar with any aircraft differences and is competent in the use of all aircraft equipment and the operator's SOPs*.

(c) the operator shall maintain on its training file for each pilot arriving with a newly acquired type rating, detailed records of the initial training received and its own training, including at least -

(i) the name of the organisation having conducted the training, if other than the operator;

(ii) the name of the person having conducted the training and, in the case of flight training, his or her licence number;

(iii) the location where the training was completed;

(iv) the date the training was completed;

(v) the type, model and registration of the aeroplane on which the flight training or any proficiency check was completed;

(vi) copies of ground examinations or other approved means of demonstrating adequate knowledge of the aircraft and its equipment;

(vii) a copy of the pilot's type rating skills test; and

(viii) verification by the operator that the training was successfully completed;

(d) the operator shall publish procedures in its operations manual to ensure that for each case in which a pilot claims credit for a newly acquired type rating, the operator has -

(i) verified the veracity of the type rating endorsement;

(ii) identified what differences exist, if any, between its aircraft and those used for the initial training and that such differences have been incorporated into its training program; and

(iii) determined whether or not the SOPs used for the initial training are the same as those used by the operator; and

(e) the pilot undergoes the full line/operational induction training program as specified in sections 3.1 and 3.2 of this TS.

(4) A Corporate Aviation Operator may be permitted training credits for different types or variants of aircraft based on the demonstrated similarities between the aircraft, hereinafter referred to as "aircraft grouping". Notwithstanding approved aircraft grouping, the initial training shall be completed on each type of aircraft operated and the subsequent training shall be accomplished on a rotating basis between the aircraft involved. For the purposes of this TS and associated regulations, recurrent training completed on one aircraft type shall be deemed to have been completed on all aircraft types for which aircraft grouping has been approved.

Ground Training

2.5.2. Aeroplanes

(1) Initial aircraft type ground training shall consist of a detailed program covering at least -

(a) all of the aircraft's systems and their associated limitations, if any;

(b) the aircraft's normal, abnormal and emergency procedures;

(c) the mass and balance and performance data and calculations; and

(d) the aircraft's emergency equipment.

Note - *Initial ground training involving emergency equipment may be restricted to the identification of what equipment is on board the aircraft and its location. Emergency equipment use and practical demonstration requirements are covered under section 2.4*.

(2) Recurrent ground training shall consist of a review of such of the subjects outlined in an initial training program that would ensure critical information is reviewed timeously, including any changes to the aircraft or operating procedures that occurred since any previous training.

(3) Comprehension examinations shall be administered and successfully completed by the trainee following any ground training and prior to advancing to the next phase of learning.

2.5.3. Helicopters

(1) In developing a helicopter type training course an operator engaged in operations under Part 93 shall show the order in which any other training courses considered necessary in support of an initial helicopter type training course, will be presented. This is to ensure all related information is presented in the best chronological order to facilitate the learning process. In the same manner, comprehension examinations shall be administered and successfully completed by the trainee following any training and prior to advancing to the next phase of learning.

(2) Subject to subsection (1), initial helicopter type technical training shall be provided as the first phase of an initial helicopter type course or variant of the same type of helicopter. This training shall provide an in-depth description of the design and function of all helicopter systems and major components sufficient to ensure each flight crew member is knowledgeable with respect to helicopter systems and related normal, abnormal, emergency and supplementary procedures. The following subjects shall be detailed in the helicopter type ground training syllabus -

(a) each helicopter system contained in the helicopter aircraft flight manual and supplements thereto, including system limitations and alternate modes of operation;

(b) operation of all equipment that is installed in all helicopters of the same type operated by the operator;

(c) differences in equipment that is installed in all helicopters of the same type operated by the operator;

(d) specific standard operating procedures for pilot flying and pilot monitoring duties for normal, abnormal and emergency procedures for the helicopter;

(e) helicopter performance; and

(f) mass and balance procedures.

(3) Recurrent ground training shall be conducted annually and shall be a review of the subjects outlined in paragraphs (2)(a) through (d) and an in-depth description of any changes to the helicopter or operating procedures that occurred since the previous course.

Flight Training

2.5.4. Aeroplanes

Note - *For the purposes of this TS, "zero flight time training" means that training on an actual aircraft is not required*.

(1) The Corporate Aviation Operator shall specify the training syllabi and proposed training times in its operations manual.

(2) Refer to TS 93.03.1(3)(a) and (b) for the requirements for mandatory FSTD use.

(3) The training times allocated to initial and recurrent flight training shall not be less than -

(a) for initial flight training -

Certified Passenger Seating Capacity / MCM	Flight Training (PF Hours) [1]			
	Simulator and Aircraft		Level D [2]	Level E [2]
	Level A, B or C	Aircraft	(simulator only)	(aeroplane only)
Single-Engine	4.0	1.0 [3]	4.0	4.0
Multi-Engine <10 Pax	6.0	1.5 [3]	6.0	6.0
Multi-Engine ≥ 10 - <20 pax MCM ≤ 8618 Kg	10.0	2.0 [3]	10.0	10.0
Multi-Engine ≥ 10 - <20 pax MCM > 8618Kg	10.0	2.0 [3]	12.0	12.0

Notes -

1. The initial training times in the following table are based on a complete type rating course as well as training required by these Regulations and may be reduced to not less than ½ of the minimum time based on pilot experience, subject to the Executive Director's prior approval.

2. *Refer to subsection 2.5.1(3) of this TS for initial training requirements for a pilot who comes to the operator with a newly acquired type rating and no experience on that type*.

(b) for recurrent flight training -

	Flight Training (PF Hours) [1] (except as approved in advance)

Maximum Certificated Mass	Simulator and Aircraft		Level D [2]	Level E [2]
	Level A, B or C [2]	Aircraft	(simulator only)	(aeroplane only)
Single-Engine	1.5 [4]	1.0 [3]	1.5 [4]	1.5 [4]
Multi-Engine ≤15 000kg	2.0	1.0 [3]	2.0	2.0
Multi-Engine >15 000kg	4.0	1.5 [3]	4.0	4.0

Notes (applicable to both tables) -

1. *Flight training times in the tables are expected to be flight times (block to block). Fifteen minutes is factored into the ground time for each flight. Time spent in excess of fifteen minutes on the ground is to be added to the air time spent in training for aeroplane-only training. Recurrent flight training is an annual requirement. Pilots shall complete an equal amount of pilot not flying (PNF) time in addition to the pilot flying (PF) times given in the tables.*

2. *The times specified refer to the level of the training program approved in accordance with section 2.5.4(5)(a) of this TS. FSTDs approved as part of such training programs include -*

   (a) *Level A Full Flight Simulator (FFS) - a synthetic training device that has a motion and visual system that permits completion of a visual training program and PPC. However, the sophistication of the device is such that there is also a requirement to complete airborne training and an airborne PPC following initial training. Recurrent training and PPCs may be conducted wholly in a Level A device, if approved by the Executive Director;*

   (b) *Level B FFS - a synthetic training device that has a higher fidelity visual and motion system than that of a Level A device. The system allows the device to accurately replicate aircraft handling when within ground effect and permits accurate depth perception and visual cues to assess sink rate. As a result, it has "landing credits" attached to it. All recurrent training and 90 day currency requirements may be completed in a Level B or higher synthetic training device; and*

   (c) *Level C and D FFS - synthetic training devices that have a much higher level of fidelity in their visual and motion systems compared to Level B simulators. Zero flight time may training be authorised for programs utilising a Level D FFS.*

   (d) *May be reduced to that time necessary to complete the following: Provided all other training has been completed in a FFS -*

      (1) *one normal and one balked landing;*

      (2) *one take-off with engine failure after the gear is up (except single-engine aeroplanes);*

      (3) *one full stop landing with simulated engine failure (except single-engine aeroplanes); and*

      (4) *one other landing of any type (flapless, from an IFR approach, etc.).*

(e) For VFR-only operations, the flight time may be reduced by one hour.

(4) Initial and recurrent flight training for flight crew members

(a) Flight training for flight crew members shall be carried out in accordance with one of the following types of training programs for each aircraft type operated by the operator -

(i) level A training program;

(ii) level B training program;

(iii) level C training program;

(iv) level D training program; or

(v) level E aeroplane-only flight training program,

as described in sections 2.5.4(8) through (12) of this TS.

(b) Where an operator utilises an FSTD other than those included in the flight training programs specified in paragraph (a), the Executive Director shall make a determination with respect to the training and checking credits allowed for such FSTD on a case-by-case basis.

(5) Recurrent training for all flight crew members shall meet the following requirements -

(a) all items identified in the initial training syllabus shall be covered over a defined period of time (through a cycle); and

(b) a briefing shall be provided on changes that have occurred to the aircraft or its operation since the flight crew member's last training.

(6) Each operator shall publish a flight training syllabus containing all items and manoeuvres outlined in the applicable training program unless the training is contracted out, in which case the training syllabus of the contracted agency shall be published and available to the operator's flight crew members.

(7) The flight training syllabus referred to in subsection (6) shall incorporate training sequences that reflect -

(a) the type of operation, whether VFR, IFR or both;

(b) the type of aircraft and the equipment carried on board; and

(c) the flight regime in which operated.

(8) Level A aeroplane type training program

(a) A Level A training program shall provide for flight training using a combination of an approved Level A FFS of the type of aeroplane to be operated and the aeroplane. The operator is permitted to conduct most of the training elements of an initial and recurrent training program in that simulator. Flight training in an aeroplane shall be carried out for general handling and landing manoeuvres following training as specified in paragraph (c) below.

(b) Flight training shall include and be in accordance with all flight profiles published by the manufacturer, when such profiles are published, including training in

normal, abnormal and emergency operation of the aeroplane systems and components using the FFS. For operators of aeroplanes for which standard operating procedures (SOPs) are required, the training shall be given using such SOPs.

(c) In addition to the training in a Level A FFS following initial training and, if required, recurrent training, at least three take-offs and landings and the following items and manoeuvres shall be completed in the aeroplane -

(i) interior and exterior aeroplane pre-flight checks;

(ii) ground handling for pilots-in-command only, unless the aeroplane provides full steering capability from the second-in-command (SIC) flight crew stations and company procedures permit the SIC to conduct taxi operations;

(iii) normal take-off, visual circuit, where possible, and landing;

(iv) a full circling approach off an instrument approach to circling minima where the flight crew member is authorised to perform circling manoeuvres;

(v) a simulated engine failure procedure after take-off (at safe altitude and airspeed);

(vi) a normal missed approach;

(vii) a simulated engine inoperative landing; and

(viii) any other manoeuvre for which the simulator was not given training credits.

(d) If a Level A flight simulator has differences in performance, systems or cockpit layout and configuration from the operator's aeroplane, additional training on these differences shall be provided either in the aeroplane or a training device that is representative of the operator's actual aeroplanes and is approved for use by the Executive Director.

(9) Level B aeroplane type training program

(a) A Level B training program shall provide for flight training using an approved Level B FFS of the type of aeroplane to be operated. Additionally, initial flight training in an aeroplane shall be carried out for ground handling, landing manoeuvres and any other manoeuvre for which the Level B FFS has not been given a training and checking credit and shall include, as a minimum, interior and exterior aeroplane pre-flight checks. Flight training in the aeroplane following recurrent FFS training need not be completed.

(b) In addition to the training required in a Level A training program, training in an approved Level B FFS shall include recovery from turbulence and windshear on take-off and approach.

(c) If a Level B flight simulator has differences in performance, systems or cockpit layout and configuration from the operator's aeroplane, additional training on these differences shall be provided either in the aeroplane or a training device that is representative of the operator's actual aeroplane and is approved for use by the Executive Director.

(10) Level C aeroplane type training program

(a) A Level C training program shall provide for flight training using an approved Level C FFS of the type of aeroplane to be operated. Except as provided in paragraph (b), initial flight training in an aeroplane shall be carried out for ground handling, landing manoeuvres and any other manoeuvre for which the Level C FFS has not been given a training and checking credit and shall include, as a minimum, interior and exterior aeroplane pre-flight checks. Flight training in the aeroplane following recurrent FFS training need not be completed.

(b) Zero flight time training for candidates undergoing initial training with at least second-in-command experience on a similar aeroplane with the same operator or has otherwise had verifiable line currency as at least a second-in-command on a similar aeroplane within the previous two years is permitted

Note - *For the purpose of this provision, "similar aeroplane" means both aeroplanes are operated in terms of Part 93 and are within the following categories -*

1. turbo-jet to turbo-jet;

2. turbo-fan to turbo-fan

3. turbo-prop to turbo-prop; and

4. reciprocating to reciprocating.

(c) If a Level C flight simulator has differences in performance, systems or cockpit layout and configuration from the operator's aeroplane, additional training on these differences shall be provided either in the aeroplane or a training device that is representative of the operator's actual aeroplanes and is approved for use by the Executive Director.

(11) Level D aeroplane type training program

(a) A Level D training program using an approved Level D FFS of the type of aeroplane to be operated permits zero flight time training.

(b) If a Level D flight simulator has differences in performance, systems or cockpit layout and configuration from the operator's aeroplane, additional training on these differences shall be provided either in the aeroplane or a training device that is representative of the operator's actual aeroplane and is approved for use by the Executive Director.

(12) Level E aeroplane-only flight training program

(a) An aeroplane-only flight training program will only be approved in accordance with the simulator-use policy specified in section 3 of TS 93.03.1 of Document NAM-CATS 93.

(b) Any simulated failure of aeroplane systems shall only take place under operating conditions which do not jeopardise safety of flight and never with passengers on board.

(c) The training program shall include and be in accordance with all flight profiles published by the manufacturer, when such profiles are published, including SOPs

for normal, abnormal and emergency operation of the aeroplane systems and components.

2.5.5. Helicopter type flight training

Notes:

1. The operator's flight training program may be comprised of different combinations of the programs listed below. Flight training is normally acquired through a combination of different types and levels of training devices and in most cases a portion of the flight training would occur in a helicopter.

2. If engine-out training exercises are conducted in a helicopter in accordance with an approved training program, no engine may be shut down.

(1) Initial helicopter type training shall include visual, instrument and special flight procedures, as applicable, crew co-ordination in all phases of operation, normal, abnormal, emergency and supplementary procedures for the type of helicopter, including where applicable MEL and CDL provisions.

(2) The operator shall develop and publish in its training program, a flight training syllabus and lesson plans for each phase of training for each type of helicopter operated showing, where required, which manoeuvres will be conducted in a helicopter.

(3) Initial, Upgrade and Recurrent Synthetic or Helicopter Flight Training for Flight Crew Members.

(4) Flight training for flight crew members shall be carried out in accordance with one of the following training programs. Where an operator utilises a FSTD other than those included in the following flight training program combinations, the Director will make a case by case determination with respect to the training and checking credits allowed for such FSTD:

(a) level A training program;

(b) level B training program;

(c) level C training program;

(d) level D training program; or

(e) level E helicopter-only flight training program.

(5) Recurrent training for all flight crew members on a helicopter or FSTD shall meet the following requirements -

(a) all items for the initial training syllabus shall be covered over a defined period of time (through a cycle); and

(b) a briefing shall be provided on changes that have occurred to the helicopter or its operation since the flight crew member's last annual training.

(6) Each operator shall publish a flight training syllabus containing all items and manoeuvres outlined in the applicable training program indicated above.

(7) Level A Training Program for Pilots

(a) An operator with an approved Level A training program using an approved Level A or better FFS is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in a helicopter shall be carried out for general handling and landing manoeuvres for initial training as specified in paragraph (d) of this training program.

(b) Flight training shall include and be in accordance with all flight profiles published by the manufacturer, when such profiles are published, including the following training in standard operating procedures for normal, abnormal and emergency operation of the helicopter systems and components, and shall be carried out in the FFS -

(i) use of checklists;

(ii) flight crew co-operation, command and co-ordination;

(iii) helicopter and cargo fire on the ground and while airborne;

(iv) engine fire and failure

(v) effects of engine icing and anti-ice operation;

(vi) take-off, landing and flight with the critical engine inoperative and engine inoperative performance capabilities;

(vii) flight control failures and abnormalities;

(viii) hydraulic, electrical and other system failures;

(ix) failure of navigation and communication equipment;

(x) pilot incapacitation - recognition and response during various phases of flight;

(xi) steep turns and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);

(xii) helicopter performance for hover-in-and out-of ground effect, climb, cruise, holding, descent and landing;

(xiii) normal, and performance limited take-offs;

(xiv) take-off and landing data calculations;

(xv) rejected take-off procedures;

(xvi) passenger and crew evacuation;

(xvii) flight management system, ground proximity warning system, airborne collision avoidance system head-up display, enhanced vision system and other specialized helicopter equipment, as applicable; and;

(xviii) inadvertent encounters with moderate or severe in-flight icing conditions where the helicopter is certified for flight into known icing conditions, as applicable.

(c) Where the operator seeks authorisation for flight in IMC the following training in flight planning and instrument flight procedures shall be included -

(i) departure, en route, holding and arrival; and

(ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available, as applicable.

(d) In addition to the training in a Level A FFS, at least 3 take-offs and landings including circuits and the following items and manoeuvres shall be completed in a helicopter of the same type as the FFS -

(i) interior and exterior helicopter pre-flight checks;

(ii) ground handling for PICs only, unless the helicopter provides full steering capability from the second-in-command (SIC) flight crew station and company procedures permit the SIC to conduct taxi operations;

(iii) hover, normal take-off, visual circuit, where possible, and landing;

(iv) a full circling approach off an instrument approach to circling minima where the flight crew member is authorised to perform circling manoeuvres;

(v) a simulated engine failure procedure after take-off (at safe altitude and airspeed);

(vi) a normal missed approach;

(vii) a simulated engine inoperative landing; and

(viii) any other manoeuvre for which the simulator was not given training credits.

(e) If a Level A flight simulator has differences in performance, systems or flight deck layout and configuration from the operator's helicopter, additional training on these differences shall be provided either in the helicopter or a training device that is representative of the operator's actual helicopters and is approved for use by the Executive Director.

(f) In addition to the training prescribed in a Level A training program using a level A FFS, the proficiency check prescribed in Schedule One for helicopters of TS 93.03.8 shall be completed.

(8) Level B Training Program for Pilots

(a) An operator with an approved Level B training program using an approved Level B or better FFS is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, initial flight training in a helicopter shall be carried out for ground handling, hovering, landing manoeuvres and any other manoeuvre for which the Level B FFS has not been given training and checking credit.

(b) In addition to those items of training required by paragraphs in a level A training programme, training in an approved Level B flight simulator shall include recovery from turbulence and windshear on take-off and approach.

(c) If a Level B flight simulator has differences in performance, systems or flight deck layout and configuration from the operator's helicopter fleet, additional training on these differences shall be provided either in the helicopter or a training device that is representative of the operator's actual helicopters and is approved for use by the Executive Director.

(d) In addition to the training prescribed in a Level B training program using a level B FFS, the pilot proficiency check prescribed in Schedule One for helicopters of TS 93.03.6 shall be completed.

(9) Level C Training Program for Pilots

(a) An operator with an approved Level C training program using an approved Level C FFS is permitted zero flight time training for candidates with at least second-in-command (SIC) experience on a similar helicopter with the same operator or has otherwise had verifiable line currency as a SIC on a similar helicopter within the previous two years -

Note - *For the purpose of this provision, "similar helicopter" means both helicopters are operated in terms of Part 93 and are within the following groupings. Any type of helicopter not shown below, has not been considered for similar grouping and should be treated separately*.

(i) Agusta 109 and 119, all model series;

(ii) Bell 47, all model series (including Bell 47T);

(iii) Bell 206, all model series' (including 206 LT;

(iv) Bell 222, 230 and 430, all model series;

(v) Bell 204, 205, 210 and 212, all model series;

(vi) Bell 212 and 412, all model series;

(vii) Enstrom F28, 280 and 480, all model series;

(viii) Eurocopter AS 350, AS 355 and EC 130, all model series;

(ix) Eurocopter SA 330, AS 332 and EC 225, all model series;

(x) Eurocopter SE 313/3130, SE 316/3160 and SA 313 through 319 (Alouette II / Lama / Alouette III), all model series;

(xi) Eurocopter SA 360, SA/AS 365 and EC 155, all model series;

(xii) Eurocopter BK 117 and EC 145, all model series;

(xiii) Eurocopter BO 105, all model series;

(xiv) Hiller 12E and 12ET, all model series;

(xv) Hughes/Schweizer Models 269, 300, 330 and 333, all model series;

(xvi) McDonnell Douglas/Hughes 500(369), 520, 530 and 600, all model series;

(xvii) McDonnell Douglas MD 900, 901 and 902 Explorer, all model series;

(xviii) Sikorsky S 55 and S 55T, all model series;

(xix) Sikorsky S 58 and S 58T, all model series;

(xx) Sikorsky S 61 and S 62, all model series;

(xxi) Sikorsky S 70, all model series; and

(xxii) Sikorsky S 76, all model series.

(b) Candidates who do not qualify for zero flight time training shall, within 30 days of completion of the FFS training, accomplish the following training items in a helicopter -

(i) interior and exterior helicopter pre-flight checks;

(ii) ground handling for PICs only, unless the helicopter provides full steering capability from the SIC flight crew station and company procedures permit the SIC to conduct taxi operations;

(iii) hovering, normal take-off, visual circuit (where possible) and landing;

(iv) a simulated engine failure procedure after take-off (at safe altitude and airspeed);

(v) a simulated engine inoperative landing; and

(vi) a normal missed approach.

(c) In addition to those items of training required in paragraphs (6)(b) and (c), training in an approved Level C FFS shall include -

(i) manoeuvring of the helicopter on the ground;

(ii) crosswind take-offs and landings to 100% of the published crosswind component;

(iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include the following:

(aa) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions;

(bb) engine inoperative approach and landing;

(cc) engine failure procedures during take-off and missed approach;

(dd) no-electronic glideslope approach and landing;

(ee) approaches and landings with flight control failures and abnormalities; and

(ff) where the flight crew member is authorised to perform circling manoeuvres, a full circling approach from an instrument approach to circling minima for initial and recurrent training; and

(iv) a simulated line flight comprising at least 2 sectors (one as pilot flying and another as pilot not flying).

(d) If a Level C flight simulator has differences in performance, systems or flight deck layout and configuration from the operator's helicopter, additional training on these differences shall be provided either in the helicopter or a training device that is representative of the operator's actual helicopters and is approved for use by the Executive Director.

(e) In addition to the training prescribed in a Level C training program using a Level C FFS, the pilot proficiency check prescribed in Schedule One for helicopters of

TS 93.03.8 shall be completed.

(10) Level D Training Programme for Pilots

(a) An operator with an approved Level D training program using an approved Level D FFS is permitted zero flight time training.

(b) In addition to the training required for a Level C program with the exception of the helicopter training requirements, the following FFS training shall be carried out at an appropriate point in the training program -

(i) A VFR training program in the Level D flight simulator of at least 4 hours per crew (2 hours as pilot flying and 2 hours of pilot not flying) is required, to ensure visual flight skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following and may be accomplished as a single training session or dispersed throughout the schedule of lesson plans:

(aa) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions;

(bb) engine inoperative approach and landing;

(cc) engine failure procedures during take-off and missed approach;

(dd) no visual aids approaches and landings; and

(ee) approaches and landings with flight control failures and abnormalities.

(c) Simulated line flights of at least two operational sessions (as pilot flying and two operational sessions as pilot not flying) are required. Pilot flying duties shall be carried out from the appropriate seat.

(d) If a Level D flight simulator has differences in performance, systems, or flight deck layout and configuration from the operator's helicopter, additional training on these differences shall be provided either in the helicopter or a training device that is representative of the operator's actual helicopters and is approved for use by the Executive Director.

(e) In addition to the training prescribed in a Level D training program using a level D FFS, the pilot proficiency check prescribed in Schedule One for helicopters of TS 93.03.8 shall be completed.

(11) Level E - Helicopter-only Flight Training Program

(a) Any simulated failure of helicopter systems shall only take place under operating conditions which do not jeopardize safety of flight.

(b) The training program shall include and be in accordance with all flight profiles published by the manufacturer, when such profiles are published, including SOPs for normal, abnormal and emergency operation of the helicopter systems and components with the following -

(i) use of checklists including interior and exterior pre-flight checks;

(ii) manoeuvring of the helicopter on the ground or on water (if applicable);

(iii) aspects of flight crew co-operation, command and co-ordination;

(iv) hover, normal take-off, visual circuit, approach and landing;

(v) simulated helicopter and cargo fire on the ground and while airborne;

(vi) simulated engine fire and failure;

(vii) briefings on effects of airframe and engine icing and anti-ice operation;

(viii) take-off, landing and flight with the critical engine simulated inoperative, and engine inoperative performance capabilities;

(ix) approach and landing;

(x) simulated hydraulic, electrical and other system failures;

(xi) simulated flight control failures and degraded states of operation, while in-flight, and during take-off and landing (as applicable);

(xii) simulated failure of navigation and communication equipment;

(xiii) simulated pilot incapacitation - recognition and response;

(xiv) steep turns and other flight characteristics (as applicable for initial and upgrade only);

(xv) helicopter performance for hover-in- or out-of-ground-effect, climb, cruise, holding, descent and landing;

(xvi) normal and performance limited take-offs;

(xvii) take-off data calculations;

(xviii) simulated rejected take-off procedures;

(xix) briefing on crew and passenger evacuation procedures; and

(xx) other specialised equipment, where applicable.

(c) Where the operator is authorised for VFR flight at night or flight in IMC, the training program shall also include flight planning and instrument flight procedures with the following -

(i) departure, en route, holding and arrival; and

(ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions, including circling approaches, where applicable, using all levels of automation available, as applicable.

(d) In addition to the training prescribed in a helicopter-only training program, the pilot proficiency check prescribed in Schedule Two for helicopters of TS 93.03.8 shall be completed.

