BELIZE DEPARTMENT OF CIVIL AVIATION

BELIZE CIVIL AVIATION REGULATIONS
COMMERCIAL AIR TRANSPORT - AEROPLANE
BCAR – OPS 1

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ISSUE AND AMENDMENT SYSTEM

AMENDMENTS TO THIS RULE WILL BE INDICATED BY A VERTICAL BAR IN THE LEFT MARGIN, NEXT TO THE LINE, SECTION, OR FIGURE THAT IS BEING AFFECTED. AN EDITION WILL BE THE REPLACEMENT OF THE WHOLE DOCUMENT BY ANOTHER.

REVISIONS MUST BE RECORDED ON FOOTER OF THIS DOCUMENT, INDICATING THE RESPECTIVE NUMBER AND DATE.

ISSUE AND REVISION RECORD

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Issue 2 Revision 0	01/05/2009	BDCA
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PREAMBLE

The Belize Civil Aviation Regulations BCAR-OPS 1, intend to regulate the needs of commercial air transport. This document has been prepared based on Annex 6 Part I of the ICAO, the standard adheres both in its wording and in its content in a large percentage to annex mentioned. In its elaboration, a strict, rigorous**,** and systematic methodology has been followed that allows to always establish controls on adherence to the base document, as well as in cases where Regulations or Acceptable Means of Compliance (AMCAMC) are incorporated, which do not appear in the document of reference, so there is the certainty that the regulation is safe and controlled by the Belize Department of Civil Aviation.

BCAR OPS 1 "Commercial Air Transport (Airplanes)", was updated and modified all Sections 1 and Sections 2; were based on amendments, 33-A, 33-B, 34, 35, 36, 37-A, 37-B, 38, 39, 40-A, 40-B, 40-C, 41, 42, 43, 44, 45, 46, 47 and amendment 48 of Annex 6, part I, of the International Civil Aviation Organization (ICAO).

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SECTION 1. REQUIREMENTS

PRESENTATION AND GENERAL INTRODUCTION

Presentation

1.1 Section one of the Belize Civil Aviation Regulation – BCAR - OPS 1, is presented on loose pages made up of one column.

1.2 The text in section 1 is written using Arial font 11. Explanatory notes are not considered requirements; if they exist, they will be written in Arial font 9.

General Introduction

2.1 Section 1 contains the requirements for the application of the regulation for certification and maintenance of operating obligations and to comply with the certification requirements and surveillance of the operational aviation safety activity established by the International Civil Aviation Organization for the signatory States of the Chicago Convention and its Annexes.

2.2 This document is also based on Annex 6, Part I, and its latest Amendments 46, 47 and 48.

SUBPART A - APPLICABILITY

BCAR-OPS 1.001 Applicability

(a) BCAR-OPS 1 prescribes the requirements applicable to the operation of all civil aeroplanes for commercial air transport by any operator whose principal place of business is in the State of Belize.

(b) BCAR OPS 1 applies to the operation of aeroplane with a maximum take-off weight of more than 5,700 kg or a seating configuration greater than 19 passenger seats and to all multi-engine turbo jet aeroplanes (turbine or propeller aeroplanes) of commercial operation involving the transport of passengers, cargo, or mail, in the national territory of Belize.

(c) The aeroplane of foreign operators operating commercially, passengers, cargo and mail in the national territory of Belize must comply with the international standard, as well as with what is established in Subparts K and L of this BCAR OPS 1, as well as with what established in BCAR-119.70.

(d) BCAR OPS 1: is not applicable to

(1) Aeroplane used in military, customs, police service, and general State services;
(2) Parachutes dropping, firefighting, or aerial work activity flights, or their associated roundtrip flights, provided the persons on board are directly related to this type of flight;
(3) Operations subject to an Operating Certificate (OC).

(e) In Annex 1 to BCAR OPS 1, the requirements of section 1 are established for operators with propeller-driven aeroplane with an approved seating configuration for 19 passengers or less, or with a maximum take-off weight of 5,700 Kg or less. The requirements that are not listed in Annex 1 must be applied as established in section 1 of this BCAR OPS 1. (See annex 1 to BCAR OPS Section 1)

(f) In the event of joint technical evaluations, the activities must be carried out by the Belize Department of Civil Aviation, in accordance with the provisions of this BCAR OPS 1 and shall be performed by a joint team.