2.6. Regaining recency training for pilots

(1) The following training shall be completed by pilots who have not maintained, for a period between 90 and 180 days, their recency qualifications as specified in CAR 91.02.4 -

(a) a briefing on changes that have occurred to the aircraft or its operation since the pilot's last flight; and

(b) training in an aircraft or FFS that includes not less than 3 take-offs and landings and, for multi-engine aircraft, a simulated engine failure on take-off for aeroplanes, a simulated engine failure in hover for helicopters, a simulated engine failure on the missed approach (if applicable) and an engine-out landing; and

(c) a line/operational check consisting of at least two sectors. In a helicopter, the candidate shall complete all take-offs and landings.

Note - *The engine-out training exercises shall be simulated in the aeroplane*.

2.7. Regaining qualification training for pilots

(1) CAR 91.02.4 and that pilot's PPC has expired for less than 6 months, the following shall be completed to regain type qualification -

(a) all the requirements specified in section 2.6 of this TS, as applicable; and

(b) any recurrent training that may have come due during the absence from flying duties on that aircraft type.

(2) Where the PPC on a specific aircraft type has expired from between 6 and 24 months, inclusive, the following shall be completed to regain type qualification -

(a) all the requirements of section 2.6 of this TS; and

(b) a technical ground training course consisting of an aircraft system review on that aircraft type and FSTD training, where applicable;

(c) a PPC as specified in this TS;

(3) A pilot who's PPC has expired by more than 24 months but less than 60 months shall complete aircraft ground technical training and an examination. In addition, the operator and the PIC of an aircraft shall ensure that sufficient flight training has been provided to ensure the pilot is proficient on the aircraft, followed by a PPC. In developing the training program, the operator shall take cognisance of at least -

(a) the time since the pilot last flew the aircraft type; and

(b) the experience of the pilot on that type and/or similar aircraft.

Note - *In each instance of a pilot regaining qualification under paragraph (3), the operator shall submit its proposed flight training program, including the number of flying hours planned, along with substantiation for arriving at that figure, to the Executive Director for approval prior to conducting the training. The Executive Director shall, within 48 hours, approve, approve with conditions or not approve the program. Alternatively, the operator may publish in its operations manual several training programs catering to a variety of scenarios of pilot experience*.

(4) A pilot whose PPC has expired by 60 months or more shall complete the full initial aircraft type training program.

3. Required training for flight crew

Aeroplanes

3.1. Line or operational training (CAO only)

(1) A Corporate Aviation Operator shall ensure that, following completion of initial type rating or upgrade training, each flight crew member appointed by it to operate large aircraft completes line training. The flight crew member shall serve in the capacity to be served with the operator over routes typical of those over which the flight crew will be expected to fly for the operator. Those items that cannot be covered as a natural occurrence during the line flying operations shall be covered by briefing or other discussion.

(2) Line induction for flight crew member's sectors/hours requirements

(a) For the purposes of this TS, the aeroplane groups are -

(i) reciprocating engine;

(ii) turbo-propeller engine; or

(iii) turbo-jet engine.

(b) Initial line induction is required for crew members who have not qualified and served in the same capacity on the same group of aeroplanes;

(c) Transition line induction is authorised for crew members who have qualified and served in the same capacity on the same group of aeroplanes.

(d) During line induction, a flight crew member shall be given the minimum flight times and sectors in accordance with this TS while performing the duties appropriate to the crew station. Line induction training is calculated by a combination of flight hours and flight sectors. The required number of flying hours and sectors may be completed during proving or ferry flights or during normal line operations and apply to the PIC and the SIC.

(e) Initial line induction shall be conducted under the supervision of a flight training pilot during which time the PIC and SIC shall perform their duties in their respective position, with the training pilot occupying the opposite pilot operating position.

(f) Initial or upgrade line induction requires that the PIC and SIC receive not less than four flight sectors, two sectors of which are to be performed as PF and two sectors as PNF;

(g) Initial or upgrade line induction requires that each flight crew member receives the following minimum number of flight hours -

(aa) in the case of large aeroplanes with reciprocating engines -

(A) 10 hours; and

(B) after completing the four mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 5 hours;

(bb) in the case of large aeroplanes with turbo-propeller engines -

(A) 15 hours; and

(B) after completing the four mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 7.5 hours; and

(cc) in the case of large aeroplanes with turbo-jet engines -

(A) 25 hours; and

(B) no reduction of the original time requirement shall be permitted.

(h) Transition line induction requires that each flight crew member receives, in the case of the PIC and SIC, not less than three flight sectors of which at least one sector is to be performed as PF and one sector as PNF.

(i) Transition line induction requires that each flight crew member receives the following minimum number of flight hours -

(i) in the case of aeroplanes with reciprocating engines -

(aa) 10 hours; and

(bb) after completing the three mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 5 hours;

(ii) in the case of aeroplanes with turbo-propeller engines -

(aa) 15 hours; and

(bb) after completing the three mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 7.5 hours; and

(iii) in the case of aeroplanes with turbo-jet engines -

(aa) 20 hours; and

(bb) after completing the three mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 10 hours.

Helicopters

3.2. Operational training (CAO only)

(1) On initial multi pilot helicopter assignment or upgrade, operational training shall be conducted over parts of the operator's route structure which are typical of those over which the flight crew will be expected to fly.

(2) Operational training is required for flight crew members who have not qualified and served in the same capacity on the same group of helicopters and for pilots upgrading to PIC on any helicopter.

Note: *The grouping of helicopters referred to here are as described in the Note to section 2.5.5(8)(a) of this TS*.

(3) During operational training, a flight crew member shall be given the minimum flight times and sectors specified in the operator's operations manual while performing the duties appropriate to the crew station. Operational training is calculated by a combination of flight hours and flight sectors. The required number of flying hours and sectors may be completed during proving or ferry flights or during normal line operations and apply to the PIC and where applicable, the SIC.

(4) Initial operational training shall be conducted under the supervision of a training pilot during which time the PIC and SIC shall perform their duties in their respective position, with the training pilot occupying the opposite pilot operating position.

(5) The following areas, as applicable, shall be covered during operational training and noted in records as having been completed. Those items that cannot be covered as a natural occurrence during the line flying operations shall be treated as discussion items. In as much as practicable these discussions shall occur during flight time when in the opinion of the training pilot such discussions can be carried out without undue distraction to the pilots under supervision:

(a) Command of the helicopter -

(i) crew management and discipline;

(ii) responsibilities of the PIC and other flight crew members;

(iii) responsibilities of the cabin crew, if applicable; and

(iv) briefing of crew members.

(b) Helicopter and equipment -

(i) MEL policy and procedures;

(ii) Certificate of Airworthiness and other helicopter documentation;

(iii) deferred defects;

(iv) maintenance release;

(v) manuals and log books;

(vi) flight data recorder and cockpit voice recorder, if applicable; and

(vii) emergency exits and emergency equipment on board, to the extent applicable.

(c) Dispatch -

(i) personnel, hours of operation, operational control;

(ii) operator's flight and duty period scheme; and

(iii) operator fuel policy.

(d) Helicopter servicing and ramp safety -

(i) fuelling procedures and weather implications;

(ii) load security;

(iii) ground equipment and handling;

(iv) operator's helicopter de-icing policy and procedures; and

(v) helicopter parking.

(e) Reporting for duty;

(f) Licence requirements;

(g) Helicopter library;

(h) Departure delays due to unforeseen circumstances;

(i) Pre-flight safety and crew briefings;

(j) Starting engines;

(k) After-start checks;

(l) Pre-flight checks and securing cabin;

(m) (Hover-)taxiing;

(n) Rejected take-off;

(o) Departure sequence -

(i) lookout; and

(ii) after take-off checks;

(p) Climb procedures;

(q) Cruise -

(i) fuel management and checks; and

(ii) en route diversion;

(r) Approach Procedures -

(i) organisation and briefing of approach;

(ii) descent; and

(iii) pre-landing check and cabin security;

(s) Landing and taxiing -

(i) surface conditions; and

(ii) after landing checks;

(t) Shutdown;

(u) Flight and maintenance logs and records;

(v) Defect recording and clearing;

(w) Emergency procedures -

(i) hi-jack, bomb threat procedures;

(ii) helicopter evacuation;

(iii) aerodrome emergency services; and

(iv) engine-inoperative procedures.

3.3. Differences and familiarisation training

(1) Where the responsible person intends to assign a flight crew member to variant types of aircraft or different types with very similar characteristics, the responsible person shall, using NAM-CATS 61 for guidance, determine whether the pilot must be provided differences or familiarisation training.

(2) Where significant differences exist within the fleet of aircraft, or variants of aircraft, or between the aircraft operated and the training device approved for use, the aircraft type technical and flight training syllabus shall contain such differences training.

(3) Where only minor differences exist within the fleet of aircraft, or variants of aircraft, or between the aircraft operated and the training device approved for use, the aircraft familiarisation training appropriate to the differences shall be given and recorded in the crew member's training file.

(4) Differences and familiarisation training shall include, as a minimum, a knowledge examination following the ground training. The requirement for a skills test will be determined by the Executive Director based upon an assessment of the degree of the differences.

3.4. Upgrade training

(1) Where a flight crew member is currently proficient as SIC on a type of aircraft wishes to operate as PIC on that type, such person shall undergo -

(a) upgrade training and checking to include the following -

(i) successfully complete simulator manoeuvres training and training as a PIC in all areas of aircraft handling that are specific to the PIC seat position;

(ii) command and decision making;

(iii) successfully complete specialised operations qualification training (e.g. lower take-off limits, etc.);

(iv) successfully complete on that type of aircraft the initial PPC conducted by an approved DFE; and

(v) initial line/operational training for a PIC followed by a line/operational check.

(b) Where a SIC has never upgraded to PIC on the class or category of aircraft to be flown and whose SIC proficiency has expired within the preceding 24 months, such SIC shall complete a technical ground training course consisting of an aircraft system review on that aircraft type prior to or as part of the upgrade training program.

(c) Prior to or included in the training required by paragraph (a) above, pilots who have not held a valid SIC PPC on the aircraft type for a period greater than 24 months shall be given a complete initial aircraft type training course: Provided that a reduction in the ground training and minimum flight hours required may be granted by the Executive Director based on the experience of the flight crew member on that aircraft type.

3.5. Pilot qualification to operate in either pilot's seat

(1) A PIC whose duties also require him or her to carry out the duties of pilot-flying and pilot monitoring from both flight crew stations shall complete additional training. This additional training shall be accomplished from the SIC crew position and include at least two landings during completion of the following -

(a) an engine failure during take-off;

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

(c) one engine-inoperative landing;

Note: *The preceding engine-out exercises are not applicable to single-engine aircraft*.

(d) Category II or Category III operations, if applicable; and

(e) operation of the normal and emergency checklist as pilot-not-flying.

(2) The training required by subsection (1) shall be completed upon initial assignment and every 12 months thereafter unless the pilot has completed all of the training elements specified in the training program during normal line operations within the preceding 12 month period prior to operating from a seat for which he or she is not qualified.

(3) The checks referred to in subsection (1) above may be accomplished during a normal PPC.

(4) A record of the training completed and/or operational means of qualifying to act from either flight crew station shall be maintained in the pilot's training file.

3.6. Area, route and aerodrome familiarisation training

A Corporate Aviation Operator shall provide adequate material to enable a PIC to familiarise him or herself with such areas, routes and aerodromes as that person is likely to use and shall ensure such material is kept up-to-date.

3.7. Reduced Vertical Separation Minima (RVSM) training (as applicable)

(1) No pilot may operate in RVSM airspace unless such pilot has received initial training from an approved training organisation or through an operator's approved training program with respect to operating in RVSM airspace and, for pilots who have not operated in RVSM airspace in the preceding 12 months, recurrent training.

(2) For a flight crew member to qualify for operations in RVSM airspace, he or she shall be proficient in the following areas -

(a) knowledge of the floor, ceiling and horizontal boundaries of the RVSM airspace to be operated in;

(b) rules on exclusion of non-RVSM compliant aircraft;

(c) pilot procedures with respect to -

(i) pre-flight and in-flight altimeter checks;

(ii) use of the automatic altitude control system;

(iii) minimum equipment list (MEL) items applicable to RVSM operations;

(iv) special procedures for in-flight contingencies;

(v) weather deviation procedures;

(vi) track offset procedures for wake turbulence and inconsequential collision avoidance systems alerts; and

(vii) climb and descent procedures and pilot level-off call;

(d) procedures for flight of non-RVSM compliant aircraft for maintenance, humanitarian or delivery flights; and

(e) use of ACAS/TCAS.

3.8. ACAS or ACAS II training including ACAS II cyclic training

(1) ACAS training is applicable to at least the PIC where the aircraft is required to be operated with an approved, serviceable airborne collision avoidance system (ACAS).

(2) An ACAS training program shall ensure that on completion the pilot is able to demonstrate proficiency in the following:

(a) knowledge of ACAS II concepts, systems and procedures; and

(b) cognitive, procedural and motor skills necessary to properly respond to ACAS advisories.

(3) There are no formal ACAS evaluation requirements for flight testing and examination. An ACAS instructor shall accomplish evaluation of ACAS objectives during training.

(4) A pilot shall complete ACAS initial training in respect of each aircraft type for which he or she is rated in which is carried ACAS equipment.

(5) ACAS initial training may be provided as a stand-alone module of ground and flight training or may be integrated with other initial, differences or upgrade ground and flight training programs.

(6) An operator may contract with another operator, or with an ATO approved to operate an aircraft for instrument flight instruction, to provide the ACAS initial training to its flight crew, provided such contract is in accordance with the provisions specified in TS 93.03.2.

(7) An operator shall certify in the pilot's file that the ACAS training and checking has been accomplished to a satisfactory standard.

(8) ACAS renewal training

(a) ACAS renewal training -

(i) shall be integrated with recurrent flight training during proficiency training or line or operational flight training; and

(ii) ground training shall be provided as a stand-alone module and should address any significant issues identified by line operating experience, system changes, procedural changes or unique characteristics such as the introduction of new aircraft display systems or operations in airspace where high numbers of traffic advisories (TA) and resolution advisories (RA) have been reported;

(b) Routine ACAS operations shall be included in all evaluation environments and testing officers should include ACAS as a routine discussion item;

(c) A pilot completes ACAS renewal training when -

(i) an ACAS instructor certifies in the pilot's logbook that the pilot has completed ACAS renewal training conducted by the operator as part of its approved training program or an ATO approved to operate aircraft for instrument flying training; or

(ii) a NCAA flying inspector certifies in the pilot's logbook that the pilot has completed ACAS renewal training prescribed by the NCAA.

(d) An ACAS instructor is deemed to have completed ACAS renewal training when the instructor conducts ACAS initial training or ACAS renewal training.

(9) ACAS cyclic training;

(a) A pilot completes a session of ACAS cyclic training when a check pilot certifies in the pilot's logbook that the pilot has successfully completed a training session.

(b) A pilot is deemed to have completed:

(i) ACAS initial training on the first occasion that the pilot completes a session of ACAS cyclic training; and

(ii) ACAS renewal raining on the second or a subsequent occasion that the pilot completes a session of ACAS cyclic training.

(c) A check pilot is deemed to have completed ACAS renewal training when the check pilot conducts ACAS cyclic training.

(10) ACAS training program requirements

(a) Each ACAS curriculum shall ensure the equipment manufacturer's recommended training and testing requirements are carried out in the manner prescribed by such manufacturer.

(b) In any case a pilot's ability to demonstrate system and procedural concepts shall be included in the initial, recurrent and where applicable, the regaining competency testing.

3.9. Training for low visibility operations

(1) General

(a) Low visibility operations (LVO) are comprised of lower-than-normal visibility minima take-off (LVTO) and lower-than-normal weather and visibility minima approach operations (Category II and III (CAT II/III) approaches);

(b) Flight crew member training programs for LVO shall include structured courses of ground, simulator and flight training. The training is aircraft-specific; however, credits may be given from one aircraft type to another based on the similarities between the types. The operator may abbreviate the course content as prescribed by paragraphs (c), (d) and (e) below provided the content of the abbreviated course is acceptable to the Executive Director;

(c) Flight crew members with no CAT II or III experience must complete the full training program prescribed in sections (2), (3) and (4) below.

(d) Flight crew members with CAT II or III experience with another owner or operator may undertake an abbreviated ground training course but shall complete the flight training, check and line flying under supervision.

(e) Flight crew members with CAT II or III experience with the owner or operator may undertake an abbreviated ground, simulator and/or flight training course, which shall include at least the requirements of paragraphs (5)(a) or (b), as appropriate, of this subsection.

(2) Ground training

An operator or approved contracted training organisation shall provide a ground training program commensurate with its approvals. Such training shall be given to flight crew members upon their initial introduction to LVTO or CAT II/III operations and thereafter as required to introduce new policies, procedures or equipment associated with LVO.

(3) Flight training

(a) An operator or approved contracted training organisation shall use an approved simulation training device (FSTD) for the training and checking of flight crew members in LVO.

(b) An operator approved contracted training organisation must ensure that each flight crew member is trained to carry out his or her duties and instructed on the co-ordination required with other flight crew members.

(4) Conversion training requirements to conduct low-visibility take-off and Cat II and III operations

An operator or PIC must ensure that each flight crew member completes the following low visibility procedures training if converting to a new type or variant of aircraft in which LVTO and CAT II and III operations will be conducted. The flight crew member experience requirements to undertake an abbreviated course are prescribed in paragraphs (1)(d) and (e) above.

(a) Ground training -

(i) The appropriate requirements prescribed in subsection (2) above shall be completed, taking into account the flight crew member's LVTO and CAT II and III training and experience.

(b) FSTD training -

(i) a minimum of eight LVTO departures and CAT II/III approaches in a simulator approved for the purpose;

(ii) a minimum of five landings following CAT II/III approaches of which at least two shall be with an engine out;

(iii) a minimum of three missed approaches initiated at various stages of the approach, during which at least one engine failure shall be introduced; and

(iv) appropriate additional training if any special equipment is required such as head-up displays or enhanced vision equipment.

(5) Line or operational flying under supervision

(a) An operator must ensure that each flight crew member undergoes the following line flying under supervision -

(i) for CAT II when a manual landing is required, a minimum of three landings from autopilot disconnect; and

(ii) for CAT III, a minimum of three autolandings except that only one autolanding is required when the training required in subsections (3) or (4), as applicable, has been carried out in a full flight simulator usable for zero flight time training.

(6) Type and command experience

(a) The following additional requirements are applicable to pilots-in-command who are new to the aircraft type -

(i) 50 hours or 20 sectors, whichever is later, as pilot-in-command on the type before performing any CAT II or III operations; and

(ii) 100m must be added to the applicable CAT II or III RVR minima unless he or she has previously qualified for CAT II or III operations with another owner or operator until attaining 100 hours or 40 sectors, whichever is later, as pilot-in-command on the type.

(b) The Executive Director may authorise a reduction in the above command experience requirements for flight crew members who have CAT II or III command experience.

(7) LVTO

(a) A corporate aviation operator must ensure that prior to authorisation to conduct take-offs with RVR below 400m the following training is carried out -

(i) normal take-off in minimum authorised conditions or RVR conditions;

(ii) take-off in minimum authorised conditions or RVR conditions with an engine failure between V1 and V2 or as soon as safety considerations permit; and

(iii) take-off in minimum authorised conditions or RVR conditions with an engine failure before V1 resulting in a rejected take-off.

(b) An operator shall ensure that the training required by subsection (3) or (4) above, as appropriate, above is carried out in an approved simulator. This training shall include the use of any special procedures and equipment.

(c) An operator must ensure that a flight crew member has completed a check before conducting low visibility take-offs with an RVR of less than 400m.

(8) LVO recurrent training and checking

(a) A Corporate Aviation Operator or PIC must ensure that, in conjunction with the normal recurrent training and PPCs, a flight crew member'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 shall be the same as the recurrent training approved for the operator.

(b) An approved flight simulator shall be used for LVO training and checking.

(c) A Corporate Aviation Operator or PIC must ensure that, for CAT III operations on aircraft 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 300m or less.

(9) LVTO and CAT II or III recency requirements

(a) A Corporate Aviation Operator or PIC must ensure that, in order for flight crew members to maintain a CAT II or III qualification, they have conducted a minimum of 3 approaches and landings using approved CAT II or III procedures during the previous six month period, at least one of which must be conducted in the aircraft.

(c) Recency for LVTO is maintained by retaining the CAT II or III qualification prescribed in paragraph (a) above.

(c) An operator may not substitute this recency requirement for recurrent training.

3.10. Single-engine IFR and night VFR training (CAO only)

Aeroplanes

(1) A Corporate Aviation Operator shall provide initial and recurrent training to ensure its pilots are able to safely conduct operations in single-engine aircraft in flight under the instrument flight rules (IFR) and at night. Such training shall be completed on each aircraft type flown unless the Executive Director permits a reduction in training based on similarities between the aircraft types flown. The PIC shall insure the required training has been completed.

(2) The training required by subsection (1) shall be completed -

(a) prior to initial assignment on a single-engine aircraft carrying passengers, cargo or both under IFR or at night; and

(b) every 12 months thereafter.

(3) Table 1 prescribes the minimum conversion and recurrent training to be accomplished on single-engine aircraft authorised to be operated under IFR or at night.

Table 1

Type of Operation	INITIAL		RECURRENT	
	Aeroplane only	Simulator only	Aeroplane only	Simulator only
Passenger carriage	4.0	4.0	1.0	N/A
Cargo-only carriage	2.0	N/A	1.0	N/A

Notes -

1. Written exams are mandatory at completion of both Initial and recurrent ground training.

2. Synthetic training device and aeroplane times are pilot flying (PF) times only.

3. The Executive Director will determine on a case by case basis what combination of aeroplane or simulator training totalling 4 hours is to be accomplished based on the simulator's approved capabilities.

4. Notwithstanding the above training times, all training shall be to an acceptable standard.

(4) Where an approved synthetic training device is available within Namibia for a specific aeroplane type, the simulator training published in Table 1 shall be accomplished in such device, including all emergency procedures that cannot be safely practised in the aeroplane. Where no such approved synthetic training device is reasonably available, the Executive Director may approve an aeroplane-only flight training program where he or she is of the opinion that safety will not be jeopardised.

Helicopters

3.11. Single-engine IFR and night VFR training

3.11.1. Flight crew requirements

(1) Training requirements shall be published in the operator's operations manual and must be accomplished on each specific helicopter type or variant authorised to operate at night.

(2) At least the following exercises are required to be practised as part of the approved training program:

(a) engine fire on ground;

(b) engine failure in flight;

(c) loss of all but emergency electrical power;

(d) hydraulic and other system malfunctions, as applicable;

(e) rejected take-offs and landings;

(f) if applicable, Standard Operating Procedures (SOP) containing crew coordination;

(g) practise in engine-out autorotation scenarios; and

(h) descents and approaches to, and landings on an unprepared surface, both with and without the engine operating.

(3) In addition to the training specified in section (2), each person assigned to act as a flight crew member in single engine (SE) night flight shall undergo a pilot proficiency check (PPC).

(4) The PPC referred to in section (3) above shall be conducted by an authorised officer, DFE or Grade I or II flight instructor: Provided such person has, at least, accomplished the training required by this TS and a PPC on the helicopter type.

(5) Each person who successfully passes a PPC shall receive certification in his or her training records that authorises him or her to operate SE helicopters at night while transporting passengers or cargo, as applicable.

3.11.2. Special procedures requirements

(1) The Corporate Aviation Operator shall publish in its operations manual special procedures for the conduct of single-engine operations while transporting passengers at night, including the minimum operating height if the ground or sea surface is not lighted and the maximum distance the helicopter is permitted to operate away from a lighted area. Such special procedures must adopt every reasonable measure to mitigate environmental or operational risks and shall include at least that the helicopter shall not be operated in known or forecast icing conditions.

(2) The Executive Director may require additional procedures, restrictions or conditions in the interests of safety.

3.12. IFR or night VFR without a second-in-command (single-pilot IFR)

Aeroplanes

(1) An owner or operator may not conduct single-pilot flight under IFR or at night unless the PIC, within the preceding 12 months, has completed the following single-pilot training in the aeroplane, a FSTD or a combination of aeroplane and FSTD -

(a) if flight under IFR is to be undertaken, the following training under simulated or actual IMC -

(i) a minimum of five approaches consisting of at least one precision and one non-precision approach;

(ii) at least two instrument departures, one of which shall be with an engine out;

(iii) at least one missed approach during which an engine failure is introduced;

(iv) at least one engine-out approach; and

(v) at least three landings from approaches, one of which shall be with an engine out; and

(b) if night flight is to be undertaken, five take-offs and landings at night.

Notes -

1. *Only a FSTD that is representative of the aircraft to be flown, including navigation systems and cockpit layout, shall be approved for use.*

2. *Training shall include use of the autopilot with and without the introduction of abnormal and emergency conditions.*

3. *Any engine-out training done in the aircraft must be simulated.*

4. *Single engine aircraft are not subject to the engine-out training requirements.*

3.13. IFR or night VFR without a second-in-command (single-pilot IFR)

Helicopters

(1) A Corporate Aviation Operator or PIC may not conduct single-pilot IMC or night flight operations unless the PIC, within the preceding 90 days, has completed the following single-pilot training in the helicopter, a FSTD or a combination of helicopter and FSTD -

(a) if flight in IMC is to be undertaken:

(i) at least two instrument departures, under simulated or actual IMC which shall include at least one simulated engine failure after take-off in a simulator or under simulated IMC;

(ii) a minimum of five approaches consisting of at least two precision or non-precision approaches;

(iii) in a multi-engine helicopter -

(aa) at least one missed approach during which an engine failure is introduced;

(bb) at least one engine-out approach; and

(cc) at least three landings from approaches, one of which shall be with an engine out; and

(b) if night flight is to be undertaken, five take-offs and landings at night.

3.14. Dangerous goods

(1) A Corporate Aviation Operator authorised to transport dangerous goods shall complete the training specified in NAMCAR 92 and publish such training in its operations manual.

(2) The PIC shall ensure he/she has completed the training in NAMCAR 92 before transporting dangerous goods.

(3) A Corporate Aviation Operator not authorised to transport dangerous goods shall complete dangerous goods awareness training for operations personnel and other employees likely to come into contact with passengers or their baggage or personal effects -

(a) upon initial employment; and

(b) every 24 months thereafter.

3.15. Other courses of training as deemed appropriate by the Executive Director

(1) A Corporate Aviation operator authorised to conduct the following specialised operations, or any other, shall provide training in the equipment and procedures associated with such approvals -

(a) extended range twin-engine operations (ETOPS);

(b) all weather operations;

(c) GNSS;

(d) RNAV;

(e) land and hold short operations; and

(f) simultaneous operations on parallel or near-parallel instrument runways - ILS/precision runway monitor (PRM) and localizer type directional aid (LDA)/PRM - simultaneous offset instrument approaches (SOIA) training.

(2) A flight crew member, operating in accordance with CAR 93.01.1(1)(a) and (b), authorised to conduct specialised operations, as listed in subsection (1)(a)-(f) above, shall ensure he or she has received training in the equipment and procedures associated with such approvals.

(3) Other courses that may be considered necessary to ensure safety of flight operations may include but not be limited to -

(a) MEL training;

(b) high altitude training;

(c) operations in ground icing conditions, if applicable;

(d) one-engine Inoperative ferry flight training;

(e) CFIT;

(f) low-energy awareness training; and

(g) other relevant subjects identified from time to time.

93.03.5 CORPORATE EMPLOYEE AND SERVICE AGENT TRAINING

1. Load masters and winch operators

(1) A Corporate Aviation Operator shall provide load masters and winch operators with at least the following training -

(a) company induction training upon initial hire;

(b) initial and annual recurrent type training on each aircraft in which the person will be operating;

(c) where applicable, differences or familiarisation training;

(d) if the operator is authorised to carry dangerous goods, dangerous goods training or, if not so authorised, dangerous goods awareness training;

(e) training in the policies and procedures associated with their assigned tasks;

(f) for loadmasters, theoretical and practical training in mass and balance calculations, load planning, the use of the equipment used in loading an aircraft and any other training deemed necessary for the loadmaster to carry out his or her duties; and

(g) for winch operators, theoretical and practical training as necessary to carry out his or her duties.

2. Flight operations officers

Notes:

1. Any reference to "equivalent course of studies" in this TS means that credit may be given for previous training received towards a pilot licence but that additional training may be required.

2. For persons without any formal training, credit may be given based on relevant experience but is subject to a knowledge assessment by the NCAA or a NCAA approved person.

2.1. Qualifications of flight operations officer instructors and examiners

(1) A Corporate Aviation Operator shall not assign any person to provide and no person shall provide any generic or operator-specific flight operations officer (FOO) training required in terms of Division Four of CAR Subpart 3, unless such person:

(a) has successfully completed a FOO generic course of studies or an acceptable equivalent course of studies and received certification from the approved training organisation having conducted the training; and

(b) has successfully completed the operator-specific FOO training and received a certificate of competency issued by the operator in terms of this technical standard.

(2) An operator shall not assign and no person shall act as a FOO examiner unless such person -

(a) is the holder of a current FOO certificate of competency appropriate to their assigned duties;

(b) has completed the FOO training referred to in subparagraph (a) appropriate to their assigned duties, and

(c) has been certified by the operator to act as a FOO examiner for those types of operational control systems and aircraft listed in the certification.

2.2. Qualifications of a Flight Operations Officer

(1) No person may be assigned to FOO duties, except under adequate supervision, unless such person-

(a) in the case of a new hire FOO, has -

(i) completed the generic training outlined in section 2.3 or an acceptable equivalent course of studies;

(ii) completed the operator-specific training required by section 2.4; and

(iii) been issued a certification of competence by the operator indicating the operational control system(s) and company aircraft authorised; or

(b) has undergone the operator's specific FOO training and demonstration of competence within the 12 months preceding such assignment: Provided -

(i) the FOO's training file provides evidence of the completion of the training and demonstration of competence approved by that operator; and

(ii) the FOO has been issued a certification of competence issued by the operator indicating the operational control system/s and company aircraft authorised.

(2) Where a FOO has previously undergone the generic training prescribed in section 2.3, the validity of which has not lapsed, the requirements of subsection (1)(a)(i) above are deemed to have been met.

(3) No operator shall assign a FOO to duty when such person has not acted in that capacity -

(a) for a period of six months, unless such person has undergone a briefing on changes to procedures or other changes in the operational control system (OCS) that have occurred since the person last served;

(b) for a period of one to two years, unless such person has undergone the recurrent course of studies;

(c) for a period of greater than two years, unless such person has undergone the initial course of studies of the company- specific training and has successfully completed the appropriate check; and

(d) for a period of five years since completion of the generic operations officer training, unless such person has acted as a FOO for at least six months in the preceding 24 months, unless such person:

(i) has undergone refresher training based upon the generic course; and

(ii) has completed the company-specific training and has successfully completed the appropriate check.

2.3. Flight Operations Officer Generic Training

(1) The following subjects form the basis for generic training -

(a) air law - rules and regulations relevant to a FOO, appropriate air traffic services practices and procedures;

(b) aircraft general knowledge -

(i) principles of operation of aircraft powerplants, systems and instruments;

(ii) operating limitations of aircraft and powerplants; and

(iii) minimum equipment list;

(c) flight performance calculation, planning procedures and loading:

(i) effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;

(ii) operational flight planning; fuel consumption and endurance calculations; alternate aerodrome selection procedures; en route cruise control; extended range operation;

(iii) preparation and filing of air traffic services flight plans; and

(iv) basic principles of computer-assisted planning systems;

(d) human performance - human performance relevant to dispatch duties;

(e) meteorology -

(i) aeronautical meteorology; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions; and

(ii) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information;

(f) navigation - principles of air navigation with particular reference to instrument flight;

(g) operational procedures:

(i) use of aeronautical documentation;

(ii) operational procedures for the carriage of freight and dangerous goods;

(iii) procedures relating to aircraft accidents and incidents;

(iv) emergency in-flight procedures; and

(v) procedures relating to unlawful interference and sabotage of aircraft;

(h) principles of flight - principles of flight relating to the appropriate category of aircraft; and

(i) radio communication - procedures for communicating with aircraft and relevant ground stations.

(2) Practical Training

The applicant shall have served under the supervision of a FOO or, in the case of an operator having only one FOO, a suitably qualified person designated by the person responsible for flight operations or approved by the Executive Director, for at least 90 working days within the six months immediately preceding the application.

2.4. Operator-specific flight operations officer training - general

(1) The Corporate Aviation operator shall establish and maintain approved ground training programmes for FOOs in its employ whether on a full-time or part-time basis or are otherwise engaged under the provisions of contractual services approved by the Executive Director for that operator.

(2) Each training programme shall be published in the operations manual referred to in CAR 93.04.2.

(3) Each training curriculum shall be appropriate to the employee's duties and in consideration of the type and complexity of the Operational Control System (OCS) approved for the operator.

(4) Each FOO or flight follower trainee shall receive operator-specific training as outlined in the applicable curriculum.

2.5. Flight operations officer training

(1) The operator-specific FOO training programme shall be published as individual syllabi in terms of initial, recurrent, transition, flight familiarisation and regaining competency training based upon the following -

(a) initial training is a course of studies given to each new hire and covers the complete initial company induction syllabus and complete aircraft type training syllabus as relating to the person's assigned duties. Initial training and the related examinations shall be reviewed and revised from time to time and at any time new information becomes relevant to the OCS as the result of operational or safety management system (SMS) feedback;

(b) recurrent training shall occur every 12 months and include new material that may have been added to the initial course of studies or new information resulting from operational experience that may affect the efficiency, effectiveness or safety of the operator's OCS;

(c) transition training is training provided for any FOO to make a transition from one type of aircraft type or variant to another except where the Executive Director allows such aircraft or variants to be grouped together as, an aircraft type;

(d) flight familiarisation is training provided to each FOO for the purpose of ensuring an enhanced knowledge of the operational practices of a flight in progress and the manner of interfacing with the flight watch system; and

(e) regaining competency is training provided to a FOO when such person has not acted in the capacity for which they have been trained.

2.6. Operator's company induction syllabus for initial training

(1) The content of a company induction training programme for a FOO shall include -

(a) the operations manual system covering pertinent information dealing with -

(i) manual structure including all manuals providing need to know information for dispatchers and the amendment procedures for such manual system;

(ii) company management organisation and how the OCS interfaces with management;

(iii) duties and responsibilities of those exercising operational control of flight following services;

(iv) operators approved for categories A or B operational control system, a full description of the system so approved;

(v) specific domestic and foreign rules and regulations significant to the operator by virtue of its type and area of operation giving emphasis on regulatory differences from the Namibia civil aviation regulations;

(vi) dispatch release policy;

(vii) procedures for the resolution of conflict between the dispatcher and the PIC;

(viii) flight following services and provision of information to a flight;

(ix) local weather patterns and tendencies;

(x) operator's fuel policy;

(xi) dispatch interface with the operator's SMS;

(xii) dispatch interface with the operator's QA programme;

(xiii) details of the operator's security programme, if applicable;

(xiv) details of the maintenance release policy;

(xv) details of the operator's emergency response plan including OCS participation in overdue or missing aircraft;

(xvi) handling a declaration of an emergency;

(xvii) operational weather minima;

(xviii) the approved types of operational flight plans and flight planning procedures;

(xix) crew resource management training including human factors, risk analysis and error management training;

(xx) dangerous goods training as applicable;

(xxi) details of the operator's load control procedures;

(xxii) details of the operator's communication equipment and policies including communication failure procedures;

(xxiii) details of the operator's official reporting systems;

(xxiv) surface contamination training where the operator operates into areas where surface contamination is known to exist; and

(xxv) company policy with respect to the dissemination of information relating to -

(aa) weather conditions or known severe or weather phenomena;

(bb) NOTAMs; or

(cc) security measures;

(b) details of the CAOC and operations specifications

(i) Part A General provisions;

(ii) Part B En route authorisations and limitations including special authorities;

(iii) Part C Aerodrome authorisations and limitations;

(iv) Part D Maintenance;

(v) Part E Mass and balance;

(vi) Part F Interchange of equipment operations; and

(vii) Part G Aircraft leasing operations; and

(c) any other subject area the Executive Director deems to be pertinent.

(2) The content of a company induction training programme for a flight follower shall include those items from subsection (1) related to the flight follower's duties.

2.7. Flight familiarisation training - FOO

(1) A Corporate Aviation operator shall provide to each FOO flight familiarisation training every 12 months as an observer occupying a flight deck observer seat during not less than one flight sector. The flight deck seat should provide the FOO with the ability to hear all voice communications.

(2) Flight familiarisation must commence at the dispatch centre and the observer given the opportunity to receive the briefing and to witness how this information is used for the different phases of the flight.

(3) Flight familiarisation shall be recorded and signed by the observer and the pilot-in-command.

3. Security training for ground personnel

(1) A corporate aviation operator shall provide security training for the purpose of heightening overall security awareness among the ground operating personnel whose function is essential to flight operations. Ground personnel considered significant to aircraft operations would include but not be limited to -

(a) personnel designated as dangerous goods packing, shipping or loading of dangerous materials;

(b) service counter personnel;

(c) personnel designated as cargo, mail or baggage handlers;

(d) catering personnel;

(e) service personnel whose function would require coming into contact with or have access to an aircraft or its loading or service bays;

(f) maintenance personnel; or

(g) personnel who man stores handling anything that is designated for, or is likely to be placed on an aircraft.

(2) The training required by subsection (1) must be designed to acquaint appropriate employees with preventive measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for carriage on an aircraft so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.

93.03.6 CHECKING OF FLIGHT CREW MEMBERS AND OPERATIONAL PERSONNEL

1. Checking - Flight crew members

(1) Except as provided in subsections (3) and (5), each flight crew member shall successfully demonstrate his or her proficiency to a DFE or authorised person by undergoing a pilot proficiency check (PPC) on each type of aircraft operated -

(a) upon completion of initial type rating flight training;

(b) every six months (IFR) or 12 months (VFR) following initial type rating flight training; and

(c) upon completion of upgrade training.

(2) The PPC referred to in subsection (1) shall be completed as prescribed in Schedule One or Two of TS 93.03.8 as applicable to the type of aircraft operated and the operations conducted (IFR/VFR).

(3) In addition, each flight crew member of a high performance aircraft shall successfully complete a line check following initial or upgrade training and annually thereafter. Such line check shall be completed by

a DFE or testing officer and the results of the check recorded in the crew member's training records. A line check shall consist of an assessment of the flight crew member's ability to conduct safe operations over a variety of routes.

(4) An operator may be permitted checking credits for different types or variants of aircraft based on the demonstrated similarities between the aircraft, hereinafter referred to as aircraft grouping. Notwithstanding approved aircraft grouping, the initial PPC or competency check shall be completed on each type of aircraft operated and the subsequent PPCs or competency checks shall be accomplished on a rotating basis between the aircraft involved. For the purposes of this TS and CAR 93.03.7(1)(a), a recurrent PPC or CC completed on one aircraft type shall be deemed to have been completed on all aircraft types for which aircraft grouping has been approved.

(5) A record of each check completed as required by these TS shall be retained on the flight crew member's training record.

(6) Any two PPCs that are similar in nature and occur within 4 months of each other shall not alone satisfy the requirements of subsection (1)(b) above.

2. Checking - Load masters and winch operators

(1) Upon completion of any initial and recurrent type training, each load master and winch operator shall successfully demonstrate his or her knowledge and proficiency through the completion of a theoretical and practical examination administered by the responsible person.

(2) The Corporate Aviation operator shall establish the checking requirements following differences or familiarisation training which, in no case, shall be less than a knowledge test of the subject matter.

(3) Upon successful completion of any theoretical or practical check, the person's training records shall be annotated to indicate such person's competence as a load master or winch operator, as appropriate.

3. Checking - Flight operations officers

(1) Flight operations officers are subject to the following checking and certification requirements -

(a) examinations shall be administered to each flight operations officer (FOO) trainee at least at the completion of each phase of training syllabus as appropriate to the type of training undertaken. A FOO trainee shall not progress to a higher level of training until he or she has achieved a passing grade on each examination. All examinations shall be to a depth that ensures a high degree of comprehension has been demonstrated and shall be administered following initial, transition, regaining qualifications or recurrent training;

(b) for initial certification and thereafter on an annual basis, each FOO shall undergo a competency check. The applicant shall have successfully demonstrated the ability to:

(i) make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports; provide an operationally valid briefing on weather conditions prevailing in the general neighbourhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;

(ii) determine the optimum flight path for a given segment, and create accurate manual and/or computer generated flight plans;

(iii) provide operating supervision and all other assistance to a flight in actual or simulated adverse weather conditions, as appropriate to the duties of the holder of a FOO certificate; and

(iv) assist in accordance with established procedures in an emergency or overdue aircraft;

(c) the FOO check report shall be retained on the FOO's training file; and

(d) each FOO who has successfully completed the operator-specific training program shall receive a certificate of competency. Such certificate of competency shall be retained on the FOO's training file.

93.03.8 PILOT PROFICIENCY CHECKS (PPC)

AEROPLANES

SCHEDULE 1 - PPC Criteria Using Full Flight Simulators

1. Pre-flight Phase

(1) Flight planning and equipment examinations are not mandatory when there are, in the training records, written examinations from initial or annual training for which the validity period has not expired.

(2) Flight planning shall include a practical examination on the crew's knowledge of operator's approved Standard Operating Procedures and the Aircraft Flight Manual including aircraft and runway performance charts, and weight and balance procedures.

(3) The equipment examination shall consist of a display of practical knowledge of the airframe, engine, major components and systems including the normal, abnormal and emergency operating procedures and limitations relating thereto.

2. Flight Phase

(1) Taxiing -

(a) the use of the taxiing check list; and

(b) taxiing in compliance with clearances and instructions issued by the person conducting the PPC;

(c) where a SIC is undergoing the PPC, outlined above to the extent practicable from the SIC position.

(2) Engine Checks -

Engine checks shall be conducted as appropriate to the aircraft type.

(3) Take-off

(a) one normal take-off to be performed in accordance with the Aircraft Flight Manual;

(b) an instrument take-off in the minimum visibility approved for the operator;

(c) a take-off in a minimum of a 10kt crosswind component;

Note - *Any or all of the above take-offs may be combined*.

(d) a take-off with failure of an engine at a speed greater than V1 and at an altitude of less than 50 feet AGL; or at a speed as close as possible to, but greater than V1 when V1 and V2, or V1 and Vr are identical, such engine to be the critical engine if the aeroplane concerned has a critical engine; and

(e) a rejected take-off from a speed not less than 90% of the calculated V1 or as appropriate to the aeroplane type.

(4) Instrument Procedures -

Instrument procedures shall consist of IFR pre-flight preparations, terminal and en route procedures, arrival and departure procedures, system malfunctions and where applicable, the proper programming and use of flight management systems, as applicable -

(a) an area departure and an area arrival procedure shall be performed where the crew -

(i) adheres to air traffic control clearances and instructions; and

(ii) properly uses the available navigation equipment and facilities;

(b) a holding procedure;

(c) at least two instrument approaches performed in accordance with procedures and limitations in the AIP or in the equivalent foreign publication, or approved company approach procedure for the facility used. One of the approaches shall be a precision approach, and one a non-precision approach; and

(d) one approach and manoeuvre to land using a scene approved for circling where the operator is authorised for approaches at the published circling minima, and is required during initial qualification check and annually thereafter.

(5) Manoeuvres -

Manoeuvres for initial PPC type rating should be as published by the manufacturer in the aeroplane profiles section. For a recurrent PPC, flight profiles may be selected as deemed appropriate by the examiner but in any case the selected profiles must be demonstrated in accordance with the manufacturer's profiles. At least the following flight manoeuvres shall be demonstrated -

(a) at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°;

(b) approaches to stalls -

Note - *For the purpose of this manoeuvre the required approach to a stall is reached when there is a perceptible buffet or other alert to an impending stall*.

(i) the following approaches to stall configurations are required for initial and upgrade PPCs -

(aa) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane. In such case one stall should be demonstrated with the aeroplane configured for normal manoeuvring;

(bb) one in a clean configuration; and

(cc) one in a landing configuration; and

(ii) on the approach to a stall demonstrated in the manoeuvring configuration the aeroplane shall be placed into a turn with a bank angle of between 15° and 30°.

Note - *Steep turns and approach to stalls are not required if the PPC is conducted via either a LOFT scenario, a scripted PPC or on a fly-by-wire aeroplane, and -*

1. for an initial PPC on aeroplane type, steep turns and approach to stalls have been satisfactorily demonstrated during initial training; and

2. for a semi-annual or an annual PPC if -

(a) steep turns and approach to stalls are required in the applicable annual training syllabus and they have been satisfactorily demonstrated during this training; or

(b) steep turns and approach to stalls are not required in the applicable annual training syllabus.

(6) Landings and Approaches to Landings -

(a) one normal landing;

(b) one landing from an approach in Instrument Meteorological Conditions (IMC) not greater than the minimum recommended for the approach;

(c) one crosswind landing with a minimum of a 10kt crosswind component;

(d) one landing and manoeuvre to that landing with, depending on aeroplane type, an engine failure as follows -

(i) for a two engine aeroplane, failure of one engine;

(ii) for a three engine aeroplane, failure of the centre engine combined with the failure of one outboard engine for the PIC, and failure of one outboard engine only for other than the PIC;

(iii) for a four engine aeroplane, failure of two engines on the same side for the PIC and failure of one outboard engine only for other than the PIC.

Note - *For three and four engine aeroplanes, the pilot-in-command is required to perform a two engine inoperative procedure during the initial qualification check and annually thereafter*.

(e) one rejected landing and one missed approach. For the purposes of the rejected landing the landing shall be rejected at a height of approximately 50 feet when the aeroplane is approximately over the runway threshold. The rejected landing may be combined with a missed approach;

(f) Category II or Category III approaches during the initial qualification flight and annually thereafter as follows -

(i) where CAT II approaches are authorised in the Corporate Aviation Operator certificate or are requested to be performed, the following is required -

(aa) for a PIC initial qualification -

(A) one CAT II ILS approach during which a practical emergency is introduced aimed at assessing crew coordination in decision making and the resultant missed approach; and

(B) a second CAT II ILS approach to a landing in CAT II weather minima;

(bb) for a PIC requalification on CAT II approaches, at least one CAT II ILS approach to a landing annually; and

(ii) where both CAT II and CAT III approaches are authorised in the Corporate Aviation Operator certificate or the flight crew required to perform, the following is required for a PIC initial qualification -

(aa) one CAT II ILS approach during which a practical emergency is introduced aimed at assessing crew co-ordination in decision making and the resultant missed approach; and

(bb) a CAT III ILS approach conducted to a landing in CAT III weather minima; and

Note - *For a pilot-in-command requalification on CAT II and CAT III approaches, successive 6 month PPCs in an approved simulator will alternate CAT II and CAT III renewal checks*.

(g) one landing without the use of an auto-land system.

Note - *Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required*.

(7) Normal Procedures -

The crew shall demonstrate use of as many of the operator's approved SOPs and normal procedures as are necessary to confirm that the crew has the knowledge and ability to properly use installed equipment (autopilot and hand-flown manoeuvres as appropriate).

(8) Abnormal and Emergency Procedures -

(a) the crew shall demonstrate use of as many of the operator's approved SOPs and abnormal and emergency procedures for as many of the situations as are necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures;

(b) system malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions; and

(c) at least two simulated engine failures, excluding failures on the runway followed by a rejected take-off, at any time during the check.

(9) Airborne Manoeuvres -

Where the PPC is conducted following initial training in a level A or B training program, the following flight checking is required within 30 days after the PPC in a synthetic training device and may be run concurrent with the flight training requirements on the aeroplane type in the applicable training program -

(a) interior and exterior aeroplane pre-flight checks;

(b) ground handling for pilots-in-command;

(c) normal take-off, visual circuit (where possible) and landing;

(d) a simulated engine failure procedure after take-off (at safe altitude and airspeed);

(e) a simulated engine inoperative landing; and

(f) a normal missed approach.

SCHEDULE 2 PPC Criteria Using the Aeroplane Only

1. Pre-flight Phase

(1) Flight Planning and Equipment Examination -

(a) flight planning and equipment examinations are not mandatory when there are, in the training records, written examinations from initial or annual training for which the validity period has not expired;

(b) flight planning shall include a practical examination on the pilot's knowledge of standard operating procedures and the Aircraft Flight Manual including performance charts, loading, weight and balance and Flight Manual Supplements; and

(c) the equipment examination shall show a practical knowledge of the airframe, engine, major components and systems including the normal, abnormal and emergency operating procedures and limitations relating thereto.

(2) Aeroplane Inspection

A pre-flight aeroplane inspection that includes -

(a) a visual inspection of the exterior and interior of the aeroplane, locating each item to be inspected and explaining the purpose of the inspection;

(b) the proper use of the pre-start, start and pre-taxi check lists; and

(c) checks of the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

2. Flight Phase

(1) Taxiing

(a) taxiing procedures;

(b) a taxiing check including -

(i) the use of the taxiing check list; and

(ii) taxiing in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the person conducting the PPC; and

(iii) where a SIC is undergoing the PPC, the taxiing check outlined above to the extent practicable from the SIC position.

(2) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(3) Take-off

(a) one normal take-off to be performed in accordance with the Aircraft Flight Manual or where the aeroplane is a turbo-jet, a noise abatement take-off performed in accordance with the Aircraft Flight Manual (where applicable) and the IAIP;

(b) an instrument take-off performed in the same manner as the normal take-off except that instrument flight rules are simulated at or before reaching an altitude of 200 feet above the airport elevation;

(c) where practicable under existing meteorological, airport or airport traffic conditions, one crosswind take-off performed in accordance with the aeroplane operating manual where applicable;

Note - *Any or all of the above take-offs may be combined*.

(d) a simulated engine failure after take-off (at a safe altitude and airspeed) appropriate to the aeroplane type under the prevailing conditions; and

(e) a rejected take-off explained by the candidate prior to the flight.

(4) Instrument Procedures Instrument procedures shall consist of IFR pre-flight preparation, departure and en route procedures, terminal procedures and system malfunction -

(a) an area departure and an area arrival procedure shall be performed where the pilot -

(i) adheres to actual or simulated air traffic control clearances and instructions; and

(ii) properly uses the available navigation facilities;

(b) a holding procedure;

(c) at least two instrument approaches performed in accordance with procedures and limitations in the IAIP or the equivalent foreign publication, or approved company approach procedure for the approach facility used. Where practicable one of the approaches shall be a precision approach and one a non-precision approach;

(d) a circling approach, where the operator is authorised for circling minima below ceiling 1 000 feet and 3 miles ground visibility, except where local conditions beyond the control of the pilot prevent a circling approach from being performed.

(5) In Flight Manoeuvres -

(a) at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°; and

(b) approaches to stalls -

Note - *For the purpose of this manoeuvre the required approach to a stall is reached when there is a perceptible buffet or other alert to an impending stall*.

The following approaches to stall configurations are required for initial and upgrade PPCs -

(i) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane. In such case one stall should be demonstrated with the aeroplane configured for normal manoeuvring;

(ii) one in a clean configuration; and

(iii) one in a landing configuration.