BCAR-OPS 1.003 Definitions and abbreviations

(See AMC OPS 1.003)

Definitions:

When the following terms appear in these rules and methods recommended for the aeroplane operation and international commercial air transport operation, they will have the following meaning:

Accelerate-Stop Distance Available (ASDA). The length of the take-off run available plus the length of the stop way, if a stop way is provided.

Acclimated. A condition in which a flight crew member has been in a "theatre" for 72 hours or has been given at least 36 consecutive hours free from duty.

Advanced aircraft. An aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

Aerial work. An aircraft operation in which an aircraft is used for specialized services such as external load, agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

Aerodrome. A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Aerodrome operating minima. the limits of usability of an aerodrome for:

a) Take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions;

b) Landing in 2D instrument approach operations, expressed in terms of visibility and/or runway visual range; minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions; and

c) Landing in 3D instrument approach operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) appropriate to the type and/or category of the operation.

Aerodrome RFFS category. The RFFS category for a given aerodrome, as published in the appropriate Aeronautical Information Publication (AIP)

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

Aeroplane RFFS category. The category derived from Annex 14 , Volume I, Table 9-1 for a given aeroplane type.

Agreement summary. When an aircraft is operating under an article 83 bis agreement between the State of Registry and another State, the agreement summary is a document transmitted with the Article 83 bis Agreement registered with the ICAO Council that identifies succinctly and clearly which functions and duties are transferred by the State of Registry to that other State.

Air operator certificate (AOC). A certificate authorizing The Operator to carry out specified commercial air transport operations.

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

Aircraft operating manual. A manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aeroplane.

Note. The aeroplane operating manual is part of the operations manual.

Aircraft tracking. A process, established by the operator, that maintains and updates, at standardized intervals, a ground-based record of the four-dimension position of individual aircraft in flight.

Air traffic service (ATS). A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

Airport/standby reserve. A defined duty period during which a flight crew member is required by an AOC holder to be at an airport for a possible assignment.

Airworthy. The status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

Alternate aerodrome. An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land the aerodrome of intended landing where the necessary facilities and services are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate aerodromes include the following:

Take-off alternate. An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off if it is not possible to use the aerodrome of departure.

En-route alternate. An alternate aerodrome at which an aircraft would be able to land if a deviation is necessary while en-route.

Destination alternate. An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

Note. —The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.

Altimetry system error (ASE). The difference between the altitude indicated by the altimeter display assuming a correct altimeter barometric setting and the pressure altitude corresponding to the undisturbed ambient pressure.

Appropriate airworthiness requirements. The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.

Approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

Approval Actions. The term "approval" indicates a more formal action on the part of the State with respect to a certification matter than does the term "acceptance". Some States require the Director of the Civil Aviation Authority (CAA) or a designated lower-level CAA official to issue a formal written instrument for every "approval" action taken. Other States allow a variety of documents to be issued as evidence of an approval. The approval document issued and the matter addressed by the approval will depend on the delegated authority of the official. In such States, authority to sign routine approvals, such as operator minimum equipment lists for specific aircraft, is delegated to technical inspectors. More complex or significant approvals are normally issued by higher-level officials.

Approval (Dangerous goods). An authorization issued by the BDCA, for the transport of dangerous goods as specified in the Technical Instructions.

Area navigation (RNAV). A method of navigation that permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note. Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

Augmented flight crew. A flight crew that has more than the minimum number of flight crew members required by the aeroplane type certificate to operate the aeroplane to allow a flight crew member to be replaced by another qualified flight crew member for in-flight rest.

Authorizations. An authorization entitles an operator, owner or pilot-in-command to undertake the authorized operations. Authorizations can take the form of specific approvals, approvals or acceptances.

Basic aircraft. An aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

BDCA. It is the acronym for Belize Department of Civil Aviation.