(c) On the approach to a stall demonstrated in the manoeuvring configuration the aeroplane shall be shall be placed into a turn with a bank angle of between 15° and 30°;

(d) For the purpose of this manoeuvre the required recovery from a stall is initiated when there is a perceptible buffet or other alert of an impending stall entry.

(e) When performed in an aeroplane the approach to stalls shall be conducted at an altitude of at least 5 000 feet AGL and if conducted above cloud at an altitude of at least 2 000 feet above the cloud tops.

(6) Landings and Approaches to Landings -

(a) one normal landing which shall, where practicable, be conducted without external or internal glideslope information;

(b) one landing from an instrument approach, and where prevailing conditions prevent an actual landing, an approach to a point where a landing could have been made;

(c) one cross wind landing where practicable under existing meteorological, airport and airport traffic conditions;

(d) one landing and manoeuvring to that landing with a simulated failure of 50 per cent of the available engines which shall be on one side of the aeroplane for the PIC and on outboard engine only for other than the PIC. Where the aeroplane type is a three engine aeroplane, the loss of power shall be an outboard engine and the centre engine for the PIC and on outboard engine for other than the PIC. For three- and four-engine aeroplanes the PIC is required to perform a two-engine inoperative procedure during initial qualification check and annually thereafter; and

(e) one landing under simulated circling approach conditions except that where prevailing conditions prevent a landing, an approach to a point where a landing could have been made.

Note - *Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required*.

(7) Normal Procedures

The crew shall demonstrate use of as many of the operator's approved Standard Operating Procedures, and normal procedures as are necessary to confirm that the crew has the knowledge and ability to properly use installed equipment, (autopilot and hand flown manoeuvres as appropriate).

(8) Abnormal and Emergency Procedures -

(a) the crew shall demonstrate use of as many of the operator's approved Standard Operating Procedures and abnormal and emergency procedures for as many of the emergency situations as is necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures;

(b) system malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions;

(c) at least two simulated engine failures any time during the check shall be introduced.

HELICOPTERS SCHEDULE 1 PPC Criteria Using Full Flight Simulators

Under Development

SCHEDULE 2 PPC Criteria Using the Helicopter Only

Under Development

93.04.2 OPERATIONS MANUAL (Applicable to Corporate Aviation Operators only)

1. Structure of operations manual

(1) A Corporate Aviation Operator's operations manual (OM) may consist of one manual or, due to the size and complexity of the operation, may consist of several manuals, in which case the operator has

established an operations manual system. For the purposes of this technical standard (TS), the term "operations manual" includes an "operations manual system" if that is what the operator has established.

(2) A Corporate Aviation operator shall 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 CAR.

Part 2: Aircraft 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 aircraft 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.

(3) A Corporate Aviation Operator must ensure that the contents of the operations manual are in accordance with section 2 of this TS and relevant to the area and type of operation and that each manual in the system of manuals, if applicable, contains at least the following introductory layout -

(a) title page;

(b) table of contents;

(c) record of amendments page; and

(d) list of effective pages.

(4) A Corporate Aviation Operator must ensure that the detailed structure of the operations manual is approved by the Executive Director.

2. Contents of operations manual

2.1. PART 1: GENERAL

2.1.1. Administration and control of operations manual

(1) An operations manual shall contain certain statements and provisions for the manual administration and control and include at least the following -

(a) a statement that the manual is intended to comply with -

(i) all applicable acts, regulations and associated technical standards;

(ii) the terms and conditions of the Corporate Aviation Operating Certificate (CAOC); and

(iii) the authorisations, conditions and limitations of the operations specifications associated with the CAOC;

(b) a statement that, where any person is confronted with an operational situation not contemplated by the operations manual, such person will be expected to act in accordance with his or her most conservative discretion. Furthermore, where any

part of the manual is considered to be repugnant to any provision referred to in sub-paragraph (a), such person shall comply with the respective legal statute and report the discrepancy to the responsible person by the quickest means possible;

(c) a statement that the manual contains operational instructions that are to be complied with by the relevant personnel;

(d) a list and brief description of the various parts, their contents, applicability and use (table of contents);

(e) explanations and definitions of terms and words needed for the use of the manual;

(f) where a manual system is in use by the operator, provisions for the issuance of each component in separate parts corresponding to specific aspects of the operation; and

(g) a brief description, by whatever means, of the operator's manual system that lists all operational and technical manuals developed or adopted by the operator for the purpose of ensuring operations personnel have been provided all information necessary for the performance of their duties. The means by which the description is provided shall indicate which manuals, or parts thereof, of the manual system will be available on board an aircraft during flight time.

(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) in the interests of aviation safety, a statement that provides for the rapid dissemination of operational information with a system of priorities governing the implementation process. 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; and

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

2.1.2. Organisation and responsibilities

(1) Organisational structure

(a) For the purposes of this technical standard, the term "functional area" refers to a specific aspect of the corporate aviation operator's business, such as flight operations or maintenance, for which a person would normally be assigned the responsibility for its operation. In larger companies a functional area would be termed "division" or "department".

(b) A description of the organisational structure through the use of one or more organograms. The organogram(s) must depict the relationship between all functional areas related to the safety of operations (e.g. flight operations, maintenance, training, quality, safety and security), including their relationship to the chief executive officer. In particular, the subordination and reporting lines between the various post-holders shall be shown.

(2) Post-holders

The name, functions and responsibilities of each post-holder shall be listed.

(3) Responsibilities and duties of designated personnel

The specific responsibilities and duties delegated by a post-holder to certain personnel, within a functional area, shall be described.

(4) Authority, duties and responsibilities of the pilot-in-command (PIC) The authority, duties and responsibilities of the PIC shall be defined.

(5) Duties and responsibilities of crew members other than the PIC

The duties and responsibilities of crew members, other than the PIC, shall be defined.

2.1.3. Operational control and supervision

(1) Supervision of the operation by the corporate aviation operator

The system for supervision of the operation by the corporate aviation operator shall be described. This must show how the safety of flight operations and the qualifications of personnel are supervised. In particular, the procedures related to the following items must be described -

(a) licence and qualification validity;

(b) competence of operations personnel; and

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

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

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

(3) Operational control

(a) The procedures and responsibilities necessary to exercise operational control with respect to flight safety shall be described.

(b) The policies and procedures for third parties that perform work on behalf of the air service operator shall be prescribed.

2.1.4. Safety management system (SMS)

A description of the organisation of, roles and responsibilities of the personnel employed in, and policies and procedures associated with the safety management system. The description of the

SMS may be contained in a separate manual depending upon the size and complexity of the corporate aviation operator. For more information on the SMS, refer to Part 140.

2.1.5. Quality management system (QMS)

A description of the organisation of, roles and responsibilities of the personnel employed in, and policies and procedures associated with the QMS, which is normally integrated with the SMS. The description of the QMS may be contained in the SMS manual or a quality management manual (QMM) depending upon the size and complexity of the corporate aviation operator.

2.1.6. Flight crew composition

(1) Flight crew composition

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

(a) the type of aircraft, i.e.: fixed wing or helicopter, being used;

(b) the area and type of operation being undertaken;

(c) the phase of the flight;

(d) the minimum flight crew requirement and flight duty period planned;

(e) minimum flight time experience requirements, recency and qualification of the flight crew members; and

(f) the designation of the PIC and, if necessitated by the duration of the flight, the procedures for the relief of the PIC or other members of the flight crew.

(2) Designation of the PIC

An explanation of the method established for designating one PIC for each flight.

(3) Flight crew incapacitation

A description of the succession of command in the event of flight crew member incapacitation shall be included.

2.1.7. 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 aircraft type, kind of operation and composition of the flight crew.

(2) Flight deck crew

(a) Pilot-in-command;

(b) Second-in-command, if applicable;

(c) Pilot under supervision;

(d) Cruise relief pilot, if applicable; and

(e) 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 deck crew

(b) For cabin crew.

(5) Other operations personnel.

2.1.8. Flight crew health precautions

Guidance to flight crew members concerning health including -

(a) alcohol and other intoxicating liquor;

(b) narcotics;

(c) drugs;

(d) sleeping tablets;

(e) pharmaceutical preparations;

(f) immunisation;

(g) meal precautions prior to and during flight;

(h) sleep and rest; and

(i) surgical operations.

2.1.9. Flight time and duty period limitations

(1) Flight time and duty period limitations and rest requirements

A description of the operator's approved flight time and duty period programme.

(2) Provisions for exceeding 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.

2.1.10. Operating procedures

(1) Flight preparation instructions

As applicable to the operation -

(a) 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) the method for establishing aerodrome, and/or heliport, operating minima for IFR flights in accordance with TS 91.07.5 of document NAM-CATS 91. 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, reported visibility and reported RVR.

(d) en route operating minima for IFR and 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, including the increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities;

(f) interpretation of meteorological information, including explanatory material on the decoding of MET forecasts and MET reports relevant to the area of operations, including the interpretation of conditional expressions;

(g) 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 re-planning and of failure of one or more of the aircraft's power plants or loss of pressurisation. The system for maintaining fuel and oil records must also be described;

(h) 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 aircraft type;

(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) procedures and responsibilities for the preparation and submission of the air traffic service flight plan. Factors to be considered include the means of submission for both individual and repetitive flight plans;

(j) procedures and responsibilities for the preparation and acceptance of the operational flight plan. The content and use of the operational flight plan must be described;

(k) the responsibilities and the use of the operator's flight folio must be described. A technical log may be used in place of a flight folio, if it contains the required information; and

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

(2) Ground handling instructions

As applicable to the operation -

(a) a description of fuelling procedures, including -

(i) safety precautions during refuelling and defueling including when an APU is in operation or when a turbine engine is running and the propbrakes are on;

(ii) refuelling and defueling when passengers are embarking, on board or disembarking; and

(iii) precautions to be taken to avoid mixing fuels;

(b) a description of the handling procedures to be used when allocating seats and embarking and disembarking passengers and when loading and unloading the aircraft. Further procedures, aimed at achieving safety whilst the aircraft is on the apron, must also be given. Handling procedures must include -

(i) disembarking of persons;

(ii) sick passengers and persons with reduced mobility;

(iii) transportation of inadmissible passengers, deportees or persons in custody;

(iv) permissible size and weight of hand baggage;

(v) loading and securing of items in the aircraft;

(vi) special loads and classification of load compartments;

(vii) positioning of ground equipment;

(viii) operation of aircraft doors;

(ix) safety on the apron, including fire prevention, blast and suction areas;

(x) start-up, apron departure and arrival procedures;

(xi) servicing of aircraft;

(xii) documents and forms for aircraft handling; and

(xiii) multiple occupancy of aircraft seats;

(c) 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) a description of the de-icing and anti-icing policy and procedures for aircraft on the ground. These must include descriptions of the types and effects of icing and other contaminants on aircraft 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 aircraft performance;

(iv) hold-over times; and

(v) precautions during usage.

(3) Flight procedures

As applicable to the corporate aviation operation -

(a) 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) a description of all navigation procedures relevant to the type(s) and area(s) of operation and equipment required to operate therein. Consideration shall be given to -

(i) standard navigation procedures including policy for carrying out independent cross-checks of navigation data entries;

(ii) RVSM as contemplated in Technical Standard 91.04.31 in Document NAM-CATS 91;

(iii) RNP, MNPS and POLAR navigation and navigation in other designated areas,

(iv) RNAV;

(v) in-flight replanning; and

(vi) procedures in the event of system degradation;

(c) circumstances in which a radio listening watch is maintained;

(d) instructions on -

(i) the use of normal checklists and the timing of such use;

(ii) departure contingency procedures;

(iii) altimeter setting procedures;

(iv) altitude alerting system procedures;

(v) stabilised approach procedure and the limitation on high rates of descent near the surface;

(vi) the conduct of instrument approaches and the conditions required to commence or to continue an instrument approach;

(vii) CRM procedures at night or in IMC;

(e) TAWS procedures;

(f) policy and procedures for the use of ACAS;

(g) policy and procedures for in-flight fuel management;

(h) procedures for operating in, or avoiding, or recording and reporting of special, routine and non-routine meteorological observations during any phase of flight and potentially hazardous atmospheric conditions including -

(i) thunderstorms;

(ii) icing conditions;

(iii) turbulence;

(iv) windshear;

(v) jetstreams;

(vi) volcanic ash clouds;

(vii) heavy precipitation;

(viii) sand storms;

(ix) mountain waves;

(x) significant temperature inversions;

(xi) space weather events; and

(xii) report the runway braking action through an AIREP when the runway braking action encountered is not as good as reported.

(i) wake turbulence separation criteria, taking into account aircraft types, wind conditions and runway location;

(j) procedures in the event that a decision to descend is taken while en route, covering-

(i) the necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and

(ii) the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted.

(k) the requirements for flight crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interests of aviation safety;

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

(m) the conditions for the admission to the flight deck of persons other than the flight crew;

(n) the conditions and procedures for the use of vacant flight crew seats;

(o) procedures to be followed in the event of incapacitation of flight crew members in flight. Examples of the types of incapacitation and the means for recognising them, must be included;

(p) 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 aircraft;

(iii) procedures to be followed during passenger embarkation and disembarkation;

(iv) procedures in the event of fuelling with passengers on board or embarking and disembarking; and

(v) smoking on board;

(q) the contents, means and timing of passenger briefing in accordance with CAR 93.07.27;

(r) lists of the survival and emergency equipment required for each route or area of operation and the procedures to ensure such equipment has been inspected and/or is functioning properly prior to departure;

(s) information and instructions relating to the interception of civil aircraft including -

(i) procedures for pilots-in-command of intercepted aircraft; and

(ii) visual signals for use by intercepting and intercepted aircraft;

(t) procedures for the use of head-up displays (HUD), enhanced vision systems (EVS) and night vision goggles, as applicable; and

(u) if applicable to the aeroplane being operated, procedures for the use of required 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.

(4) All weather operations

(5) EDTO procedures, including engine failure procedures and the nomination of alternate aerodromes

(6) Use of the minimum equipment and configuration deviation list(s)

(7) Development and use of standard operating procedures (SOPs) whether stand alone or as part of an aircraft operating manual.

(8) 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.

(9) Oxygen requirements

(a) An explanation of the conditions under which oxygen must be provided and used.

(b) The oxygen requirements specified for -

(i) flight deck crew;

(ii) Cabin crew; and

(iii) passengers.

2.1.11. Dangerous goods and weapons

(1) If applicable, 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 in the conveyance of dangerous goods as referred to in a Part 92;

(2) The conditions under which weapons, munitions of war and sporting weapons may be carried.

(3) For operators not authorised to convey dangerous goods, policies and procedures to create an awareness of dangerous goods.

2.1.12. 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 Corporate Aviation Operator shall publish an on-board means of establishing and communicating discrete signals between crew members as a defence against air piracy without providing specific information with respect to the actual discrete communications.

(3) A description of preventative security measures and training.

Note - *Parts of the security instructions and guidance may be kept confidential.*

2.1.13. Handling of aviation accidents and incidents

Procedures for the handling, notifying and reporting of aviation accidents and incidents shall be described. This section must include -

(a) definitions of aviation accidents and incidents and the relevant responsibilities of all persons involved;

(b) a description of which corporate aviation operator departments, authorities or other institutions have to be notified and by which means and in which sequence in case of an aviation accident;

(c) special notification requirements in the event of an aviation accident or incident when dangerous goods are being carried;

(d) a description of the requirements to report specific aviation accidents and incidents;

(e) the forms used for reporting and the procedure for submitting them to the relevant authority must also be included; and

(f) if the corporate aviation operator develops additional safety related reporting procedures for its own internal use, a description of the applicability and related forms to be used.

2.1.14. Rules of the air

Rules of the air including:

(a) visual and instrument flight rules;

(b) territorial application of the rules of the air;

(c) communication procedures including COM-failure procedures;

(d) information and instructions relating to the interception of civil aircraft;

(e) the circumstances in which a radio listening watch is to be maintained;

(f) signals;

(g) time system used in operation;

(h) ATC clearances, adherence to flight plan and position reports;

(i) visual signals used to warn an unauthorised aircraft flying in or about to enter a restricted, prohibited or danger area;

(j) procedures for pilots observing an aviation accident or receiving a distress transmission;

(k) the ground/air visual codes for use by survivors, description and use of signal aids; and

(l) distress and urgency signals.

2.2. PART 2: AIROPLANE 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. aircraft dimensions), including a description of the units of measurement used for the operation of the aircraft type concerned and conversion tables.

2.2.2. Limitations

A description of the certified limitations and the applicable operational limitations including -

(a) certification status;

(b) passenger seating configuration for each aircraft type including a pictorial presentation;

(c) types of operation that are approved (e.g. IFR/VFR, CAT II/III, flights in known icing conditions, etc.);

(d) flight crew composition;

(e) mass and centre of gravity;

(f) speed limitations;

(g) flight envelope(s);

(h) wind limits including operations on contaminated runways;

(i) performance limitations for applicable configurations;

(j) runway slope;

(k) limitations on wet or contaminated runways;

(l) airframe contamination; and

(m) system limitations.

2.2.3. Normal procedures

The normal procedures and duties assigned to the flight crew and the appropriate check-lists and the system for use of the checklists. The following normal procedures and duties must be included -

(a) Pre-flight;

(b) Pre-departure;

(c) altimeter setting and checking;

(d) taxi, take-off and climb;

(e) noise abatement;

(f) cruise and descent;

(g) approach, landing preparation and briefing;

(h) VFR/VMC approach;

(i) instrument approach;

(j) visual approach and circling;

(k) missed approach;

(l) normal landing;

(m) post landing; and

(n) operation on wet and contaminated runways.

2.2.4. Abnormal, emergency and supplementary procedures

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

(a) flight crew incapacitation;

(b) fire and smoke drills;

(c) unpressurised and partially pressurised flight;

(d) exceeding structural limits such as overweight landing;

(e) exceeding cosmic radiation limits;

(f) lightning strikes;

(g) distress communications and alerting ATC to emergencies;

(h) engine failure;

(i) system failures;

(j) guidance for diversion in case of serious technical failure;

(k) ground proximity warning;

(l) ACAS warning;

(m) windshear;

(n) emergency landing/ditching; and

(o) emergency evacuation.

2.2.5. Performance

(1) Performance data must be provided in a form in which it can be used without difficulty.

(2) Performance material which provides the necessary data for compliance with the performance requirements prescribed in Subpart 8 of CAR must be included to allow the determination of -

(a) maximum crosswind and tailwind components and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, abnormal or emergency circumstances or any other relevant operational factors;

(b) take-off climb limits - mass, altitude, temperature;

(c) take-off field length (dry, wet, contaminated);

(d) net flight path data for obstacle clearance calculation or, where applicable, take-off flight path;

(e) the gradient losses for banked climb-outs;

(f) en route climb limits;

(g) approach climb limits;

(h) landing climb limits;

(i) landing field length (dry, wet, contaminated) including the effects of an in-flight failure of a system or device, if it affects the landing distance;

(j) brake energy limits;

(k) speeds applicable for the various flight stages (also considering wet or contaminated runways); and

(l) aeroplane climb performance with all engines operating to enable the PIC to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique.

(3) Supplementary data covering flights in icing conditions, in consideration of -

(a) Any certificated performance related to an allowable configuration, or configuration deviation, such as anti-skid inoperative, must be included; and

(b) if performance data, as required for the appropriate performance class, is not available in the approved AFM, then other data acceptable to the Executive 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 aeroplane performance data, where applicable, including -

(a) all engine climb gradients;

(b) drift-down data;

(c) effect of de-icing/anti-icing fluids;

(d) flight with landing gear down;

(e) for aeroplanes with 3 or more engines, one engine inoperative ferry flights; and

(f) flights conducted under the provisions of the CDL.

(5) Additional helicopter performance data, where applicable, including:

(a) effect of equipment on level flight (fuel consumption, speed and range), including-

(i) hoist installation;

(ii) sliding doors, whether open or closed;

(iii) ski installation;

(iv) float installation;

(v) emergency float installation; and

(vi) sand filter installation; and

(b) effects on 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, EDTO and flights to isolated aerodromes must be included.

(2) The method for calculating fuel needed for the various stages of flight in accordance with CAR 91.07.12.

2.2.7. Mass and balance

Instructions and data for the calculation of the mass and balance including -

(a) calculation system (e.g. index system);

(b) information and instructions for completion of mass and balance documentation, including manual and computer generated types;

(c) limiting masses and centre of gravity of the various versions; and

(d) dry operating mass and corresponding centre of gravity or index.

2.2.8. Loading

The procedures and provisions for loading and securing the load in the aircraft shall be described.

2.2.9. Configuration deviation list (CDL), if applicable

The company approved procedures for the use of a CDL, if provided by the manufacturer, taking account of the aircraft types and variants operated including procedures to be followed when an aircraft is being dispatched under the terms of its CDL.

2.2.10. Minimum equipment list (MEL)

The company procedures for the use of an approved MEL taking account of the aircraft types and variants operated and the type(s)/area(s) of the corporate aviation operation.

2.2.11. Survival and emergency equipment including oxygen

(1) A list of the survival equipment to be carried for the routes to be flown and the procedures for checking the serviceability of this equipment prior to take-off. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated check lists(s) must also be included.

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

2.2.12. Emergency evacuation procedures

(1) Instructions for preparation for emergency evacuation including flight crew coordination and emergency station assignment.

(2) A description of the duties of all members of the flight crew for the rapid evacuation of an aircraft and the handling of the passengers in the event of a forced landing, rejected take-off, ditching or other emergency.

2.2.13. Aircraft systems

A description of the aircraft systems, related controls and indications and operating instructions shall be included.

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-

(a) minimum flight level/altitude;

(b) operating minima for departure, destination and alternate aerodromes;

(c) communication facilities and navigation aids;

(d) runway/landing site data and aerodrome facilities;

(e) approach, missed approach and departure procedures including noise abatement procedures;

(f) COM-failure procedures;

(g) search and rescue facilities in the area over which the aircraft is to be flown;

(h) 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;

(i) availability of aeronautical information and MET services;

(j) en route COM/NAV procedures including holding; and

(k) aerodrome categorisation for flight crew competence and qualifications.

2.4. PART 4: TRAINING

(1) Training syllabi and checking programmes for all flight crew members and operations personnel other than flight crew members who are assigned to duties in connection with the preparation and/or conduct of a flight.

(2) Training syllabi and checking programmes shall include -

(a) for flight crew members, all relevant items prescribed in Part 61 and Subpart 3 of this Part;

(b) for cabin crew, all relevant items prescribed in Part 64 and Subpart 3 of Part 93; and

(c) for operations personnel concerned, including flight crew members -

(i) all relevant items prescribed in Part 92; and

(ii) all relevant items regarding operator security

(d) for operations personnel other than flight crew members, all relevant items pertaining to their duties as specified in Subpart 3 of this Part.

(3) Procedures -

(a) For training and checking;

(b) to be applied in the event that personnel do not achieve or maintain the required standards; and

(c) 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 corporate aviation flights.

(4) Description of documentation to be retained and the storage periods.

93.04.4 OPERATIONAL FLIGHT PLAN

1. Types of operational flight plans

(1) Although each flight must be released in accordance with the provisions of an OFP/flight release, the actual OFP should be appropriate to the type of flight being undertaken.

(2) A Corporate Aviation Operator must publish in its operations manual a description, whether computer or manually generated, of the different OFPs used by the operator and include instructions as to the preparation, acceptance, flight and ground management of the OFP and the procedures for retention.

(3) The contents of an OFP are based on the different types of flights undertaken under this Part. Accordingly-

(a) a full OFP as specified in section 2(1) is required for -

(i) all international flight operations; and

(ii) IFR operations;

(b) an OFP consisting of at least those items indicated by a single asterisk in section 2(1) is required for helicopters on VFR or IFR short positioning flights and day or night VFR aeroplane operations using-

(i) multi-engine aeroplanes; and

(ii) single-engine aeroplanes with a maximum certificated passenger seating in excess of nine;

(c) an OFP consisting of at least those items listed in section 2(2) may, in lieu of the OFP prescribed in paragraph (3)(a) or (3)(b), as applicable, be used when conducting a series of flights, that meet the following criteria -

(i) the series of flights shall not result in flight time longer than 90 minutes in total;

(ii) no individual sector shall be longer than 30 minutes; and

(iii) the time spent on the ground at each en route stop shall not exceed 30 minutes; and

(d) an informal OFP, being either an ATC flight plan or equivalent record, is required for day or night VFR operations using single- engine aircraft with a maximum certificated passenger seating of 9 or less.

(4) The format of the full OFP shall allow the crew to record the fuel state and the progress of the flight relative to the plan. The OFP may be computer-generated or produced manually, working from charts

and tables, by either the FOO or the flight crew. When an OFP is prepared manually, an approved form displaying the requisite information and providing the necessary space to make flight following entries as the flight progresses shall be used.

(5) A Corporate Aviation Operator shall specify in its operations manual how formal acceptance of the OFP by the PIC and the FOO shall be recorded.

2. Operational flight plans

(1) The minimum required content of an OFP is as follows but each field shall be considered as applicable to the type of flight, the type of aircraft and the type of operational control system (OCS) to which the OFP applies -

Note - *Asterisks by an item indicate information required for the OFP specified in section 1(3) of this TS.*

(a) *operator's name;

(b) *date and ETD at points of departure and ETA at destinations;

(c) *aircraft registration or aircraft tail number, as applicable;

(d) aircraft type and model or variant, as applicable;

(e) *flight number, as applicable;

(f) *flight crew members' names and, unless recorded elsewhere, assigned position;

(g) *flight operations officer's name if flight is not pilot self-dispatch;

(h) *number of cabin crew and passengers on board, as amended by final load figures, unless recorded elsewhere;

(i) *departure aerodrome;

(j) *destination aerodrome;

(k) alternate aerodrome, as applicable, including en route alternates where required;

(l) routing to destination by successive navigational way points, including associated tracks and distances for each;

(m) routing to alternate aerodrome, including associated tracks and distances, if applicable;

(n) specification of any way points en route to satisfy special operations requirements (EDTO, etc.);

(o) planned cruise altitudes to destination and alternate, as applicable, and minimum safe altitudes along planned routes;

(p) planned cruise indicated air speed or Mach number, as applicable, true air speed and ground speed or wind component during cruise;

(q) winds at planned cruise altitude (expressed in terms of direction/velocity or as a component/drift angle);

(r) *estimated time en route (if broken down into way point time components, a total shall be specified);

(s) time from destination to alternate, as applicable;

(t) distance to destination (if broken down into way point distance components, a total shall be specified);

(u) distance from destination to alternate, as applicable;

(v) fuel burn en route and from destination to alternate;

(w) record of in-flight fuel checks completed in accordance with CAR 93.07.17;

(x) *fuel computation breakdown required for the type of flight plan for, as applicable, -

(i) taxi;

(ii) *destination;

(iii) alternate;

(iv) holding reserve;

(v) en route reserve, as applicable;

(vi) *contingency fuel, as applicable; and

(vii) *the fuel on board when starting engines (entered by flight crew), unless recorded elsewhere; and

(viii) *mass and balance showing -

(aa) *total planned fuel on board;

(bb) zero fuel weight; and

(cc) *planned maximum take-off weight and C of G location or trim position, as applicable.

(ix) *signature of pilot-in-command and the flight operations officer (FOO), as applicable, or alternate means of certifying acceptance

(2) The minimum required content of an OFP used for a series of flights as prescribed in section 1(3)(c) is as follows -

(a) operator's name;

(b) date;

(c) aircraft registration or aircraft tail number, as applicable;

(d) aircraft type and model or variant, as applicable;

93.04.6 TRAINING RECORDS

1. Training records

(1) The training file referred to in CAR 93.04.6, shall include a record of -

(a) a copy of a signed personnel licence or validation of foreign licence, if applicable;

(b) if applicable, a copy of the persons current medical certificate ;

(c) the dates of the most recent successful completion of any training, pilot proficiency check (PPC) or competency check (CC), examination or other crew member skills test required in terms of CAR Subpart 3 or obtained any qualification required in terms of Part 61 or this TS;

(d) the report of any check or skills test completed;

(e) information relating to any failure of the person, to successfully complete any training, PPC or examination required in terms of CAR Subpart 3 or to obtain any qualification required in terms of Part 61 or this TS;

(f) the type of aircraft or flight training equipment used for any training, PPC, line check or qualification required under this technical standard;

(g) any certificate required to be kept in terms of CAR Subpart 3; and

(h) The most recent written examination completed for each type of aircraft for which the person has a qualification.

(2) A Corporate Aviation Operator shall maintain a system for recording the qualifications and training of instructional and examining staff, as appropriate.

(3) An operator shall retain the records referred to in paragraphs (1)(c) and (d) and a record of each PPC for at least three years.

(4) An operator shall retain any certificate referred to in paragraph (1)(g) for at least 90 days beyond the duration of its validity period.

93.04.7 LOAD AND TRIM SHEET

1. Load and trim sheet

(1) The load and trim sheet must contain the following information -

(a) The aircraft registration and type;

(b) the flight identification number and date;

(c) the identity of the pilot-in-command;

(d) the identity of the person who prepared the document;

(e) the dry operating mass and the corresponding CG of the aircraft;

(f) the mass of the fuel at take-off and the mass of trip fuel;

(g) the mass of consumables other than fuel;

(h) the components of the load including passengers, baggage, freight and ballast;

(i) the take-off mass, landing mass and zero fuel mass;

(j) the load distribution;

(k) the applicable aircraft CG positions; and

(l) the limiting mass and CG values.

(2) The person superintending the loading of an aircraft must certify that the load distribution is in accordance with the requirements prescribed in the operations manual or flight manual and that the maximum certificated mass has not been exceeded.

(3) The load and trim sheet must be signed by the pilot-in-command (PIC) prior to departure unless the load and trim sheet is sent to the aircraft by electronic data transfer, in which case the PIC shall ensure it has been reviewed and he or she is satisfied the flight is safe for departure.

(4) The means by which the PIC certifies acceptance of the load and trim sheet shall be published in the operations manual (CAOC holders only).

(5) A copy of the final load and trim sheet, as accepted by the pilot-in-command, must be available at a location on the ground as determined by the PIC.

93.06.3 APPLICATION FOR THE ISSUANCE OR AMENDMENT OF A CAOC AND OPERATIONS SPECIFICATIONS

1. Application for a CAOC

(1) The form and manner referred to in CAR 93, Subpart 6 in which application is made for the issuance or amendment of a corporate aviation operator certificate (CAOC) or operations specifications is referred to in this TS as the certification process. This process is designed to address the following certification actions-

(a) initial certification of a corporate aviation operator in terms of this Part;

(b) revision to any existing CAOC or operations specification (OpSpec) issued in terms of this Part;

(c) corrective certification action of an existing CAOC or OpSpec where deficiencies have been discovered through the continuing safety oversight program, or where appropriate; or

(d) any other certification action requested by an operator, operating or desiring to operate in terms of this Part.

(2) The process used to accomplish any certification activity entails the applicant successfully completing the five phases of certification. An application may not progress where any phase is not completed satisfactorily. On this issue an applicant is cautioned of the need to review the deficiencies as prescribed in CAR 93.06.4(3). The five phases of certification are comprised of -

(a) the pre-application phase;

(b) the formal application phase;

(c) the documentation review phase;

(d) the demonstration and inspection phase; and

(e) the certification phase.

(3) As part of the certification process an applicant shall complete and submit the following as a minimum -

(a) for corporate aviation operators intending to operate internationally, a statement of compliance (SOC) document, as specified in sub-regulation (6), which is the means by which the operator ensures him or herself and the Executive Director that the company will comply with all applicable regulatory requirements;

Note - *See paragraph (6) for more information on the SOC.*

(b) a number of application forms, depending upon the type of authority being applied for, which are intended to provide evidence of qualification for the specific authorities requested. The number and type of forms required vary with the size, scope and complexity of the proposed operation and are at the discretion of the certification officer; however, all will be made available to the applicant;

(c) copies of all required manuals, as applicable; and

(d) payment of the application fee required by CAR 93.06.3(1) shall be non-refundable unless otherwise approved by the Executive Director.

(4) The applicant must submit to any inquiry or investigation, referred to in CAR 93.06.4(1), as deemed necessary in support of the application and to the certification audit referred to in CAR 93.06.5.

(5) With respect to the SOC, for each applicant -

(a) a SOC is required when applying for international authority;

(b) the SOC shall state that the corporate aviation operator will comply to all parts of the regulations, including technical standards, as applicable to the operation proposed, through reference to the operator's operations manual, maintenance or other required manuals;

(c) the SOC shall be updated by corporate aviation operators to reflect amended regulatory requirements or if amendments to the operations manual result in alternative means of compliance; and

(d) the Executive Director may require the completion of a SOC by any corporate aviation operator at any time deemed necessary in the interest of public safety.

2. Required management positions (CAOC holders only)

(1) A corporate aviation operator shall employ its chief executive officer and person responsible for flight operations on a full-time basis to ensure proper control and supervision of its personnel and operation. An operator may employ on a full-time basis or contract the remaining managers as listed in CAR 93.06.3(5); however, if contracted, they shall devote sufficient time to the operator to ensure they can adequately discharge their duties. The operator shall designate the functions to be fulfilled by each of its managers. Section 3 of this TS states the minimum qualifications and responsibilities of the incumbents. The responsibilities listed in section 3 for the incumbent of any position may be assigned to another position as provided in subsection (3).

(2) The application forms for the required managerial positions will be reviewed to ensure the minimum qualifications are met. The assessment process may involve the use of quizzes or interviews to establish the suitability of each nominee. Where a nominee is known within NCAA, the Executive Director may approve such nominee without the need for further assessment.

(3) A corporate aviation operator may use whatever title deemed necessary for its managers and may assign some of the responsibilities for a given position to another person or persons or the responsibilities of more than one position to one person; however, all the responsibilities noted in section 3 shall be assigned to a nominated manager and such assignment clearly identified in the operations manual. Furthermore, every person assigned any responsibility associated with a required position shall also meet the qualification requirements associated with the responsibilities assigned.

(4) A corporate aviation operator shall develop a method of ensuring that, in the absence of a responsible manager for any reason, all the responsibilities of that manager are assigned to another individual. Such individual shall meet the qualifications required for the responsibilities assigned except that the

knowledge requirements may be demonstrated to the operator rather than the Executive Director. Any assignment issued for a period greater than 30 days must be acceptable to the Executive Director.

3. Approved positions, minimum qualifications and responsibilities (CAOC holders only)

(1) Chief Executive Officer (CEO)

(a) Qualifications

The CEO shall not have had any conviction or administrative sanction under the Act or these Regulations which, in the view of the Executive Director, was sufficiently serious to render such person not fit and proper to exercise the responsibilities of such position.

(b) Responsibilities The CEO shall -

(i) have full authority for all human resources;

(ii) have authority for major financial decisions;

(iii) have direct responsibility for the conduct of the company's affairs; and

(iv) have final responsibility for all safety and security issues.

(2) Person Responsible for Flight Operations (PRFO)

(a) Qualifications

The PRFO shall, as a minimum -

(i) demonstrate adequate knowledge of the operation of the corporate aviation operator's aircraft;

(ii) have acceptable oversight experience in a flight operations department or acceptable alternative experience;

(iii) demonstrate knowledge to the Executive Director of the content of the operations manual, the operator's corporate aviation operating certificate and operations specifications, as well as those provisions of the regulations and technical standards necessary to carry out his or her duties and responsibilities to ensure safety; and

(iv) not have had any conviction or administrative sanction under the Act or these Regulations which, in the view of the Executive Director, was sufficiently serious to render such person not fit and proper to exercise the responsibilities of such position.

(b) Responsibilities

The PRFO is responsible for safe flight operations, in particular -

(i) the control of operations and operational standards of all aircraft operated;

(ii) the identification of operations co-ordination functions which impact on operational control (e.g. maintenance, crew scheduling, load control, equipment scheduling);

(iii) the supervision, organisation, manning and efficiency of the following -

(aa) flight operations;

(bb) cabin safety;

(cc) crew scheduling and rostering; and

(dd) training programmes;

(iv) the timely resolution of safety issues;

(v) the contents of the operations manual;

(vi) the supervision of and the production and amendment of the operations manual;

(vii) liaison with the regulatory authority on all matters concerning flight operations, including any variations to the operator's CAOC;

(viii) liaison with any external agencies which may affect the operator's operations;

(ix) ensuring that the operator's operations are conducted in accordance with current regulations, standards and the operator's policy;

(x) ensuring that crew scheduling complies with flight and duty time regulations and that all crew members are kept informed of any changes to the regulations and standards;

(xi) the receipt and actioning of any aeronautical information affecting the safety of flight;

(xii) the dissemination of aircraft safety information, both internal and external, in conjunction with the safety management system;

(xiii) the qualifications of flight crews;

(xiv) the processing and actioning of any flight crew reports;

(xv) the supervision of flight crews;

(xvi) developing standard operating procedures and/or an aircraft operating manual;

(xvii) developing and/or implementing all required approved training programmes for the operator's flight crews;

(xviii) issuing directives and notices to the flight crews as required;

(xix) the operational suitability and requirements of all aerodromes and routes served;

(xx) ensuring the flight documents required by CAR 93.04.1 are retained for the period specified therein; and

(xxi) the maintenance of a current operations library.

(3) Person Responsible for Aircraft (PRA)

(a) Qualifications

The PRA shall, as a minimum -

(i) have or have held an aircraft maintenance engineer (AME) licence, issued in terms of Part 66,or -

(aa) at least have training and experience that may qualify the individual to obtain an AME licence; or

(bb) hold or have held a pilot licence and ratings appropriate to the aircraft being operated or demonstrate adequate knowledge of the maintenance of such aircraft; or

(cc) hold an engineering degree in aeronautics, electrical, mechanical or avionics or other studies relevant to aircraft maintenance with 5 years' experience in the aviation domain after obtaining that qualification;

(ii) have at least two years' experience in an executive position within aviation, or at least as a Quality Manager within the aviation domain;

(iii) have worked directly with the NCAA for at least one year and have not been the Quality Manager of the assigned maintenance organisation; and

(iv) within the preceding 5 years, have not held a similar position at any different aviation-related organisation where the approval issued by the Executive Director has been suspended or cancelled by the Executive Director or the Minister of Works and Transport of Works and Transport as a result of the organisation failing to comply with the requirements of the Act or the Regulations.

(b) Responsibilities

The PRA is responsible for safe aircraft operations, in particular -

(i) is responsible for all maintenance and inspection personnel and signing of Part D of the operations specifications;

(ii) ensures that company aircraft are maintained in an airworthy condition;

(iii) ensures that all inspections, repairs and component changes are accomplished in accordance with manufacturer's approved procedures;

(iv) ensures compliance with maintenance procedures, airworthiness directives, service bulletins, service letters and the regulations;

(v) ensures all maintenance technicians are trained and current on the types of aircraft for which approved;

(vi) ensures that all maintenance technicians are certified and supervised according to the requirements specified in the regulations;

(vii) the production and amendment of the policy and procedures manual or maintenance control manual, as appropriate;

(viii) co-ordinates with maintenance contracting agencies when maintenance activities are being performed on company aircraft;

(ix) provides the relevant personnel with the current airworthiness status of the aircraft and the forecast down times to facilitate maintenance scheduling and insure timely deferral or correction of aircraft discrepancies;

(x) maintains a close liaison with manufacturer's representatives, parts supply houses, repair facilities and the NCAA;

(xi) makes available to maintenance personnel the necessary overhaul manuals, service bulletins, service letters, airworthiness directives, applicable sections of the MCM/MPM and any other required technical data;

(xii) maintains all necessary work records and logbooks, including certification in the aircraft permanent maintenance records that the aircraft is approved for return to service;

(xiii) maintains the mass and balance records for all aircraft; and

(xiv) completes all required reports and submits them to the PRFO for forwarding to the NCAA.

(4) Air Safety Officer (ASO)

(a) Qualifications

The ASO shall, as a minimum, have -

(i) broad operational knowledge in the functions of the organisation or similar type of organisation;

(ii) completed an approved safety management system (SMS) course in accordance with the syllabus prescribed in Technical Standard 93.10.1;

(iii) at least 2 years of experience closely involved in the management of an aviation safety programme, SMS or quality assurance programme;

(b) Responsibilities

The ASO is responsible for the corporate aviation operator's SMS and in particular -

(i) the establishment and maintenance of a reporting system to ensure the timely collection of information related to potential hazards, incidents and accidents that may adversely affect safety;

(ii) the identification of latent hazards and carry out risk management analyses of those hazards;

(iii) the investigation, analysis and identification of the root cause of all hazards or the contributing factors of incidents and accidents identified under the SMS to ensure the operator has adequate mitigation in place;

(iv) the establishment and maintenance of a safety data system, either by electronic or by other means, to monitor and analyse trends in hazards, incidents and accidents;

(v) the maintenance of a continuous monitoring system that evaluates the results of corrective actions with respect to hazards, incidents and accidents;

(vi) the monitoring of the concerns of the civil aviation industry in respect of safety and their perceived effect on the operator;

(vii) the co-ordination of the organisation's aviation safety programme and all related safety matters;

(viii) co-operation with the training section with regard to safety training of flight, cabin and ground crews, as applicable;

(ix) the supervision of aircraft handling regarding matters related to safety in cooperation with ground support services;

(x) the investigation of all incidents and accidents involving the organisation's aircraft, equipment and property, including fire and emergency procedures, not undertaken in accordance with Part 12;

(xi) the actioning and distribution of accident, incident and other occurrence reports;

(xii) the co-ordination with security personnel to ensure all aspects of security regarding the organisation's aircraft;

(xiii) the development and maintenance of a mandatory occurrence reporting scheme;

(xiv) the establishment of an emergency response plan in the event of an accident, which includes the actions to be followed by relevant personnel;

(xv) in concert with the person responsible for quality, the maintenance of a quality assurance programme within the organisation; and

(xvi) the realisation of other duties which include -

(aa) promulgation of flight safety bulletins to all staff within the organisation;

(bb) conducting meetings with all relevant personnel regarding safety matters;

(cc) maintenance of safety equipment;

(dd) safety audits; and

(ee) occupational health and safety.

(5) Quality Manager (QM)

(a) Qualifications

The QM shall, as a minimum, have -

(i) Grade 12 school level (Matric);

(ii) certificate/s or diploma in quality management; and

(iii) at least five years' experience in implementation and maintenance of QM systems.

(b) Responsibilities

The QM is responsible for ensuring that the corporate aviation operator's quality assurance programme is properly established, implemented and maintained and in particular -

(i) the monitoring of compliance with, and the adequacy of, the procedures required to ensure safe operational practices and airworthy aircraft;

(ii) the monitoring of activity in flight operations, maintenance, crew training and ground operations, to ensure that the standards required by the Executive Director, and any additional requirements defined by the operator, are being met; and

(iii) any additional tasks that may be assigned with respect to the financial and non-operational efficiency aspects of the corporate aviation operation.

93.06.4 APPLICATION, ADJUDICATION OF AND ISSUANCE OF CAOC AND OPERATIONS SPECIFICATIONS

1. Document format and layout

All Namibia certificates (CAOC) and associated operations specifications (OpSpecs) shall be in the form and layout prescribed by Appendix 6, to Annex 6, Part I of the ICAO Annexes.

2. Contents of a certificate

Each CAOC shall contain at least the following information -

(a) the State of the Operator and the issuing authority;

(b) the CAOC number and its expiration or valid to date or other means to indicate its validity;

(c) the operator's name, trading name (if different) and address of the principal place of business;

(d) the date of issue and the name, signature and title of the authority's representative; and

(e) the location, in a controlled document carried on board, where the contact details of operational management can be found.

Note - *For the purposes of establishing a controlled document to provide the information required by sub-paragraph (e) an operator's operations manual is considered as the means of compliance: Provided the information is contained in a part of the operations manual required to be carried on board the operator's aircraft at all times.*

3. Contents of an OpSpec

OpSpecs are issued in different parts and contain the following information as applicable to the Corporate Aviation Operator being granted by the OpSpec -

(a) telephone number;

(b) CAOC number;

(c) business name of the operator including "doing business as" (dba), where applicable;

(d) date of issue of the OpSpec;

(e) aircraft makes, types and models to which the specification applies;

(f) areas and types of operations approved; and

(g) special limitations, authorisations and approvals.

Note - *For more information with respect to the certificate or associated OpSpecs an operator/applicant should contact the Certification Division of the Namibia Civil Aviation Authority.*

93.06.5 SAFETY INSPECTIONS AND AUDITS

1. Classifications of findings or non-compliance

1.1. Level 1 Finding

A level 1 non-compliance or finding poses imminent danger, safety and security risk to persons in an aircraft or to persons or to property on the ground and shall necessitate the exercising of immediate discretionary enforcement powers vested in the inspectors, authorised officers and authorised persons in the interest of safeguarding aviation safety and security in line with the Civil Aviation Act, 2016. A level 1 finding is in all instances a safety concern and shall require remedial action acceptable to the Executive Director within 24 hours by an approval holder.

1.2. Level 2 Finding

A level 2 non-compliance or finding poses a serious safety and security risk to persons in an aircraft or to persons or to property on the ground and shall be resolved within a short timeframe. It shall be required of an approval holder to develop action plans within agreed timeframes and follow-up inspections or

audits to verify rectification of the non-compliances. A response containing a corrective action plan shall be acceptable to the Executive Director within 7 days.

Note: *Previous findings, which have not been addressed (repetitive or continuous non-compliance findings or blatant disregard for the Authority findings), may be upgraded to a Level 2 or Level 1 finding.*

Note: *A level 2 or level 1 non-compliance on one part of the operation may not necessarily affect the whole operation.*

1.3. Level 3 Finding

A non-compliance / finding which shall not necessarily have an immediate direct impact on safety or security on its own. It is the responsibility of an approval holder to rectify and shall not necessitate a follow-up inspection. An approval holder is required to notify the Authority within a specified timeframe, when rectification has been effected. These findings are normally administrative in nature. Generally, a response containing corrective actions shall be received within 14 working days.

1.4. Observation

A practice or condition that indicates a trend that may lead to a future non-compliance, it is highly recommended that an operator shall respond to the observation.

93.06.9 OPERATIONAL DEMONSTRATION

(1) At least one successful demonstration of operations in dispatching a flight shall be accomplished by the operator seeking a Corporate Aviation Operator Certificate (CAOC), prior to conducting corporate aviation operations; and

(2) The demonstration for an applicant seeking a CAOC shall be accomplished under the conditions as specified by the Executive Director.

(3) A demonstration may be required in the event a new aircraft type is added to an existing CAOC or if the Executive Director deems it necessary to complete a demonstration.

Notes -

1. *Normally, the demonstration will be accomplished using the most complex type of aircraft having the greatest maximum certificated mass to be operated unless the Executive Director determines that, due to the size and complexity of the proposed operations, additional demonstrations are required using other aircraft types.*
2. *For the purposes of this TS, the complexity of the aircraft is based on its method of propulsion, with the first named aircraft being the least complex -*
   (a) reciprocating engine aeroplanes and helicopters;
   (b) turbo-propeller aeroplanes; and
   (c) turbojet or turbofan aeroplanes.

93.07.1 ROUTES AND AREAS OF OPERATION AND AERODROME FACILITIES FOR AEROPLANES

1. Destination alternate aerodrome planning minima

(1) Except as provided in subsection (2), the PIC shall meet the applicable planning minima specified in the following table in order to select an aerodrome as a destination alternate, when required -

Approach and landing	Ceiling	Visibility conditions provisions
Aerodromes supporting instrument approach and landing operations, but not supporting straight-in approach and landing operations to at least two runway ends.	Applicable aerodrome operating minima plus an increment of 400ft	Applicable aerodrome operating minima plus an increment of 1 500m
Aerodromes supporting straight-in approach operation suitable runway supporting an instrument and landing to different runways.	Applicable aerodrome operating minima plus an increment of 200ft	Applicable aerodrome operating minima plus an increment of 800m
Aerodromes supporting a minimum of two instrument approach and landing operations to different suitable runways, at least one shall be CAT II or III.	For CAT II operations at least 300ft For CAT III operations at least 200ft	For CAT II operations, a prevailing visibility corresponding to at least an RVR of 1 200m For CAT III operations, a prevailing visibility corresponding to at least an RVR of 550m

Note - *The term "different suitable runways" may denote either two or more separate runways or a single runway with a straight-in instrument approach and landing procedure to each end of the runway.*

(2) The criteria specified in subsection (1) need not be complied with: Provided alternative selection criteria are submitted by the operator that are developed as a result of a safety risk assessment, based on the operator's SMS programme, which provide a level of safety equivalent to that in subsection (1) and are approved by the Executive Director.

2. Extended range twin-engine operations

2.1. Application

(1) Applications to the Executive Director for an operations specification (OpSpec) to operate flights in terms of the ETOPS provisions shall be made in a manner acceptable to the Executive Director and that meet the requirements of this TS.

(2) Only turbine-powered aeroplanes shall be considered for approval to conduct ETOPS flights.

2.2. Aerodrome criteria

(1) Adequate aerodrome

An adequate aerodrome is an aerodrome which the operator considers to be satisfactory, taking into account landing performance requirements at the expected landing weight and runway characteristics. In addition, it should be anticipated that, at the expected time of use, the aerodrome will be available and equipped with necessary ancillary services, such as ATS, sufficient lighting, communications, weather reporting, navaids and emergency services.

(2) ETOPS en route alternate airport

(a) An ETOPS en route alternate airport means an adequate airport that is listed in the corporate aviation operator's company operations manual and meets the planning minima specified in section 3.3.

(b) For all operations under this Part, the PIC shall comply with the planning minima specified in section 3.3.

2.3. Planning minima for an ETOPS en route alternate

To be suitable to be listed in the flight plan as an ETOPS en route alternate aerodrome, the following additional criteria must be met-

(a) the availability of an ATC facility;

(b) the availability of at least one let-down aid for an instrument approach; and

(c) the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing one hour before and ending 1 hour after the expected time of arrival at the aerodrome, crosswind landing limits will not be exceeded and the weather conditions will be at or above the planning minima prescribed in the table below, and in accordance with the operator's ETOPS approval.

Planning minima - ETOPS

Type of approach	**Planning minima**		
	At least 2 separate approach procedures based on 2 separate aids serving 2 separate runways	**At least 2 separate approach procedures based on 2 separate aids serving 1 runway**	**At least 1 approach procedure based on 1 aid serving 1 runway**
Precision approach CAT II, III (ILS MLS)		Precision approach CAT I minima	Non-precision approach minima
Precision approach CAT I (ILS MLS)		Non-precision approach minima	Circling minima or, if not available non-precision approach minima plus 200ft/1 000m
Non-precision approach		The lower of non-precision approach minima plus 200ft / 1 000m or circling	The higher of circling minima or non-precision approach minima plus 200ft / 1 000m

Notes -

1. *"Tempo" and "Inter" conditions published in the forecast are not limiting unless these conditions are forecast to be below published planning minima. Where a condition is forecast as "Prob", provided the probability per cent factor is less than 40%, it is not limiting. However the PIC will be expected to exercise good aviation judgment in assessing the overall "Prob" conditions.*

2. *Runways on the same aerodrome are considered to be separate runways when -*

   (a) they are separate landing surfaces which may overlay or cross such that if one of the runways is blocked, it will not prevent the planned type of operations on the other runway; and

   (b) each of the landing surfaces has a separate approach procedure based on a separate aid.