Cabin crew member. A crew member who performs, in the interest of the safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.

Calendar day: 24 hours from 00:00 through 23:59 using Coordinated Universal Time or local time.

Cargo. Any property carried on an aircraft other than mail, stores and accompanied or mishandled baggage.

Cargo aeroplane. Any aeroplane which is carrying goods or property but not passengers. In this context, the following are not considered to be passengers:

(i) A crew member;

(ii) The Operator's employee permitted by, and carried in accordance with, the instructions contained in the Operations Manual;

(iii) An authorized representative of an Authority; or

(iv) A person with duties in respect of a particular shipment on board.

Certificate holder (AOC holder). A person who holds or is required to hold an Air Operator Certificate (AOC) issued under Subpart C of BCAR-OPS 1.

Circling. The visual phase of an instrument approach to bring an aeroplane into position for landing on a runway, which is not suitably located for a straight-in approach.

Classification of passengers.

(1) Adults, male and female, are defined as persons of the age of 12 years and above.

(2) Children are defined as persons of the age of two years and above but who are less than 12 years of age.

(3) Infants are defined as persons who are less than 2 years of age.

COMAT. Operator material carried on an operator's aircraft for the operator's own purposes.

Combined vision system (CVS). A system to display images from a combination of an enhanced vision system (EVS) and a synthetic vision system (SVS).

Commercial air transport operation. An aircraft operation involving the transport of passengers, cargo, and mail for remuneration or hire.

Configuration deviation list (CDL). A list established by the organization responsible for the type design of an aeroplane with the approval of the State of Design which identifies any external parts of a type of aircraft which may be missing at the commencement of a flight, and which contains, where necessary, any information on associated operating limitations and performance correction.

Contaminated runway. A runway is contaminated when a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed in the runway surface condition descriptors.

(i) Surface water more than 3 mm (0.125 in) deep, or by slush, equivalent to more than 3 mm (0.125 in) of water;

Contingency fuel. The fuel required to compensate for unforeseen factors, which could have an influence on the fuel consumption to the destination aerodrome such as deviations of an individual aeroplane from the expected fuel consumption data, deviations from forecast meteorological conditions, and deviations from planned routings and/or cruising levels/altitudes.

Continuing airworthiness. The set of processes to ensure that an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.

Continuing airworthiness records. Records which are related to the continuing airworthiness status of an aircraft, engine, propeller or associated part.

Continuous descent final approach (CDFA). A technique, consistent with stabilized approach procedures, for flying the final approach segment (FAS) of an instrument non-precision approach (NPA) procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre begins for the type of aircraft flown; for the FAS of an NPA procedure followed by a circling approach, the CDFA technique applies until circling approach minima (circling OCA/H) or visual flight manoeuvre altitude/height are reached.

Controlling RVR. The reported values of one or more RVR reporting locations (touchdown, mid-point and stop-end) used to determine whether operating minima are met. Where RVR is used, the controlling RVR is the touchdown RVR, unless otherwise specified by State criteria.

Crew member. A person assigned by The Operator to duty on an aircraft during a flight duty period.

Critical phase of flight. The critical phases of flight are the take-off run, the take-off flight path, the final approach, the missed approach, the landing, including the landing roll, climb and descent below 10 000 ft. over the ground level and any other phases of flight as determined by the pilot-in-command.

Cruise relief pilot. A flight crew member who is assigned to perform pilot tasks during cruise flight, to allow the pilot-in-command or a co-pilot to obtain planned rest.

Cruising level. A level maintained during a significant portion of a flight.

Damp runway. A runway is considered damp when the surface is not dry, but when the moisture on it does not give it a shiny appearance.

Dangerous goods. Articles or substances which are capable of posing a significant risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions, or which are classified according to those instructions.

Note. Dangerous goods are classified in the appropriate regulation.

Dangerous goods acceptance checklist. A document used to assist in carrying out a check on the external appearance of packages of dangerous goods and their associated documents to determine that all appropriate requirements have been met.

Dangerous goods accident. An occurrence associated with and related to the transport of dangerous goods which results in fatal or serious injury to a person or major property damage.