3. *Only operators approved for Category II or III operations may use the planning minima applicable to Categories II and III in the table and then only if the aeroplane is certificated for a one engine inoperative Category II or III approach, as applicable.*

4. *The JAA Information Leaflet No. 20, IL20, may also be used by an operator to conduct an ETOPS operation, together with the ETOPS en route alternate weather criteria determined in this technical standard.*

93.07.2 ROUTES AND AREAS OF OPERATION AND AERODROME FACILITIES FOR HELICOPTERS

1. Destination alternate aerodrome planning minima

(1) Except as provided in subsection (2), the PIC shall meet the applicable planning minima specified in the following table in order to select an aerodrome as a destination alternate, when required -

Approach and landing	Ceiling	Visibility conditions provisions
Aerodromes supporting instrument approach and landing operations, but not supporting straight-in approach and landing operations to at least two runway ends.	Applicable aerodrome operating minima plus an increment of 400ft	Applicable aerodrome operating minima plus an increment of 1 500m
Aerodromes supporting a straight-in instrument approach and landing operation to different suitable runways.	Applicable aerodrome operating minima plus an increment of 200ft	Applicable aerodrome operating minima plus an increment of 800m
Aerodromes supporting a minimum of two instrument approach and landing operations to different suitable runways, at least one shall be CAT II or III.	For CAT II operations at least 300ft For CAT III operations at least 200ft	For CAT II operations, a prevailing visibility corresponding to at least an RVR of 1 200m For CAT III operations, a prevailing visibility corresponding to at least an RVR of 550m

Note - *The term "different suitable runways" may denote either two or more separate runways or a single runway with a straight-in instrument approach and landing procedure to each end of the runway.*

(2) The criteria specified in subsection (1) need not be complied with: Provided alternative selection criteria are submitted by the operator that are developed as a result of a safety risk assessment, based on the operator's SMS programme, which provide a level of safety equivalent to that in subsection (1) and are approved by the Executive Director.

2. Use of offshore alternates

The following are the requirements associated with using offshore alternates:

(a) the offshore alternates shall be used only after a point of no return (PNR). Prior to a PNR, onshore alternates shall be used;

(b) mechanical reliability of critical control systems and critical components shall be considered and taken into account when determining the suitability of the alternates;

(c) one-engine inoperative performance capability shall be attainable prior to arrival at the alternate;

(d) to the extent possible, deck availability shall be guaranteed; and

(e) weather information must be reliable and accurate.

Planning minima - ETOPS

Type of approach	Planning minima (ceiling and RVR/visibility required, if applicable) Aerodrome with		
	at least 2 separate approach procedures based on 2 separate aids serving 2 separate runways	at least 2 separate approach procedures based on 2 separate aids serving 1 runway	at least 1 approach procedure based on 1 aid serving 1 runway
Precision approach CAT II, III (ILS MLS)	Precision approach Cat I minima	Non-precision approach minima	
Precision approach CAT I (ILS MLS)	Non-precision approach minima	Circling minima or, if not available, non-precision approach minima plus 200ft/1 000m	

Non-precision approach	The lower of non-precision approach minima plus 200ft / 1 000m or circling	The higher of circling minima or non-precision approach minima plus 200ft/1 000m

Notes -

1. *"Tempo" and "Inter" conditions published in the forecast are not limiting unless these conditions are forecast to be below published planning minima. Where a condition is forecast as "Prob", provided the probability per cent factor is less than 40%, it is not limiting. However the PIC will be expected to exercise good aviation judgment in assessing the overall "Prob" conditions.*

2. *Runways on the same aerodrome are considered to be separate runways when -*

   (a) they are separate landing surfaces which may overlay or cross such that if one of the runways is blocked, it will not prevent the planned type of operations on the other runway; and

   (b) each of the landing surfaces has a separate approach procedure based on a separate aid.

3. *Only operators approved for Category II or III operations may use the planning minima applicable to Categories II and III in the table and then only if the aeroplane is certificated for a one engine inoperative Category II or III approach, as applicable.*

4. *The JAA Information Leaflet No. 20, IL20, may also be used by an operator to conduct an ETOPS operation, together with the ETOPS en route alternate weather criteria determined in this technical standard.*

93.07.7 IFR OR NIGHT FLIGHT WITHOUT A SECOND-IN-COMMAND

1. General

This technical standard states the provision for the operation of an aircraft with passengers on board in IMC or at night without a second-in-command.

Note - *The term "single-pilot IFR" will be used to denote a pilot authorised to fly in IMC or at night without a second-in-command.*

2. Aircraft/equipment requirements

In addition to the equipment required by Subpart 5 of CAR Part 93, an aircraft involved in a single-pilot operation in IMC or at night shall be equipped with -

(a) an autopilot that is capable of operating the aircraft controls to maintain flight and manoeuvre the aircraft about the lateral and longitudinal axes;

(b) a headset with a boom microphone or equivalent and a transmit button on the control column (cyclic or collective stick); and

(c) a chart holder that is placed in an easily readable position and a means of illumination for the chart holder.

3. Pilot qualification, training and proficiency requirements

Aeroplane:

(1) The pilot shall have the following experience -

(a) for operations under IFR or at night, have accumulated at least 50 hours flight time on the class of aeroplane, of which at least 10 hours shall be as PIC;

(b) for operations under IFR, have accumulated at least 25 hours flight time under IFR on the class of aeroplane, which may form part of the 50 hours flight time in sub-paragraph (a); and

(c) for operations at night, have accumulated at least 15 hours flight time at night, which may form part of the 50 hours flight time in paragraph (a).

Notes -

1. Only a FSTD that is representative of the helicopter to be flown, including navigation systems and flight deck layout, shall be approved for use.

2. Training shall include use of the autopilot with and without the introduction of abnormal and emergency conditions.

3. Any engine-out training done in the helicopter must be simulated.

4. Single engine helicopters are not subject to the engine-out training requirements.

(2) A pilot shall complete the training requirements specified in section 3.10 and 3.11 of technical standard 93.03.3 and a single-pilot pilot proficiency check (PPC) prior to being assigned to single-pilot duties.

(3) The PPC shall be in the aircraft type or variant flown unless the operator has been approved for aircraft grouping for training and PPC purposes, in which case the sequencing of the PPCs shall be as provided in such approval and shall be conducted so as to include at least the following -

(a) knowledge of the regulatory and company operating procedures relating to single-pilot IMC or night flight;

(b) knowledge of the autopilot operations and limitations;

(c) performance of normal and emergency procedures as a single pilot without assistance;

(d) passenger briefings as required by this Subpart including emergency briefings and cabin preparation for emergency evacuation; and

(e) demonstration of the use of the autopilot during appropriate phases of flight.

(4) Where a pilot successfully completes a single-pilot IFR proficiency check, as specified in subsection (3) the pilot's licence or other document provided for that purpose shall be endorsed for single-pilot IFR.

Helicopters:

(1) An operator may not conduct single-pilot IMC or night flight operations unless the PIC, within the preceding 90 days, has completed the following single-pilot training in the helicopter, a FSTD or a combination of helicopter and FSTD:

(a) if flight in IMC is to be undertaken:

(i) at least two instrument departures, under simulated or actual IMC which shall include at least one simulated engine failure after take-off in a simulator or under simulated IMC;

(ii) a minimum of five approaches consisting of at least two precision or non-precision approaches;

(iii) in a multi-engine helicopter:

(aa) at least one missed approach during which an engine failure is introduced;

(bb) at least one engine-out approach; and

(cc) at least three landings from approaches, one of which shall be with an engine out; and

(b) if night flight is to be undertaken, five take-offs and landings at night.

4. Special conditions and procedures

(1) All flights operated in IFR flight shall be restricted to the following altitudes/ flight levels -

(a) in case of pressurised aeroplanes all flights shall be conducted at or below FL250 unless the aeroplane manufacturer has established the conditions under which flight above such altitude may be undertaken without a second-in-command with respect to access to an emergency source of oxygen in the event an emergency descent is required and the pilot has trained for such an event at or near the highest altitude authorised for that aeroplane; and

(b) in the case of unpressurised aeroplanes and all helicopters, all flights shall be conducted at or below the altitude at which the pilot is not required by these regulations to be using continuous oxygen.

(2) A pilot's single-pilot IFR proficiency may be transferred to another operator: Provided -

(a) the proficiency validity has not yet expired;

(b) the aircraft to be operated are of the same type and variant on which the current PPC was conducted;

(c) the pilot has received training to ensure the pilot is familiar and competent in all procedures used by the other operator; and

(d) the other operator is authorised in its operations specification to transport persons in aircraft in IMC without a second-in-command.

93.07.9 REFUELLING AND DEFUELLING WITH PASSENGERS ON BOARD

Aircraft may be fuelled with passengers embarking, disembarking or on board under the following conditions -

(a) in order to ensure that crew members receive prompt notification of a situation threatening safety such as major fuel spill or a fire, a means is established for the ground crew supervising the fuelling to alert the qualified personnel on board the aircraft that the passengers must disembark or be evacuated as necessary;

(b) the aircraft engines are not running unless the aircraft incorporates a propeller brake and the brake is set;

(c) during the fuelling process -

(i) aircraft ground power generators or other electrical ground power supplies are not being connected or disconnected;

(ii) combustion heaters installed on the aircraft (e.g. wing and tail surface heaters, integral cabin heaters) are not operated;

(iii) known high energy equipment such as High Frequency (HF) radios are not operated, unless in accordance with the aircraft manufacturer's approved flight manual where the manual contains procedures for the use of this equipment during fuelling;

(iv) weather-mapping radar equipment in the aircraft is not operated unless in accordance with the manufacturer's approved aircraft flight manual where the manual contains procedures for use during fuelling;

(v) aircraft batteries are not being removed or installed;

(vi) external battery chargers are not being connected, operated or disconnected;

(vii) aeroplane-borne or helicopter-borne APUs which have an efflux discharging into the zone are not started after filler caps are removed or fuelling connections are made;

(viii) if an auxiliary power unit is stopped for any reason during fuelling it shall not be restarted until the flow of fuel has ceased and there is no risk of igniting fuel vapours; however, the APU may be operated in accordance with the manufacturer's approved aircraft flight manual if the manual contains procedures for starting the APU during fuelling;

(ix) electric tools or similar tools likely to produce sparks or arcs are not being used; and

(x) photographic equipment is not used within 3m of the fuelling equipment or the fill or vent points of the aircraft fuel systems;

(d) fuelling is immediately suspended when there are lightning discharges within 8km of the aerodrome;

(e) the aircraft is fuelled in accordance with manufacturer's procedures for that type of aircraft;

(f) the aircraft emergency lighting system is armed or on, if applicable;

(g) "No Smoking" signs on board the aircraft are illuminated, if installed;

(h) procedures are established to ensure that passengers do not smoke, operate portable electronic devices or otherwise produce sources of ignition;

(i) at least the entry door through which the passengers embarked is designated as the evacuation exit during fuelling and is open;

(j) the designated evacuation exits during fuelling are identified by aircraft type and published in the corporate aviation operator's operations manual.

(k) The designated exits must be clear and available for immediate use by passengers and crew members should an evacuation be required. The designated evacuation exits shall be clearly specified during the passenger briefing.

(l) the operator or PIC has procedures in place to ensure that there is a ready escape route from each designated evacuation exit during fuelling;

(m) a member of the flight crew or a person designated by the operator who has received training in fuelling operations with passengers on board shall be in attendance and identified to the passengers as the person responsible for cabin safety during the fuelling procedures; and

(n) the emergency exit available for use in the event of an evacuation shall be opposite to where the refuelling or defueling is taking place.

93.07.13 OPERATIONAL CONTROL AND SUPERVISION OF FLIGHT OPERATIONS

1. Operational control and supervision

(1) A Corporate Aviation Operator shall exercise operational control over its flights through its operational control system.

(2) The person responsible for flight operations shall have the ultimate decision-making authority in all matters affecting flight operations in general, and the OCS in particular, after consideration of any other factors that could impact on the execution of a flight such as financial, corporate requirements or other non-operational considerations.

(3) The operator is responsible for putting in place communication equipment and facilities as appropriate to the operator's flight following system and ensuring such equipment is serviceable during the period of time any company flight is in progress.

(4) The pilot-in-command is responsible for the release of each flight and has the final authority as to the continuation, diversion or termination of a flight.

(5) The CAO shall specify flight planning procedures, including the duties of the PIC regarding flight preparation as prescribed in CAR 91.02.7, to provide for the safe conduct of the flight based on considerations of aircraft performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

2. Definitions

"flight follower" means the person assigned the responsibility for flight following and such other duties as may be assigned;

"flight following" means the monitoring of a flight's progress, the provision of such operational information as may be requested by the PIC and the notification to appropriate operator and search-and-rescue authorities if the flight is overdue or missing. Meteorological information provided to the PIC by a flight follower shall not include analysis or interpretation by the flight follower unless such flight follower is a certified flight operations officer;

"flight release" means the agreement by the PIC, as witnessed by his or her signature, that the flight has been planned and is being released for flight in accordance with the provisions of the operations manual;

"flight monitoring" means monitoring all factors and conditions that might affect the operational flight plan (OFP) and which may be the responsibility of the PIC or other person assigned by the person responsible for flight operations;

"pilot self-dispatch" means a flight where the PIC has been given authority from the operations manager to exercise operational control over such flights.

3. Approval of an operational control system

(1) Each Corporate Aviation Operator shall publish in its operations manual the details of its proposed OCS including pre- and post- flight procedures, flight following or flight monitoring, as applicable, and procedures to be followed in the event of missing or overdue flights and during emergency or abnormal situations. Upon approval of the operations manual, the OCS shall be deemed to have been approved by the Executive Director.

(2) A Corporate Aviation Operator choosing, in order to meet its own operational needs, to dispatch its flights under an OCS that utilises a flight operations officer (FOO) for flight release and flight monitoring shall meet the requirements of a Type A operational control system as specified in technical standard 121.07.13 of Document NAM-CATS 121.

(3) The Executive Director may require an operator to upgrade its OCS in order to satisfy the conditions for issue of certain operations specifications (OpSpecs).

4. Description of the required operational control system

The minimum requirements of an OCS under this Part are as follows -

(a) Responsibility and authority

Operational control is delegated to the PIC of a flight by the operations manager who retains responsibility for the day-to-day conduct of flight operations.

(b) Centres

Current information on the location of the operator's aircraft shall be maintained at the main base of operations or, where appropriate, at a sub-base of operations. The corporate's head office may serve as the main base or sub-base of operations.

(c) Communications

The operator shall ensure that the flight crew has a means to communicate with the operator while on the ground.

(d) Personnel on duty

(i) An operator shall ensure personnel qualified in accordance with CAR 93.02.7 are available during flight time as applicable to the OCS approved for use by the company.

(ii) The operator shall clearly identify in its operations manual the duties and responsibilities of the persons responsible for flight following.

(iii) The operator shall ensure that each flight follower is trained in accordance with the requirements of its approved training programme.

(e) Flight release

(i) Flights operated under the operator's OCS are pilot self-dispatched and released in accordance with the operator's established procedures. Such procedures shall be published in the operator's operations manual.

(ii) The person responsible for the development of the operational flight plan (OFP), shall receive training in every aspect of its preparation. The OFP shall meet the requirements of technical standard 93.04.4 and may be in any format at the operator's discretion but such format shall be standard and used by all flight crew.

(iii) The signature or alternative means of signifying acceptance of the OFP by the PIC shall constitute a flight release and shall certify that -

(aa) the OFP has been prepared and accepted in accordance with the procedures specified in the operations manual; and

(bb) the flight is safe to proceed.

(f) Flight monitoring and flight following

(i) A Corporate Aviation Operator shall ensure that procedures are established as part of the OCS to enable it to determine if a flight is overdue or has had to divert.

(ii) Where communications facilities permit, the PIC is expected to report departures and arrivals to the person assigned to the flight following of that flight. At the very least the PIC shall notify the operator upon arrival at the final destination of a particular flight or series of flights.

(iii) The PIC, though solely responsible for flight monitoring, shall be supported by a flight following system containing the following elements -

(aa) a flight follower, qualified in accordance with Subpart 3 of CAR Part 93 and knowledgeable in the operator's flight alerting procedures, on duty and able to respond to requests by the PIC for information related to the flight. Such information may include meteorological information without analysis or interpretation; and

(bb) the ability by the operator to have a means to follow the progress of each flight from its commencement to its termination, including any intermediate stops or diversions from the flight planned route.

Note - *Use of air traffic services in determining the location of a flight is adequate.*

5. Declaration and action in an emergency

(1) In an emergency situation that requires immediate decision and action, the PIC shall take any action he or she deems necessary for the safety of the aircraft and passengers.

(2) Where the assigned flight follower or operations manager becomes aware of any emergency situation that could pose a hazard to a flight in progress, he or she shall make every effort to advise the PIC of such emergency by the quickest means available. Furthermore, he or she shall -

(a) remain available to the PIC of that flight on a continuous basis until -

(i) the threat of such emergency has passed;

(ii) the PIC has made a decision and acted upon it and it has been determined that the operator's assistance is no longer required; or

(iii) the flight is handed off to another competent person who is able to be of assistance;

(b) relay required messages through third parties as necessary to communicate with the flight; and

(c) notify the nearest air traffic services unit and appropriate authority of the emergency and request such assistance as may be necessary.

(3) In the event an aircraft becomes overdue or missing, the overdue or missing aircraft procedures, as appropriate, shall be followed as prescribed in the operations manual. Such procedures shall include, as a minimum, reporting the overdue or missing aircraft to an air traffic services unit, the appropriate authority and search and rescue authorities.

(4) Whenever a PIC, flight follower or operations manager declares an emergency, he or she shall keep the appropriate ATC facility and dispatch centres fully informed as to the progress of the flight.

6. Flight tracking

(1) A CAO shall track the position of an aircraft through automated reporting at least every 15 minutes for the portion of the in-flight operation that is planned in an oceanic area -

(a) if, in the case of an aeroplane, the aeroplane has a maximum certificated take-off weight of over 45 500 kg or a seating capacity greater than 19; or

(b) if, in the case of a helicopter, the helicopter has a maximum certificated take-off weight of over 7000 kg and a seating capacity greater than 19; and

(c) where an ATS unit obtains aeroplane or helicopter position information at greater than 15 minute intervals.

(2) A CAO shall establish procedures, approved by the Executive Director, for the retention of aircraft tracking data to assist search and rescue in determining the last known position of an aeroplane or helicopter.

(3)

(a) An aeroplane of a maximum certificated take-off weight of over 5700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021, shall autonomously transmit information from which a position can be determined at least once every minute, when in distress.

(b) A helicopter of a maximum certificated take-off weight of over 3175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021, shall autonomously transmit information from which a position can be determined at least once every minute, when in distress.

(4) A CAO shall make position information of a flight in distress available to the appropriate organizations, as established by the Executive Director.

93.07.21 INERTIAL NAVIGATION AND INERTIAL REFERENCE SYSTEMS

1. General

Inertial navigation may be authorised in a Corporate Aviation Operations specifications (OpSpecs) or for aircraft operated in terms of CAR 93.01.1 (a) or (b). For the holders of an OpSpec, inertial navigation may be used to satisfy the requirements for navigation in airspace where minimum navigation performance specifications apply. The inertial navigation system (INS) or inertial reference system (IRS) and its installation must be certified by the Executive Director as meeting the airworthiness standards prescribed in Part 21.

Notes -

1. Airworthiness requirements will be satisfied provided that -

(a) the equipment has been installed to the manufacturer's requirements;

(b) the installation is listed in the aircraft type certificate or has a supplemental type certificate for the specific aircraft type;

(c) there is a flight manual supplement covering any system limitations; and

(d) the system is included in the operator's maintenance programme.

2. Outside Namibia (for example, in Europe and over the North Atlantic) other State authorities might require navigation performance different to that required by these standards.

2. Minimum performance for operational approval

(1) An INS/IRS shall meet the following criteria for operational approval and shall be maintained to ensure performance in accordance with the criteria -

(a) with a 95% probability the radial error rate is not to exceed 2nm per hour for flights up to 10 hours duration (Helicopter: 1nm per hour for flights up to 5 hours duration); and

(b) with a 95% probability the cross-track error is not to exceed ±20nm and along track error is not to exceed ±25nm at the conclusion of a flight in excess of 10 hours (Helicopter: ±10nm and along track error is not to exceed ±12.5nm at the conclusion of a flight in excess of 5 hours).

(2) The INS/IRS should have the capability for coupling to the aircraft's autopilot to provide steering guidance.

(3) The navigation system should have the capability for updating the displayed present position.

3. Serviceability requirements

(1) An INS/IRS may be considered as serviceable for navigation purposes until such time as its radial error exceeds 3 + 3t nm (t being the hours of operation in the navigation mode).

(2) Maintenance corrective action must also be taken when an INS/IRS is consistently providing radial error rates in excess of 2nm per hour and/or track and along track errors in excess of the tolerance given at sub-section (1) on more than 5% of the sectors flown.

4. System performance monitoring

The operator is to monitor and record the performance of INS/IRS and may be required to provide details of the system accuracies and reliabilities from time to time.

5. Navigation criteria

Navigation using INS/IRS as the primary navigation means is permitted in accordance with the following conditions -

(a) initial confidence check. The INS/IRS must be checked for reasonable navigation accuracy by comparison with ground- referenced radio navigation aids (which may include ATC radar) before proceeding outside the coverage of the short-range radio navigation aids system;

(b) maximum time -

(i) single INS/IRS -

(aa) the maximum operating time since the last ground alignment is not to exceed 10 hours (helicopter: 5 hours);

(bb) Aeroplane only: on flights of more than 5 hours, any route sector may be planned for navigation by INS/IRS within the appropriate time limits (given in (cc) below) but contingency navigation procedures must be available in the event of an INS/IRS inflight unserviceability which would preclude the aircraft's operation on a subsequent route sector for which area navigation is specified; and

(cc) INS/IRS may be used as a sole source of tracking information for continuous period not exceeding -

(A) Three hours in controlled airspace other than oceanic control area (OCA); or

(B) Five hours in OCA or outside controlled airspace (OCTA);

(ii) two or more INS/IRS -

(aa) if, during a flight, 10 hours (helicopter: 5 hours) elapsed time since the last ground alignment will be exceeded, ground alignment is to be included in the pre-flight flight deck procedures prior to departure; and

(bb) INS/IRS may be used as the sole source of tracking information for continuous periods not exceeding -

(A) Five hours in controlled airspace other than OCA; or

(B) Aeroplane only: 12 hours in OCA or OCTA;

Notes -

1. *Provided that the use of INS/IRS as the sole means of navigation does not exceed the time limit, the aircraft may be operated for longer periods using the INS/IRS with either manual or automatic updating.*

2. *The 5 hour limit on single INS/IRS ensures 99.74% (3 sigma) probability that loss of satisfactory navigation capability will not occur with equipment mean time between failures (MTBF) of approximately 1900 hours. If the demonstrated MTBF exceeds 2000 hours, the maximum time may be increased.*

(c) updating inertial present position in flight is permitted in the following instances only -

(i) manually -

(aa) overhead a VOR beacon;

(bb) within 25nm of a co-located VOR/DME beacon; or

(cc) over a visual fix when at a height not more than 5 000ft above the feature;

(ii) automatically (aeroplane only) -

(aa) within 200 nautical miles of a DME site when the aircraft's track will pass within 140nm of the site;

(bb) within 200nm of both DME sites for a DME/DME Fix;

(cc) from a co-located VOR/DME beacon provided that updates from a receding beacon are not accepted when the beacon is more than 25nm from the aircraft;

Notes -

1. *En route VOR and DME sites separated by not more than 500 metres are considered to be co-located.*

2. *DME slant range error correction might be necessary in some circumstances.*

3. *Updating a present position from a visual fix may not be planned for IFR flights.*

4. *A receding beacon is one from which the distance to the aircraft is increasing.*

5. *Updating in other circumstances (for example, over a NDB) will not provide sufficient accuracy to ensure that the INS/IRS operates within the prescribed tolerances for navigation.*

6. *Because INS/IRS are essentially accurate and reliable, and ground alignment is more accurate than in-flight updating, updating of present position is usually not warranted especially during the initial few hours of operation. However, INS/IRS errors generally increase with time and are not self-correcting. Unless the error is fairly significant (for example, more than 4nm/hr along track or 2nm/hr cross track) it may be preferable to retain the error rather than manually update.*

(d) Limitation on use. Wherever track guidance is provided by radio navigation aids, the PIC must ensure that the aircraft remains within the appropriate track-keeping tolerances of the radio navigation aids. INS/IRS is not to be used as a primary navigation reference during IFR flight below lowest safe altitude (LSALT); and

(e) Pre-flight and en route procedures. The following practices are required -

(i) new data entries are to be cross-checked between at least two flight crew members for accuracy and reasonableness, or, for single-pilot operations, an independent check (for example, of INS/ IRS-computed tracks and distances against the flight plan) must be made;

(ii) as a minimum, position and tracking information is to be checked for reasonableness (confidence check) in the following cases -

(aa) prior to each compulsory reporting point;

(bb) at or prior to arrival at each en route way point during RNAV operation along RNAV routes;

(cc) at hourly intervals during area type operation of established RNAV routes; and

(dd) after insertion of new data.

6. Operating criteria

(1) For two or more INS/IRS installations -

(a) if one INS/IRS fails or can be determined to have exceeded a radial error of 3+3t nm, operations may continue on area navigation routes using the serviceable system(s) in accordance with the navigation criteria applicable to the number of INS/IRS units remaining serviceable;

(b) if -

(i) the difference of pure inertial readouts between each pair of INS/IRS is less than 1.4 (3+3t) nm, no action is required;

(ii) the difference of pure inertial readouts between any pair of INS/IRS exceeds 1.4 (3+3t) nm and it is possible to confirm that one INS/IRS has an excessive drift error, that system should be disregarded and/or isolated from the other systems) and the apparently serviceable system(s) should be used for navigation; and

Note - *This check and its isolation action are unnecessary if a multiple INS/IRS installation is protected by a serviceability self-test algorithm.*

(iii) if neither condition prescribed in subparagraph (i) or (ii) can be satisfied, another means of navigation should be used, and the PIC must advise the appropriate ATS unit.

(2) For single INS/IRS installations, if the INS/IRS fails or exceeds the serviceability tolerance -

(a) the PIC must advise the appropriate ATS unit of INS/IRS failure;

(b) another means of navigation is to be used; and

(c) the aircraft is not to begin a route sector for which area navigation is specified unless it is equipped with an alternative, serviceable, approved area navigation system.

(3) Autopilot coupling to the INS/IRS should be used, whenever practicable, if this feature is available. If for any reason the aircraft is flown without autopilot coupling, the aircraft is to be flown within an indicated cross-track tolerance of ±2nm. In controlled airspace the ATS unit is to be advised if this tolerance is exceeded.

7. Navigation tolerances

(1) The maximum drift rate expected from INS/IRS is 2nm per hour (2 sigma probability). For the purposes of navigation and determining aircraft separation, the 3 sigma figure of 3nm is allowed so that the maximum

radial error with 3 sigma confidence equals 3+3t nm, where t equals the time in hours since the INS/IRS was switched into the navigation mode.

(2) DME and other inputs can automatically influence the INS/IRS to improve the accuracy of its computed position. The pilot may also insert known position coordinates to update the INS/IRS. Therefore, if the system is updated with known position information the position error is reduced and the INS/IRS can be assumed to operate within the radial error tolerance of 3+3T nm where T is the time (hours elapsed since the last position update).

(3) The accuracy of the data used for updating must be considered. The navigation aid positions used for updating inertial present position are accurate to within 0.1nm. However, the aircraft in flight cannot be "fixed" to the same order of magnitude. The accuracy of the position fix is taken as ±3nm radial error.

(4) Because the INS/IRS error, the navigation aid position accuracy and the position fix errors are independent of each other, the total radial error is determined by the root-sum-square method -

Total error = $\sqrt{(3+3T)^2 + 0{,}1^2 + 3^2\ \text{nm}}$

(5) The effect of navigation aid position accuracy on the total error is negligible, and so,

Total error = $\sqrt{(3+3T)^2 + 3^2\ \text{nm}}$

= $\sqrt{(1+T)^2 + 1\ \text{nm}}$

Substituting values for T at time of update, total radial error

= 4,2nm after 1 hour

= 6,7nm after 2 hours

= 9,5nm after 3 hours

= 12,4nm after 4 hours

= 15,3nm after 5 hours

= 18,2nm after 6 hours

= 21,2nm after 7 hours

(6) If two INS/IRS are installed and the aircraft is navigated by averaging, the inertial present position formula for the total radial error given in sub-paragraph (4) is modified by multiplying by

$$\frac{1}{\sqrt{2}} = (= 0{,}7)$$

(7) If three INS/IRS are installed and "triple mix" is used, the total radial error is further reduced. For simplicity for navigation and aircraft separation, the tolerances applicable to dual installations apply and the third system provides redundancy.

93.07.22 LOW-VISIBILITY OPERATIONS

1. Low-visibility operations - certification overview

(1) Low-visibility operations (LVO) are comprised of lower-than-normal visibility minima take-off (LVTO) and lower-than-normal weather and visibility minima approach operations (CAT II/III approaches). An applicant for a operations specification (OpSpec) authorising low visibility operations shall meet the certification criteria contained in this TS.

(2) A Corporate Aviation Operator shall only conduct LVO if -

(a) the operator has the appropriate OpSpecs and its aircraft are certificated for LVO and are equipped in accordance with this Part or an equivalent regulation accepted by the Executive Director;

(b) the operator has an approved training programme and the flight crews and supporting crews, as applicable, are trained and tested in LVO;

(c) the operator has established procedures to ensure LVO are conducted to the highest possible level of safety;

(d) a suitable system for recording approach or automatic-landing success and failure is established and maintained to monitor the overall safety of the operation;

(e) the ground-based equipment meets the LVO criteria for safe operation; and

(f) the low visibility operational zone is maintained in a sterile condition during LVO.

Note - *Failure to meet any of the above criteria or the certification standards described herein is cause for LVO OpSpecs to be suspended.*

(3) The available approvals for LVTO operations are dependent upon the aircraft category and aerodrome equipment and may be -

(a) RVR not lower than 75m if using an approved lateral guidance system; and

(b) RVR not less than 150m for Category A, B and C aeroplanes or RVR not less than 200m for Category D and E aeroplanes if not using an approved lateral guidance system.

(4) The categories referred to in subsection (3) above are established on the basis of 1.3 times the stall speed of the aeroplanes in the landing configuration at maximum certificated landing mass and are as follows -

(a) Category A - less than 91 knots indicated airspeed;

(b) Category B - 91 knots indicated airspeed or more, but less than 135 knots indicated airspeed;

(c) Category C - 135 knots indicated airspeed or more, but less than 141 knots indicated airspeed;

(d) Category D - 141 knots indicated airspeed or more, but less than 166 knots indicated airspeed; and

(e) Category E - 166 knots indicated airspeed or more, but less than 211 knots indicated airspeed.

Note - *In the event of low-visibility procedures being in force, the Air Traffic and Navigation Services Company will report to the Executive Director details of all aeroplanes attempting an approach, the RVR visibility at the time, and the outcome of the approach attempt. This information will be used by the NCAA in investigation of approaches attempted outside of the operator's equipment and PIC limitations or approval.*

(5) CAT II/III limits may be found technical standard 91.07.5 of Document NAM-CATS 91.

2. Low-visibility operations - equipment requirements

(1) The corporate operator of an aircraft shall include the minimum equipment which shall be serviceable at the commencement of a LVTO or a CAT II or III approach in its operations manual.

(2) The PIC shall satisfy him or herself that the status of the aircraft and the relevant airborne systems thereof is appropriate for the specific operation to be conducted.

3. Low-visibility operations - facilities requirements

(1) The specific facilities required to ensure safe LVO involve both the aerodrome and the PIC.

(2) No PIC of an aeroplane shall use an aerodrome for LVO, unless the aerodrome is approved for such operations by the appropriate authority of the State in which the aerodrome is located.

(3) The operator or PIC of an aeroplane intended to be used in LVO shall verify that low-visibility procedures have been established and are in force at the aerodromes where such operations are to be conducted.

(4) Criteria for the approval of an aerodrome to allow LVO to be conducted are -

(a) for low visibility take-offs with RVR of ≥150m (≥200m for Category D and E aeroplanes) to <400m -

(i) multiple RVR sources;

(ii) runway high intensity edge lights spaced 60m or less;

(iii) runway centreline lights spaced 15m or less and marking;

(iv) runway electrical multi-looping (multi-circuit design); and

(v) a secondary power supply;

(b) for low visibility take-offs with RVR ≥75m to <150m (<200m for Category D and E aeroplanes), in addition to those noted in sub-paragraph (a), a functioning lateral guidance system for take-off; and

Note - *For an aerodrome to be approved for LVTO operations, additional criteria are applied based on guidance in ICAO Document 9476, Manual of Surface Movement Guidance and Control Systems, and Document 9365, All Weather Operations Manual. It is up to the operator and/or PIC to ensure an aerodrome is suitably qualified for LVO before using it.*

(5) The requirements for the operator to conduct LVO are -

(a) the establishment of procedures and instructions to be used for LVTO and Category II and III operations that will ensure -

(i) the PIC establishes that the status of the visual and non-visual facilities is sufficient prior to commencing a LVTO or a Category II and III approach; and

(ii) the PIC confirms with the air traffic service unit, before commencing a LVTO or a Category II and III approach, that appropriate low-visibility procedures are in force and the aircraft has been issued the appropriate clearances;

(iii) a 90m visual segment is available from the cockpit at the start of the take-off run; and

(iv) the required RVR value has been achieved for all of the relevant RVR reporting points;

(b) the flight deck crew members are properly qualified to carry out a low-visibility take-off or a Category II and III approach; and

(c) the PIC ensures there are no MEL items or other aeroplane unserviceabilities that would disqualify the flight from attempting a LVO.

4. Low-visibility operations - personnel requirements

(1) Each operator applying for authorisation to conduct LVO shall establish and maintain an initial and recurrent ground and flight training programme as specified in of TS 93.03.3 that will ensure its flight crew are proficient in operating in such environment and shall publish its LVO training programme in its operations manual.

(2) The PIC shall ensure that LVO training is completed in accordance with TS 93.03.3. LVO training shall be endorsed in the flight crew's pilot licence or other accepted training document.

(3) The flight deck crew qualification requirements are specific to the operator and the type of aeroplane operated and the operator or responsible person shall ensure that each flight deck crew member completes a flight check (skills test) before conducting LVTO or Category II or III operations and that subsequent proficiency checks include LVO take-offs and approaches.

93.07.23 OPERATIONS WITH HEAD-UP DISPLAYS, ENHANCED VISION SYSTEMS OR NIGHT VISION GOGGLES

1. Introduction

(1) This TS provides guidance for the approval for use of head-up displays (HUD), enhanced vision systems (EVS) and night vision goggles (NVG) intended for installation and operational use in aircraft engaged in corporate aviation. HUD and EVS may be installed and operated to enhance situational awareness or to obtain an operational credit such as lower minima for take-off, approach or landing operations. HUD and EVS may be installed separately or together as part of a hybrid system. Use of these systems during instrument flight and any operational credit gained from their use requires approval from the Executive Director.

(2) No pilot may use a HUD, EVS or NVG in flight in IMC unless such pilot has received the training and checking specified in this TS.

(3) No PIC shall use a HUD, EVS or NVG in flight under IFR in an aircraft so equipped unless the aircraft has been approved for such flight as specified in this TS.

2. Head-up displays

(1) HUD may be used for the following purposes -

(a) to supplement conventional flight deck instrumentation in the performance of a particular task or operation. The primary flight deck instruments remain the primary means for manually controlling or manoeuvring the aircraft; and

(b) as a primary flight display -

(i) information presented by the HUD may be used by the pilot in lieu of scanning head-down displays. Operational approval of a HUD for such use allows the pilot to control the aircraft by reference to the HUD for approved ground or flight operations; and

(ii) information presented by the HUD may be used as a means to achieve additional navigation or control performance. Operational credits, in the form of lower minima, for HUD used for this purpose may be approved for a particular aircraft or automatic flight control system. Additional credit may also be allowed to conduct operations with HUD in situations where automated systems are otherwise used.

(2) Ground training in the use of the HUD shall be accomplished at an approved training organisation (ATO) or as part of an approved training programme. The programme shall include, as a minimum, the following-

(a) an understanding of the HUD and symbiology;

(b) HUD limitations and normal procedures, including maintenance and operational checks performed to ensure normal system function prior to use;

(c) failure modes of the HUD and the impact of the failure modes or limitations upon crew performance;

(d) consideration of the potential for loss of situational awareness due to "tunnel vision" (also known as cognitive tunnelling or attention tunnelling); and

(e) any effects that weather, such as low ceilings and visibilities, may have on the performance of a HUD.

(3) Flight training of at least two hours shall be accomplished using an aircraft or flight simulation training device (FSTD) equipped with the same type of HUD to be used in the aircraft. The training shall consist of normal, abnormal and emergency use of the equipment throughout all flight phases, a variety of take-off and approach conditions and shall include -

(a) pilot seat adjustment to attain and maintain appropriate viewing angles and verification of HUD operating modes;

(b) operations during critical flight events (ACAS TA/RA, upset and wind shear recovery, engine or system failure, etc.);

(c) crew co-ordination, monitoring and verbal call-out procedures for single HUD installations with head-down monitoring for pilot-not-equipped with HUD and head-up monitoring for pilot-equipped with HUD;

(d) crew co-ordination, monitoring and verbal call-out procedures for dual HUD installations with use of the HUD by the pilot flying the aircraft and either head-up or head-down monitoring by the other pilot; and

(e) use during low visibility operations, including taxi, take-off, instrument approach and landing in both day and night conditions. This training should include the transition from head-down to head-up and head-up to head-down operations.

3. Enhanced vision systems

(1) Enhanced vision systems (EVS) allow the pilot to view an image of the external scene obscured by darkness or other visibility restrictions which -

(a) may improve situational awareness;

(b) may allow pilots to detect terrain or obstructions on the runway or taxiways;

(c) may provide visual cues to enable earlier runway alignment and a more stabilised approach; and

(d) may also be used to obtain approval to use reduced visibility minima when the images are presented into the pilot's external field of view on a HUD without significantly restricting that view.

(2) For a Corporate Aviation Operator who wishes to use EVS in IFR flight, EVS ground training shall be accomplished at an ATO or as part of an approved training programme. The programme shall include, as a minimum, the following -

(a) an understanding of the system characteristics and operational constraints;

(b) normal procedures, controls, modes and system adjustments;

(c) EVS limitations;

(d) failure modes of the EVS and the impact of the failure modes or limitations upon crew performance, in particular, for two-pilot operations; and

(e) any effects that weather, such as low ceilings and visibilities, may have on the performance of an EVS.

(3) For a Corporate Aviation Operator who wishes to use EVS in IFR flight, flight training shall be accomplished using an aircraft or FSTD equipped with the same type of EVS to be used in the aircraft. The training shall consist of normal, abnormal and emergency use of the equipment throughout all flight phases, a variety of approaches and take-off conditions and shall include -

(a) enhanced vision display during low visibility operations, including taxi, take-off, instrument approach and landing and system use for instrument approach procedures in both day and night conditions;

(b) crew co-ordination and monitoring procedures and pilot call-out responsibilities;

(c) transition from enhanced imagery to visual conditions during the runway visual acquisition; and

(d) rejected landing due to loss of visual cues of the landing area, touchdown zone or rollout area.

4. HUD, EVS and NVG approval

(1) Operational and airworthiness approval for the use of a HUD, EVS or NVG in IFR flight or at night shall be obtained.

Note: *Specifications for NVG need still to be developed.*

(2) For enhanced situational awareness, the installation and operational procedures shall ensure that EVS operations do not interfere with normal procedures or the operation or use of other aircraft systems.

(3) HUD, EVS or NVG, as applicable, installed in aircraft in the State of Manufacture shall meet the airworthiness requirements of such State. Provided an owner or operator can submit evidence of meeting the requirements of the State of Manufacture, airworthiness approval for the use of the HUD or EVS, as applicable, in that aircraft shall be given.

(4) Prior to installing a HUD, EVS or NVG, as applicable, as a retrofit, an owner or operator shall contact the NCAA to determine the airworthiness requirements associated with its approval for use.

(5) An airworthiness approval issued to an operator for an aircraft shall be valid for any other aircraft of the same type operated by such operator: Provided the HUD, EVS or NVG equipment, as applicable, is the same in each aircraft.

(6) An airworthiness approval issued to an aircraft type may be extended to other aircraft types: Provided the Executive Director is of the opinion that the other aircraft types have sufficient commonality with the approved aircraft and the HUD, EVS or NVG equipment, as applicable, is the same in all the aircraft.

(7) Pilots shall pass a knowledge test following the ground training and a skills test following the flight training, both of which shall be administered by the operator or an authorised person. Upon successful completion of the skills test, the operator or crew member shall record the qualification to operate with a HUD, EVS or NVG, as applicable, in his or her training records.

(8) Annual recurrent training in the use of HUD, EVS or NVG, as applicable, shall be accomplished.

93.07.24 OPERATIONS WITH ELECTRONIC FLIGHT BAGS

1. Introduction

(1) This TS provides guidance for the approval for use of installed and portable electronic flight bags (EFB).

(2) Installed EFBs may be incorporated during the aircraft type design, by a change to the type design or added by a supplemental type certificate.

(3) Portable EFBs are not considered to be part of the certified aircraft configuration and do not require airworthiness approval.

Note - *Refer to section 2 for additional information concerning portable EFBs*.

2. Airworthiness approval

(1) Portable EFBs that do not require airworthiness approval -

(a) are generally commercial-off-the-shelf (COTS)-based computer systems used for aircraft operations (e.g. laptop, tablet PC);

(b) are not attached to an aircraft mounting device;

(c) are considered to be a controlled portable electronic device (PED);

Note - *A controlled PED is a PED that is subject to administrative control by the company. This will include, inter alia, tracking the location of the devices to specific aircraft or persons and ensuring that no unauthorised changes are made to the hardware, software or databases. A controlled PED will also be subject to procedures to ensure that it is maintained to the latest amendment state*.

(d) may only connect to aircraft power through a certified power source;

Note - *The EFB power source should be designed such that it may be deactivated at any time. Where there is no possibility for the flight crew to quickly remove or unplug the power to the EFB system, a clearly labelled and conspicuous means (e.g. on/off switch) should be provided. Circuit breakers are not to be used as switches; their use for this purpose is prohibited.*

(e) are normally without aircraft data connectivity except under specific conditions; and

Notes - *Data connectivity of the EFB to other aircraft systems is not authorised except if the EFB system is connected to -*

1. a system completely isolated from the avionics/aircraft systems (e.g., EFB system connected to a transmission medium that receives and transmits data for Aircraft Administrative Communications (AAC) purposes for usage on the ground only); and

2. a certified data link to receive data only from aircraft systems, where the data link, through the certification process, has an approved security device to protect the aircraft systems from receiving any data from the EFB system and from the installation or use of unauthorised

applications and data. Through the certification process, this data link should also have been demonstrated to protect the installed aircraft systems from adverse effects due to EFB system failures. Subject to the above provisions, there is no further evaluation required when connecting the EFB system to the aircraft data link port.

(f) shall be secured during critical phases of flight.

(2) Even though portable EFBs do not require an airworthiness approval as they are "non-installed equipment", EMI demonstrations, batteries/power sources, data connectivity and rapid depressurisation shall be assessed if the Executive Director so determines.

(3) For EFBs other than those addressed in subsection (1), the entire EFB, or some elements of the EFB, shall require an airworthiness approval. Elements to be subject to airworthiness approval are determined upon analysis of their interface with aircraft systems and equipment. These EFBs shall be included as part of the minimum equipment list (MEL), if applicable.

(4) EFBs integrated into the aircraft as part of its initial design or installed later as a retrofit in accordance with the requirements of the State of Manufacture shall be given approval: Provided the operator can submit evidence of having met the requirements of the State of Manufacture.

(5) For aircraft without the evidence specified in subsection (4), an operator shall contact the NCAA to determine the airworthiness requirements associated with its approval for use prior to installing an EFB as a retrofit.

3. Operational approval

(1) An operator transitioning to a paperless flight deck (i.e., removal of charts, manuals, etc.) shall complete the requirements specified in subsections (2) to (6), inclusive, prior to operating with an EFB.

(2) Operational approval is contingent on the operator or responsible person completing ground training for personnel using the EFB system. The programme shall include, as a minimum -

(a) an overview of the system architecture;

(b) pre-flight checks of the system;

(c) limitations of the system;

(d) the use of each operational function on the EFB;

(e) restrictions on the use of the system, including when some or all of the EFB functions are not available;

(f) the conditions, including phases of flight, under which the EFB should not be used;

(g) procedures for cross-checking data entry and computed information;

(h) human performance considerations on the use of the EFB; and

(i) additional training for new applications, new features of current applications or changes to the hardware configuration.

(3) EFB operations with no paper backup shall have a means of mitigation against the effects of a failure or malfunction of the EFB. Mitigation against EFB failure or impairment may be accomplished by a combination of -

(a) system design;

(b) separate and backup power sources for the EFB;

(c) redundant EFB applications hosted on different EFB platforms;

(d) paper products carried by selected crew members;

(e) complete set of paper backups on the flight deck; and/or

(f) procedural means.

(4) The operator or responsible person shall assign responsibility for the administration and physical control of EFBs and the associated software; in particular, the activation of amendments to the hardware and software.

(5) The operator or responsible person shall ensure that the EFB is protected from unauthorised intervention.

(6) The operator or responsible person shall ensure that the EFB is maintained in accordance with the manufacturer's recommended programme. The operator or responsible operator shall establish procedures for action to be taken when an EFB is out of service unless provided for in a MEL.

(7) Prior to use of a portable EFB, an assessment shall be made of how the device will be used on the flight deck. Safe stowage, crashworthiness, security and use under normal environmental conditions, including turbulence, shall be addressed by the operator.

(8) Whether the EFB is portable or integrated with the aircraft, the operator shall carry out an assessment of the human-machine interface and aspects of crew co-ordination when using the EFB. Whenever possible the EFB/user interface should be consistent with, but not necessarily identical to, the flight deck design philosophy. The assessment should include -

(a) general considerations including flight crew member workload, integration of the EFB into the flight deck, display and lighting issues, system shutdown and system failures;

(b) physical placement issues, including stowage area, use of unsecured EFBs, design and placement of the mounting cradle;

(c) consideration of possible interference with aircraft controls, outside vision, view of other flight deck displays, oxygen mask access, egress, crew cooling and speaker sound;

(d) software considerations, including ease of access to common and time-critical system functions, consistency of symbols, terms and abbreviations, legibility of text, system responsiveness, use of colour, display of system status, error messages, management of multiple applications and use of active regions;

(e) hardware considerations, including controls and input devices and flight crew accessibility to these devices; and

(f) application-specific considerations, including organisation and appearance of information, system detection of data entry errors and user interaction with applications.

(9) If an EFB generates information similar to that provided by existing flight deck systems, procedures should clearly identify -

(a) which information source will be primary;

(b) which source will be used for back-up information;

(c) under what conditions the back-up source will be used; and

(d) what actions will be taken when information provided by an EFB does not agree with that from other flight deck sources or, if more than one EFB is used, when one EFB disagrees with another.

(10) Upon receiving airworthiness approval and meeting the requirements of subsections (2) to (9), inclusive, the operator or PIC shall undergo a six-month self-evaluation period during which paper backups of the materials on the EFB shall be carried. The back-up paper materials shall be readily available to the flight crew members during flight time.

(11) If, following the six-month evaluation period, the operator or PIC is satisfied that the equipment and procedures are adequate and the crew members, maintenance personnel and other persons involved in the use of the EFB are sufficiently trained and knowledgeable, the operator or PIC shall submit a request to the NCAA seeking approval to use the EFB.

(12) The NCAA assessment of an application to use EFBs will be based upon -

(a) confirmation that the requirements of subsections (2) to (9), inclusive, have been met;

(b) a demonstration of system reliability and that information provided will not be inaccurate or misleading;

(c) that the operator or responsible person has established a means to carry out quality assurance approval of data content prior to installation on the EFB; and

(d) satisfactory completion of a demonstration flight using the EFB.

(13) The authorisation to use EFBs shall contain any restrictions or limitations that the Executive Director deems necessary in the interests of safety.

(14) If the EFB provides electronic displays that replace paper products formerly required for safe flight operations or is a source for other required information or displays, corporate aviation operators shall describe EFB operations in the operations manual.

93.07.26 CARRY-ON BAGGAGE

1. Procedures for stowing of carry-on baggage

Procedures established by an operator or PIC to ensure that carry-on baggage is adequately and securely stowed shall take account of the following -

(a) each item carried in a cabin must be stowed only in a location that is capable of restraining it;

(b) mass limitations placarded on or adjacent to stowages shall not be exceeded;

(c) underseat stowage areas shall not be used unless the seat is equipped with a restraint bar and the baggage is of such size that it may adequately be restrained by this equipment;

(d) items shall not be stowed in toilets or against bulkheads that are incapable of restraining articles against movement forwards, sideways or upwards and unless the bulkheads carry a placard specifying the greatest mass that may be placed there;

(e) baggage placed in lockers shall not be of such size that they prevent latched doors from being closed securely;

(f) baggage shall not be placed where it will impede access to emergency equipment; and

(g) checks shall be made before take-off, before landing and whenever the PIC illuminates the fasten seat belts sign, or otherwise so orders, to ensure that baggage is stowed where it cannot impede evacuation from the aircraft or cause injury by falling, or other movement, as may be appropriate to the phase of flight.

93.07.28 BRIEFING OF PASSENGERS

1. Standard safety briefing

The standard safety briefing shall consist of an oral briefing provided by a crew member designated by the PIC or by audio or audio-visual means in at least the English language or as required by the Executive Director, which includes the following information as applicable to the aircraft, equipment and operation -

(a) prior to take-off -

(i) when, where, why and how carry-on baggage is required to be stowed;

(ii) the fastening, unfastening, adjusting and general use of safety belts or safety harnesses;

(iii) when seat backs must be secured in the upright position and tray tables must be stowed;

(iv) the location and operation of emergency exits;

(v) the floor proximity emergency escape path lighting system if applicable;

(vi) the location, purpose of, and advisability of reading the safety features card;

(vii) the regulatory prohibition on smoking on board the aircraft at any time;

(viii) the location of any emergency equipment the passenger may have a need for in an emergency situation such as the ELT, fire extinguisher, survival equipment, including the means to access it if in a locked compartment, first aid kits and life rafts;

(ix) the use of passenger operated portable electronic devices;

(x) the location and operation of the fixed passenger oxygen system, including the location and presentation of the masks; the actions to be performed by the passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask. This briefing may be completed after take-off but prior to reaching 25 000 feet (helicopters: 15 000 feet); and

(xi) when carried on board, the location, use of and when to inflate life jackets, including how to remove them from stowage/packaging, and a demonstration of the method of donning and inflation. This briefing may be completed after take-off but prior to the overwater portion of the flight;

(b) after take-off -

(i) that smoking is prohibited; and

(ii) the advisability of using safety-belts or safety harnesses during flight;

(c) in-flight when the "Fasten Seat Belt" sign has been turned on or other advice of the need to fasten safety harnesses for reasons of turbulence;

(d) prior to landing -

(i) carry-on baggage stowage requirements;

(ii) correct seat back and chair table positioning;

(iii) on flights scheduled for four hours duration or more, the location of emergency exits; and

(iv) the seat belt requirement; and

(e) after landing, prior to gate arrival -

(i) the need to remain seated with their seat belt fastened until the aircraft comes to a full stop at the point of disembarkation; and

(ii) the manner in which they will be assisted or guided to the safest direction and most hazard-free route for passenger movement away from the aircraft following disembarkment.