Dangerous goods handling manual. A document submitted by the operator for approval or acceptance by the BDCA, which contains procedures, methods and techniques to appropriately receive, stow, report, store, inspect, train and keep files, in relation to all dangerous goods transported by air.

Dangerous goods incident. An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods, not necessarily occurring on board an aeroplane, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods, which seriously jeopardizes the aeroplane or its occupants, is also deemed to constitute a dangerous goods incident.

Dangerous goods transport document. A document specified in the technical instructions. The person who offers dangerous goods for transport by air shall complete a dangerous goods transport document, which shall contain the information on these dangerous goods. Transport document shall bear a signed declaration indicating that the dangerous goods are fully and accurately described by their proper shipping names and UN/ID numbers and that they are classified, packed, marked, labelled, and in proper condition for transport.

Deadhead transportation. Transportation of a flight crew member as a passenger or non-operating flight crew member, by any mode of transportation, as required by an AOC holder, excluding transportation to or from a suitable accommodation. All time spent in deadhead transportation is duty and is not rest. For purposes of determining the maximum flight duty period in Table B of this Subpart, deadhead transportation is not considered a flight segment.

Decision altitude (DA) or decision height (DH). A specified altitude or height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.

The required visual reference means that section of the visual aids or of the approach area, which should have been in view for sufficient time for the pilot to have assessed the aeroplane position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual reference is that specified for the procedure and operation.

For convenience where both expressions are used they may be written in the form “decision altitude/height” and abbreviated “DA/H”.

Dry operating weight. The total weight of the aeroplane ready for a specific type of operation but excluding usable fuel and traffic load. This weight includes elements such as:

a. Crew members and their baggage;

b. Catering and removable passenger service equipment; and

c. Drinking water and lavatory chemicals.

Dry runway. A runway is considered dry if its surface is free of visible moisture and not contaminated within the area intended to be used.

Duty. Any task that flight or cabin crew members are required by the operator to perform, including, for example, flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue.

Duty period. A period which starts when a flight or cabin crew member is required by an Operator to report for or to commence a duty and ends when that person is free from all duties.

EDTO critical fuel. The fuel quantity necessary to fly to an en-route alternate aerodrome considering, at the most critical point on the route, the most limiting system failure.

Note. Guidance on EDTO critical fuel scenarios is provided in AMC OPS 1.246 and Annex 2 of Section 2.

EDTO significant system. An aeroplane system whose failure or degradation could adversely affect the safety particular to an EDTO flight, or whose continued functioning is specifically important to the safe flight and landing of an aeroplane during an EDTO diversion.

Electronic flight bag (EFB). An electronic information system comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties.

Emergency locator transmitter (ELT). A generic term describing equipment which broadcast distinctive signals on designated frequencies and~~,~~ depending on application, may be automatically activated by impact or be manually activated. An ELT may be any of the following:

Automatic fixed ELT [ELT (AF)]. An automatically activated ELT, which is permanently attached to an aircraft.

Automatic portable ELT [ELT (AP)]. An automatically activated ELT, which is rigidly attached to an aeroplane but readily removable from the aircraft.

Automatic deployable ELT [ELT (AD)]. An ELT which is rigidly attached to an aircraft and which is automatically deployed and activated by impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided.

Survival ELT (ELT(S). An ELT which is removable from an aeroplane, stowed to facilitate its ready use in an emergency, and manually activated by -survivors.

Engine. A unit used or intended to be used for aircraft propulsion. It consists of at least those components and equipment necessary for functioning and control, but excludes the propeller/rotors (if applicable).

Enhanced vision system (EVS): means a system to display electronic real-time images of the external scene achieved using imaging sensors.

Note. *The EVS does not include night vision imaging systems (NVIS).*

Equivalent Position: A position that can be established by means of a DME distance, a suitably located NDB or VOR, SRE or PAR fix or any other suitable fix between 3 and 5 miles from threshold that independently establishes the position of the aeroplane.

Exception (Dangerous goods). Any provision in the technical instructions which excludes a specific item of dangerous goods from the requirements normally applicable to that item and which must be authorized by the BDCA.