Note - *The safety message of the briefing may not be diluted by the inclusion of any service information, advertising or non-related comments that would affect the integrity of the safety briefing.*

2. Individual safety briefing

The individual safety briefing shall include, as applicable to the situation -

(a) any information contained in the standard safety briefing and the safety features card that the passenger would not be able to receive during the normal conduct of that safety briefing; and

(b) additional information to the needs of that person as follows -

(i) the most appropriate brace position for that passenger in consideration of his/her condition, injury, stature and/or seat orientation and pitch;

(ii) the location to place any service animal that accompanies the passenger;

(iii) for a mobility-restricted passenger who needs assistance in moving expeditiously to an exit during an emergency -

(aa) a determination of what assistance the person would require to get to an exit;

(bb) the route to the most appropriate exit;

(cc) the most appropriate time to begin moving to that exit; and

(dd) a determination of the most appropriate manner of assisting the passenger;

(iv) for a visually impaired person -

(aa) detailed information of and facilitating a tactile familiarisation with the equipment that he/she may be required to use;

(bb) advising the person where to stow his/her cane if applicable;

(cc) the number of rows of seats between his/her seat and his/her closest exit and alternate exit;

(dd) an explanation of the features of the exits; and

(ee) if requested, a tactile familiarisation of the exit;

(v) for a comprehension-restricted person: while using the safety features card, pointing out the emergency exits and alternate exits to use and any equipment that he/she may be required to use;

(vi) for persons with a hearing impairment -

(aa) while using the safety features card, point out the emergency exits and alternate exits to use and any other equipment that the person may be required to use; and

(bb) communicating detailed information by pointing, face-to-face communication permitting speech reading, pen and paper, through an interpreter or through their attendant;

(vii) for a passenger who is responsible for another person on board, information pertinent to the needs of the other person, as applicable -

(aa) in the case of an infant -

(A) seat belt instructions;

(B) method of holding infant for take-off and landing;

(C) instructions pertaining to the use of a child restraint system;

(D) oxygen mask donning instructions;

(E) recommended brace position; and

(F) location and use of life preservers, as required;

(bb) in the case of any other person -

(A) oxygen mask-donning instructions;

(B) instructions pertaining to the use of a child restraint system; and

(C) evacuation responsibilities; and

(viii) for an unaccompanied minor, instructions to pay close attention to the normal safety briefing and to follow all instructions. A passenger that has been provided with an individual safety briefing need not be re-briefed following a change in crew if the crew member that provided the individual safety briefing has advised a member of the new crew of the contents of that briefing, including any information respecting the special needs of that passenger. A passenger may decline an individual safety briefing.

3. Passenger preparation for emergency landing

The emergency briefing provided in the event of an emergency where time and circumstances permit shall consist of instructions pertaining to -

(a) safety belts/safety harnesses;

(b) seat backs and chair tables;

(c) carry-on baggage;

(d) safety features cards;

(e) brace position (how to brace, when to assume position, how long to remain);

(f) if applicable, life preservers;

(g) location of exits;

(h) if applicable, evacuation procedures for an occupant of a child restraint system; and

(i) the removal of any other item that may cause harm to passengers during evacuation; i.e. sharp objects, high heeled shoes, pencils, etc.

93.07.29 SAFETY FEATURES CARD

The safety features card shall contain the following information as applicable to the aircraft and equipment carried -

(a) general safety information including -

(i) smoking is prohibited on board the aircraft;

(ii) each type of safety belt or safety harness installed for passenger use, including when to use, and how to fasten, tighten and release;

(iii) where carry-on baggage must be stowed for take-off and landing and any other related requirements and restrictions pertinent to that particular aircraft; and

(iv) correct positioning of seat backs and chair tables for take-off and landing;

(b) emergency procedures and equipment including -

(i) fixed passenger oxygen system showing -

(aa) mask location and presentation; the actions to be performed by the seated passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask; and

(bb) priority for persons assisting others with oxygen;

(ii) for aircraft where cabin crew are not required -

(aa) location of first aid kits;

(bb) location of fire extinguishers that would be accessible to the passengers;

(cc) location of ELTs; and

(dd) location of survival equipment and if the stowage compartment is locked, the means of access or location of the key;

(iii) passenger brace position for impact, as appropriate for each type of seat and restraint system installed for passenger use; including the brace position for an adult holding an infant;

(iv) the location, operation and method of using each emergency exit type on the aircraft, including identification of those emergency exits known to be rendered unusable in a ditching or because of the aircraft configuration such as a combi configuration;

(v) the safest direction and most hazard-free escape route for passenger movement away from the aircraft following evacuation;

(vi) the attitude of the aircraft while floating;

(vii) location of life jackets or equivalent individual flotation devices and correct procedures for removal from stowage/packaging; donning and use of the life jacket or equivalent individual flotation device for adult, child and infant users, including when to inflate;

(viii) location and use of life rafts;

(ix) location, removal and use of flotation devices; and

(x) the form, function, colour and location of any floor proximity emergency escape path lighting system that is installed; and

Note - *An operator may, if the safety features card provided by the aircraft manufacturer does not depict some or all of the information required by this sub-paragraph, convey the missing information to the passengers by means of an oral briefing.*

(xi) the safety features card shall be applicable to the aircraft being operated and shall contain only safety information that is -

(aa) accurate for the aircraft type and configuration in which it is carried and in respect of the equipment carried;

(bb) presented with clear separation between each instructional procedure. All actions required to complete a multi- action procedure to be presented in correct sequence and the sequence of actions to be clearly identified; and

(cc) depicted in a clear and distinct manner.

93.07.30 SEATS, SEAT SAFETY BELTS, HARNESSES AND CHILD RESTRAINT DEVICES AND CARRIAGE OF INFANTS

(1) An owner or an operator of an aircraft shall not operate the aircraft unless such aircraft is equipped, as applicable, for the carriage of infants with:

(a) an air service operator which ensures that an infant is only carried when properly secured in the arms or on the lap of an adult passenger, or with a child restraint system or in a sky cot;

(b) a sky cot may be used provided that it-

(i) is restrained so as to prevent it from moving under the maximum accelerations to be expected in flight;

(ii) is fitted with a restraining device so as to ensure that an infant shall not be thrown from such sky cot under the maximum accelerations to be expected in flight;

(iii) may not be used during critical phases of flight; and

(iv) shall be positioned in such a way that they do not prevent or hinder the movement of adjacent passengers or block exists.

(c) a child restraint system may be used provided that-

(i) an infant shall not be carried behind a bulkhead unless a child restraint device is used during critical phases of flight and during turbulence;

(ii) an infant may be seated in a car-type infant seat, provided that an infant seat-

(aa) is secured to the aeroplane seat in accordance with the instructions provided with the child seat;

(bb) is designed to be secured to a passenger seat by means of a single lap strap and face the same direction as the passenger seat;

(cc) does not unreasonably extend beyond the forward position of the passenger seat cushion on which it rests;

(dd) is always secured to the passenger seat during flight, even when it is unoccupied by the child;

(ee) shall not be removed from the aircraft, only the infant shall be removed from the aircraft in an emergency evacuation;

(ff) is positioned in such a way that it does not prevent or hinder the movement of adjacent passengers or block exits;

(gg) is not placed in an aisle seat, depending on cabin configuration;

(hh) is used in accordance with infant weight limitations specified for such device;

(iii) is fitted with a single release harness, which secures the infant's lap, torso and shoulders, but designed that the child can easily be secured in or removed from it; and

(iv) shall not be located in the same row or row directly forward or aft of an overwing emergency exit; or in the same row as any other exit unless such exit and row are separated by a bulkhead.

(d) When an infant is carried in the arms or on the lap of an adult passenger –

(i) the seat belt, when required to be worn, shall be fastened around the passenger carrying or nursing the infant, but not around the infant; and

(ii) where applicable, the name of the infant shall be bracketed on the passenger list with the name of the person carrying or nursing the infant.

93.08.1 GENERAL REQUIREMENTS

Division 1: Aeroplane Limitations

1. Aeroplane Performance data

(1) Operations Using Other than Approved Performance Data - Contaminated Runway

A PIC may elect to use performance data from a source other than the aeroplane flight manual when operating an aeroplane to or from a contaminated runway -

Provided -

(a) the aeroplane shall be operated in accordance with a contaminated runway operations supplement to the flight manual that has been prepared or approved by the aeroplane manufacturer;

(b) take-off mass limitations may be based on an engine-out condition using a 15foot screen height, provided the area to be used for first segment climb contains no obstacles taller than 15 feet;

(c) where the manufacturer permits, stopping distance calculations may include credit for reverse thrust on the operative engine;

(d) operation at reduced thrust settings shall not be permitted and Vmc shall be based on full-rated thrust;

(e) the corporate aviation operator's approved operations manual shall set out procedures for operations using contaminated runways; and

(f) pilot and, where applicable, flight operations officer ground training shall address contaminated runway operations.

(2) Operations Using Other than Approved Performance Data - Reciprocating-Engine Aeroplanes in Cargo-only Operations

A PIC may elect to use performance data from a source other than the aeroplane flight manual when operating a reciprocating- engine aeroplane during cargo-only operations from or to unprepared surfaces: Provided -

(a) the corporate aviation operator's approved operations manual sets out the programme for operations involving unprepared surfaces. The programme shall include -

(i) pilot-in-command training, checking and experience requirements, which shall include -

(aa) at least 100 hours on type;

(bb) completion of a course of ground and flight training covering topics such as take-off and landing surface characteristics, obstacle assessment and interpretation of pertinent aeroplane data;

(cc) completion of at least 25 hours of line induction involving unprepared surface operations; and

(dd) passing a line check covering unprepared surface operations;

(b) procedures for company operational approval for unprepared surface operations; and

(c) procedures for assessing and operating from/to unprepared surfaces and unfamiliar approach and departure routes;

(d) for operations in accordance with CAR 93.01.1(1)(a) or (b), the PIC shall comply with the requirements specified in paragraph (a)(i) above.

2. Take-off mass limitations - accelerate-stop distance

A PIC may operate a reciprocating-engine aeroplane where the accelerate-stop distance required exceeds the accelerate-stop distance available: Provided the PIC restricts the aeroplane to no more than 9 passenger seats being occupied.

3. Net take-off flight path - visual obstacle avoidance

A PIC may conduct a departure of an aeroplane without determining net take-off flight path for a reciprocating-engine aeroplane when visual obstacle avoidance is possible: Provided the following conditions are met -

(a) Obstacle Assessment -

(i) the PIC shall obtain the best available data concerning obstacles in the proposed take-off path. Transient obstacles (such as construction equipment or moored watercraft, etc.) shall be considered when they are estimated to lie within 300 feet of the centre-line of the proposed take-off path; and

(ii) where the precise height, bearing and distance of an object is not known (such as objects depicted on a topographical map), the PIC shall use a reasonable estimate for performance calculations. Calculations shall clearly indicate where estimated information is used;

(b) Departure Planning -

(i) the person responsible for operations or his/her delegate shall establish a company engine-out departure plan using procedures set out in the approved operations manual. The PIC of an aircraft operating in accordance with CAR 93.01.1(1) (a) or (b) shall establish an engine out departure plan. The plan shall include at least the following -

(ii) obstacle assessment;

(iii) aeroplane performance, including turn radii; and

(iv) visual reference points to be used during the departure route;

(c) prior to commencing a take-off, the PIC shall, in consideration of the current winds, density altitude and aeroplane mass, satisfy himself or herself that the departure plan to be followed in the event of an engine failure on take-off avoids all obstacles in the departure path by either 35 feet vertically or 300 feet horizontally;

(d) in considering visual contact with the controlling obstacles during the departure phase, the PIC shall establish, to the satisfaction of the Executive Director, that taking into account flight deck angle and alterations in the field of view during turns, the flight crew will be able to maintain continuous visual contact with all significant obstacles located within the departure route; and the corporate aviation operator shall retain the departure plan for audit purposes.

93.10.1 REQUIREMENTS FOR QUALITY MANAGEMENT SYSTEM (CAOC holder only)

1. Definitions

The terms used in this TS have the following meaning -

"quality manager" means the manager responsible for the implementation, management and monitoring of the quality system and for requesting corrective action;

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

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

"quality assurance (QA)" means all those planned and systematic actions necessary to provide adequate confidence that operational and maintenance practices satisfy prescribed requirements.

2. Quality management system (QMS) requirements

The QMS shall be established -

(a) to ensure the adequacy of operational and maintenance activities in maintaining compliance with requirements, standards and operational procedures;

(b) to specify the basic structure of the quality system applicable to the operation and be structured according to the size and complexity of the operation to be monitored; and

(c) as a minimum, to include the following -

(i) objectives of the QA programme, which shall be -

(aa) written;

(bb) specific, measurable, attainable, realistic and time-based; and performance shall be measured and tracked;

Note - *The QA objectives are not simply related to safety goals but are also part of the strategic and business objectives of the organization.*

(ii) how the organisation intends meeting the provisions of the CAR;

(iii) how the operator will meet additional standards and operating procedures;

(iv) drawing up a quality policy statement;

(v) documentation, including manuals, reports, statistics and records required in support of the QA programme and how they are to be controlled;

(vi) quality processes and procedures to be employed in support of the QA programme;

(vii) monitoring process;

(viii) the procedures to be utilised in effecting the QA programme, including -

(aa) audit procedures;

(bb) reporting procedures; and

(cc) corrective action and verification procedures;

(ix) a system of record keeping; and

(x) a training syllabus.

3. QMS policy

A corporate aviation operator shall establish a formal, written quality policy statement, constituting a commitment by the chief executive officer as to what the quality system is intended to achieve. The quality policy shall -

(a) reflect the commitment to the goal of achieving and continuing with compliance with regulatory requirements together with any additional standards specified by the operator; and

(b) reflect the chief executive officer's commitment to -

(i) appoint resources to manage the system;

(ii) ensure the structure required to meet the goals is established and maintained;

(iii) establish measurable objectives; and

(iv) ensure continual improvement in the QMS.

4. Structure

(1) The chief executive officer shall appoint an accountable QM to manage the system and who meets the experience and qualifications requirements specified in TS 93.06.3(3).

(2) The QM shall have direct link to the chief executive officer to discuss QMS matters when required.

(3) The roles and responsibilities of the QM and all other role players within the QMS shall be defined.

(4) QA audit responsibilities shall be performed and reported independent from all other line functions within the organisation, except as provided for in section 7 below.

(5) The structure of the organisation may vary with the size and complexity of the operator but in all cases, the QMS should be developed so as to properly interface internally and with external agencies or service providers with which the company engages.

5. Process requirements

(1) As processes are the means by which the QA goals are meant to be attained, they must be documented, whether written as procedures or mapped in flow chart format, for every significant activity and task within the organisation.

(2) The inputs, sequential steps and outputs must be shown, and where multiple individuals are involved, responsible for each output.

(3) Processes shall list -

(a) the references that must be consulted in using the process;

(b) the records that must be completed as evidence of the process having been followed; and

(c) the minimum retention periods for these documents as specified in the document and records control procedures.

(4) Processes which fall into the following categories of quality control must be -

(a) key/core business processes critical to the company's reason for existence. e.g. flight operations, ground operations, maintenance, safety management, etc.;

(b) support processes that are developed in support of the core processes, e.g. recruitment, procurement, etc.; and

(c) quality processes, like auditing, management review of the system, document control, records control, measurement of objectives, measurement of the ability of processes to achieve their intended result, data analysis corrective action and preventive action.

6. Documentation

(1) Except as provided in subsection (3), the QMS must be supported by a quality management manual (QMM) either as a part of the operations manual system or a stand-alone document, the contents of which shall include -

(a) the system of amendment and revision -

(i) the procedure for amending the manual, including temporary revisions;

(ii) who is responsible for the issuance and insertion of amendments and revisions;

(iii) a record of amendments and revisions with insertion dates and effective dates;

(iv) a description of the system for the annotation of pages and their effective dates;

(v) a list of effective pages; and

(vi) a description of the distribution system for the manual, amendments and revisions;

(b) the company's policy statement;

(c) the company's structure;

(d) the company's objectives;

(e) the roles, duties and responsibilities of the company's key personnel, including the chief executive officer and QM. Where there is more than one QM, the mandate and specific functions of each and the interrelationship between them must be clearly identified; and

(f) the procedures/processes whether written or mapped (some companies include only high level cross-departmental processes in the QMM and others include all processes in their QMM - they would end up with a series of manuals). Detailed manuals are normally the responsibility of the line managers but they still form part of the QMS and will fit into the QMS to meet requirements.

(2) In addition, the following documentation, usually residing in the QMM, shall be prepared and used within the QMS -

(a) forms and checklists that have to be used in the execution of the processes;

(b) a list of records used in the system;

(c) a list of forms used in the system;

(d) a list of registers or software systems in use as support to the system; and

(e) a list of external documents that impact on the system (called references).

(3) The information required by subsection (1) may be included in the corporate aviation operator's safety management manual (SMM) or operations manual if the company's size and complexity are such that a separate manual is not required.

7. Quality manager

(1) In the case of small and very small operators, the post of the QM may be combined or outsourced subject to the approval of the Executive Director. However, in such event, independent personnel should conduct the quality inspections and audits.

(2) The specific duties and responsibilities of the QM will vary in relation to the size and complexity of the company but shall be identified in the QMM or other manual, if a separate QMM is not produced.

8. Quality management system

(1) A QMS shall include a quality assurance programme that includes all planned and systematic actions necessary to provide confidence that all operations and maintenance are conducted in accordance with all applicable requirements, standards and operational procedures. A quality assurance programme should, at least, include the following -

(a) Inspections

The primary purpose of a quality inspection is to observe a particular event/action/document, etc., in order to verify whether established operational procedures and requirements are followed during the accomplishment of that event and whether the required standard is achieved. To the extent conducted by the operator, quality inspections shall include -

(i) flight operations;

(ii) ground de-icing/anti-icing;

(iii) flight support services;

(iv) load control;

(v) maintenance;

(vi) technical standards; and

(vii) training standard;

(b) Audits

(i) Audits shall include quality procedures and processes covering at least the following -

(aa) a statement explaining the scope of the audit;

(bb) planning and preparation;

(cc) gathering and recording evidence; and

(dd) analysis of the evidence; and

(ii) Audit techniques shall include -

(aa) interviews or discussions with personnel;

(bb) a review of published documents;

(cc) the examination of an adequate sample of records;

(dd) the witnessing of the activities which make up the operation; and

(ee) the preservation of documents and the recording of observations;

(c) Auditors

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

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

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

(iv) The operator's quality assurance programme shall identify the experience levels of persons within the company responsible and authorised to -

(aa) perform quality inspections and audits as part of on-going quality assurance;

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

(cc) initiate or recommend solutions to concerns or findings through designated reporting channels;

(dd) verify the implementation of solutions within specific timescales; and

(ee) report directly to the QM;

(d) Audit Scope

Operators are required to monitor compliance with the operational procedures they have designed to ensure safe operations, airworthy aircraft, and the serviceability of both operational and safety equipment. In so doing, they should as a minimum and where appropriate, monitor the following -

(i) the organisation

(ii) plans and company objectives;

(iii) operational procedures;

(iv) flight safety;

(v) operator certification (CAOC/Operations Specifications);

(vi) supervision within the organisation;

(vii) aircraft performance;

(viii) all-weather operations;

(ix) communications and navigational equipment and practices;

(x) mass, balance and aircraft loading;

(xi) instruments and safety equipment;

(xii) manuals, logs and records;

(xiii) aircraft maintenance/operations interface;

(xiv) use of the MEL;

(xv) maintenance programmes and continued airworthiness;

(xvi) airworthiness directives management;

(xvii) maintenance accomplishment;

(xviii) defect deferral;

(xix) flight crew;

(xx) operational control personnel;

(xxi) dangerous goods;

(xxii) security;

(xxiii) training; and

(xxiv) safety management system.

(e) Audit Scheduling

A quality assurance programme shall include a defined audit schedule and a periodic review-cycle, area by area, with consideration being given to the following factors -

(i) the schedule should be flexible and allow unscheduled audits when trends are identified. An operator should establish a schedule of audits to be completed during a specified calendar period. All aspects of the operation shall be reviewed within every period of 12 months in accordance with the programme unless an extension to the audit period is accepted by the Executive Director;

(ii) an operator may increase the frequency of audits at his or her discretion but shall not decrease the frequency unless accepted by the Executive Director. It is considered unlikely that an interval between audits greater than 24 months would be acceptable;

(iii) follow-up audits should be scheduled when necessary to verify that corrective action was carried out and that it was effective; and

(iv) the operator's defined audit schedule can be affected by significant changes to the management, organisation, operation or technologies, as well as changes to the regulatory requirements, resulting in the requirement for an ad hoc audit.

(f) Monitoring

(i) The aim of monitoring within the quality system is to investigate and judge its effectiveness and thereby to ensure that defined policy and operational and maintenance standards are continuously complied with. Monitoring activity is based upon quality inspections, audits, corrective action and follow-up; and

(ii) The operator shall establish and publish a procedure to monitor regulatory compliance on a continuing basis. This monitoring activity shall be aimed at eliminating the causes of unsatisfactory performance;

(g) Corrective Action

The quality assurance programme shall include procedures to ensure that corrective actions are taken in response to findings. These quality procedures should result in the monitoring of such actions to verify their effectiveness as having been rectified. The procedures and responsibilities associated with a corrective action programme are -

(i) subsequent to the quality inspection/audit, the operator shall establish -

(aa) the seriousness of any findings and any need for immediate corrective action;

(bb) the origin of the finding;

(cc) which corrective actions are required to ensure that the noncompliance does not recur;

(dd) a schedule for corrective action;

(ee) the identification of individuals or departments responsible for implementing corrective action; and

(ff) allocation of resources by the chief executive officer, where appropriate; and

(ii) the QM shall -

(aa) verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;

(bb) verify that corrective action includes the elements outlined in subsection (1)(g)(i) above;

(cc) monitor the implementation and completion of corrective action;

(dd) provide management with an independent assessment of corrective action, implementation and completion; and evaluate the effectiveness of corrective action through the follow-up process;

(h) Follow-up

Follow-up is a mandatory part of the QA process to ensure that each finding of non-compliance has been resolved satisfactorily and that the resultant solution is effectively implemented, such that a re-occurrence of the situation leading to the non-compliance is not or is highly unlikely to recur. Follow-up requires at least an inspection of the area identified as being non-compliant but may require a more in-depth audit to ensure a satisfactory resolution of the issue.

(i) Management Evaluation

Management evaluation is a comprehensive, systematic, documented review by the management of the quality system, operational policies and procedures and should include the following -

(i) the results of quality inspections, audits and any other indicators;

(ii) the overall effectiveness of the management organisation in achieving stated objectives;

(iii) consideration of conclusions and recommendations made as a result of an evaluation submitted in writing to the responsible manager for action; and

(iv) the frequency, format and structure of internal management evaluation activities;

(j) Records

The operator shall maintain accurate, complete and readily accessible records documenting the results of the quality assurance programme. The following records shall be retained for a period of at least five years -

(i) audit schedules;

(ii) quality inspection and audit reports;

(iii) responses to findings;

(iv) corrective-action reports;

(v) follow-up and closure reports; and

(vi) management evaluation reports.

(2) Where an operator decides to sub-contract out operationally significant activities to external agencies for the provision of services, the QA programme must include an examination of such sub-contractors to ensure that the standard of service and product provided, meets with regulatory standards while safety must be ensured.

(3) Operators operating five (5) or less aircraft of the same type category or three (3) or less aircraft of different type categories, may consider the following when establishing a QA programme, provided that the Executive Director may require operators to implement a more advanced QA programme, based on routes and/or frequency operated -

(a) Operators would tailor their quality systems to suit the size and complexity of their operation and allocate resources accordingly.

(b) it may be appropriate to develop a quality assurance programme that employs a checklist. The checklist should have a supporting schedule that requires completion of all checklist items within a specified timescale, together with a statement acknowledging completion of a periodic review by top management. An occasional independent review of the checklist content and achievement of the quality assurance should be undertaken; and

(c) the operator may decide to use internal or external auditors or a combination of the two. In these circumstances it would be acceptable for external specialists and/or qualified organisations to perform the quality audits on behalf of the quality manager. If the independent quality audit function is being conducted by external auditors, the audit schedule should be shown in the relevant documentation.

(4) A QA programme shall include a training programme that provides the following -

(a) for those responsible for managing the quality system, receive training covering at least -

(i) an introduction to the concept of the quality system;

(ii) quality management;

(iii) the concept of quality assurance;

(iv) quality manuals;

(v) audit techniques;

(vi) reporting and recording; and

(vii) the way in which the quality system will function in the organisation;

(b) for those involved in the inspection or audit functions, training covering at least -

(i) an introduction to the concept of the quality system;

(ii) the concept of quality assurance;

(iii) reporting and recording; and

(iv) audit techniques; and

(c) a briefing to the remainder of the employees consisting of background information about the QA programme and their role in maximising safety and efficiency in the organisation. The allocation of time and resources should be governed by the size and complexity of the operation concerned.