Extended diversion time operation (EDTO). Any flight by an aeroplane with two or more turbine engines, where the diversion time to an en-route alternate aerodrome is greater than the threshold time established by the State of the Operator.

Fail-operational flight control system. A flight control system is fail-operational if, in the event of a failure below alert height, the approach, flare and landing, can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system.

Fail-operational hybrid landing system. A system, which consists of a primary fail-passive automatic landing system and a secondary independent guidance system enabling the pilot to complete a landing manually after failure of the primary system. A typical secondary independent guidance system consists of a monitored head-up display providing guidance, which normally takes the form of command information, but it may alternatively be situation (or deviation) information.

Fail-passive flight control system. A flight control system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but the landing is not completed automatically. For a fail-passive automatic flight control system the pilot assumes control of the aeroplane after a failure.

Fatigue. A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload (mental and/or physical activity), that can impair a crew member's alertness and ability to safely operate an aeroplane or perform safety-related duties.

Fatigue Risk Management System (FRMS). A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.

Final approach segment (FAS). That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

Fit for duty. A person physiologically and mentally prepared and capable of performing assigned duties at the highest degree of safety.

Flight control system. A system which includes an automatic landing system and/or a hybrid landing system.

Flight crew member. A licensed member charged in duties essential to the operation of an aircraft during a flight duty period.

Flight data analysis. A process of analysing recorded flight data ~~in order~~ to improve the safety of the flight operations.

Flight duty period (FDP). A period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which he/she is a crew member.

Flight manual. A manual, associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

Flight operations officer/flight dispatcher. A person designated by the operator to engage in the control and supervision of flight operations, licensed, suitably qualified in accordance with the corresponding licencing regulation, who supports, briefs and/or assists the pilot-in-command in the safe conduct of the flight.

Flight plan. Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight recorder. Any type of recorder installed in the aircraft for the purpose of complementing accident incident investigation.

Flight safety documents system. A set of interrelated documentation established by the operator, compiling, and organising information necessary for flight and ground operations, and comprising, as a minimum, the operations manual and the operator's maintenance control manual.

Flight simulation training device. Any one of the following three types of apparatus in which flight conditions are simulated on the ground:

A flight simulator, which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aeroplane systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated;

A flight procedures trainer, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aeroplane systems, and the performance and flight characteristics of aircraft of a particular class;

A basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aeroplane in flight in instrument flight conditions.

Flight time - aeroplanes. The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.

'Flight time' as here defined is synonymous with the term 'block to block' time or 'chock to chock' time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.

Freight container. A freight container is an article of transport equipment for radioactive materials, designed to facilitate the transport of such materials, either packaged or unpackaged, by one or more modes of transport. See the definition of unit load device where the dangerous goods are not radioactive materials.

General aviation operation. An aircraft operation other than a commercial air transport operation of an aerial work operation.

Ground handling. Services necessary for an aeroplane's arrival at, and departure from, an airport and not including air traffic services.

Handling agent. An agency which performs on behalf of the operator some or all of the latter's functions including receiving, loading, unloading, transferring or other processing of passengers or cargo.

Head-up display. A system of presenting visual flight information in the pilot's external forward field of view.

Home base. The location, assigned by the AOC holder, from where the FCM normally starts and ends his/her duty periods.

Human factors principles. Principles which apply to aeronautical design, certification, training, operations, and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

Human performance. Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

IATA Dangerous Goods Regulations. Document equivalent to the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284–AN/905)

ID number. A temporary identification number for an item of dangerous goods which has not been assigned a UN number.

Instrument approach operations. Approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for conducting instrument approach operations:

(a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

(b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Lateral and vertical navigation guidance refers to the guidance provided either by:

(a) a ground-based radio navigation aid; or

(b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

Instrument approach procedure (IAP). A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which

holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

Non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A.

Note. Non-precision approach procedures may be flown using a continuous descent final approach (CDFA) technique. CDFAs with advisory VNAV guidance calculated by on-board equipment are considered 3D instrument approach operations. CDFAs with manual calculation of the required rate of descent are considered 2D instrument approach operations. For more information on CDFAs, refer to PANS-OPS (Doc 8168), Volume I, Part II, Section 5.

Approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

Precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

Instrument meteorological conditions (IMC). Meteorological conditions expressed in terms of visibility distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

The minima specified for visual flight conditions are included in ICAO Annex 2, Chapter 4.

Isolated aerodrome. A destination aerodrome for which there is no destination alternate aerodrome suitable for a given aeroplane type.

Landing distance available (LDA). The length of runway that is declared available and suitable for the ground run of an aeroplane landing.

Large aeroplane. An aeroplane with a maximum certified take-off mass of more than 5 700kg.

Low-visibility operations (LVO). Approach operations in RVRs less than 550 m and/or with a DH less than 60 m (200 ft) or take-off operations in RVRs less than 400 m.

Letter of compliance. Document signed by the Accountable Manager in which the operator through a cross reference shows compliance of the manual system with the applicable regulations.

Line holder. A flight crew member who has an assigned flight duty period and is not acting as a reserve flight crew member.

Long-call reserve. Means that, prior to beginning the rest period required by BCAR OPS 1.1140 the flight crew member is notified by the AOC holder to report for a flight duty period following the completion of the rest period.

Low visibility procedure – LVP. Procedures applied at an aerodrome for the purpose of ensuring safe operations during Category II and III approaches and Low Visibility Take-offs.

Low visibility take-off – LVTO. A take-off where the Runway Visual Range (RVR) is less than 400 m.

Maintenance. The performance of tasks required to ensure the continuing airworthiness of an aircraft including any one or combination of overhaul, inspection, replacement, defect rectification and the embodiment of a modification or repair.

Maintenance organisation's procedures manual. A document endorsed by the head of the maintenance organisation which details the maintenance organisation's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems.

Maintenance programme. A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aircraft to which it applies.

Maintenance release. A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements.

Master minimum equipment list (MMEL). A list established for a particular aircraft type by the organisation responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

Maximum approved passenger seating configuration. The maximum passenger seating capacity of an individual aeroplane, excluding pilot seats or flight deck seats and cabin crew seats as applicable, used by the operator, approved by the Authority and specified in the Operations Manual.

Maximum diversion time. Maximum allowable range, expressed in time, from a point on a route to an en-route alternate aerodrome.

Maximum mass. **Maximum certificated take-off mass(MCTM).** The maximum mass at which the aircraft is certified for take off due to structural or other limits**.**

Maximum structural landing weight. The maximum permissible total aeroplane mass on landing in normal circumstances.

Maximum structural take-off weight. The maximum permissible total aeroplane mass at the start of the take-off run.

Maximum take-off weight. The take-off weight of an aeroplane must consider its weight, including all elements and all persons at the beginning of the take-off run.

Maximum zero fuel weight. The maximum permissible weight of an aeroplane with no usable fuel. The mass of the fuel contained in particular tanks must be included in the zero-fuel mass when it is explicitly mentioned in the AFM.

mSv(millisieverts). The amount of cosmic radiation we receive during flights depends on many things. Two of the most important factors are altitude and length of the flight. If we take a one-way flight across the country, we likely receive 2-5 millirem(mrem), or 0.02-0.05 millisieverts(mSv), of radiation.

Minimum descent altitude (MDA) or minimum descent height (MDH). A specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.

Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.

The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.

For convenience when both expressions are used they may be written in the form “minimum descent altitude/ height” and abbreviated “MDA/H”

Minimum equipment list (MEL). A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

Modification. A change to the type design of an aircraft, engine or propeller.

Note. A modification may also include the embodiment of the modification which is a maintenance task subject to a maintenance release. Further guidance on aircraft maintenance — modification and repair is contained in the Airworthiness Manual (Doc 9760)

Navigation specification. A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

Required navigation performance (RNP) specification. A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

Area navigation (RNAV) specification. A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

The Performance-based Navigation (PBN) Manual (Doc 9613), Volume II, contains detailed guidance on navigation specifications.

The term RNP, previously defined as "a statement of the navigation performance necessary for operation within a defined airspace", has been removed from this BCAR OPS 1 as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this BCAR OPS 1 is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in Doc 9613.

Night. The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the appropriate authority.

Note. Civil twilight ends in the evening when the centre of the sun's disc is 6 degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon.

Non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A.

Non-precision approach procedures may be flown using a continuous descent final approach (CDFA) technique. CDFAs with advisory VNAV guidance calculated by on-board equipment (see PANS-OPS (Doc 8168), Volume I, Part I, Section 4, Chapter 1, paragraph 1.8.1) are considered 3D instrument approach operations. CDFAs with manual calculation of the required rate of descent are considered 2D instrument approach operations. For more information on CDFAs, refer to PANS-OPS (Doc 8168), Volume I, Part I, Section 4, Chapter 1, 1.7 and 1.8.

Non-precision approach and landing operations. An instrument approach and landing which utilises lateral guidance but does not utilise vertical guidance.

Obstacle clearance altitude (OCA) or obstacle clearance height (OCH). The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable used in establishing compliance with appropriate obstacle clearance criteria.

Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision
approach procedures to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft.) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.

For convenience when both expressions are used they may be written in the form “obstacle clearance altitude/ height” and abbreviated “OCA/H”.

Operational control. The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

Operational credit. A credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure.

Operational flight plan. The operator's plan for the safe conduct of the flight based on considerations of aeroplane performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

Operations manual. A manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties.

Operations specifications. The authorisations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual

Operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Operator’s maintenance control manual. A document which describes the operator’s procedures necessary to ensure that all scheduled and unscheduled maintenance is performed on the operator’s aircraft on time and in a controlled and satisfactory manner.

Overpack. An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage. Unit load devices are not included in this definition.

Package. The complete product of the packing operation consisting of the packaging and its contents prepared for transport.

Packaging. Receptacles and any other components or materials necessary for the receptacle to perform its containment function and to ensure compliance with the packing requirements

Packing. The art and operation by which articles or substances are enveloped in wrappings and/or enclosed in packagings or otherwise secured.

Performance. In the case of this regulation, performance is understood as aeroplane performance.

Performance-based aerodrome operating minimum (PBAOM). A lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft.

The PBAOM is derived by considering the combined capabilities of the aircraft and available ground facilities. Additional guidance material on PBAOM may be found in the Manual of All-Weather Operations (Doc 9365).

PBAOM may be based on operational credits.

PBAOM are not limited to PBN operations.

Performance-based communication (PBC). Communication based on performance specifications applied to the provision of air traffic services.

An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability, and functionality needed for the proposed operation in the context of a particular airspace concept.

Performance-based surveillance (PBS). Surveillance based on performance specifications applied to the provision of air traffic services.

An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

Physiological night's rest. 10 hours of rest that encompasses the hours of 0100 and 0700 at the flight crew member's home base~~,~~ unless the individual has acclimated to a different theatre. If the flight crew member has acclimated to a different theatre, the rest must encompass the hours of 0100 and 0700 at the acclimated location.

Pilot-in-command. The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

Point of no return. The last possible geographic point at which an aircraft can proceed to the destination aerodrome as well as to an available en-route alternate aerodrome for a given flight.

Precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

Refer to BCAR-OPS 1.445 for instrument approach operation types.

Precision approach and landing operation. An instrument approach and landing using precision lateral and vertical guidance with minima as determined by the category of operation.

Pressure-altitude. An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the standard atmosphere.

Proper shipping name. The name to be used to describe a particular article or substance in all shipping documents and notifications and, where appropriate, on packaging.

Psychoactive substances. Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

Repair. The restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements, after it has been damaged or subjected to wear.

Reporting time. The time at which a crew member is required by a holder of an AOC to report for duty.

Required communication performance (RCP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

Required surveillance performance (RSP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.

Required communication performance type. (RCP type) A label (e.g., RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability, and integrity.

Reserve availability. A duty period during which an AOC holder requires a flight crew member on short call reserve to be available to receive an assignment for a flight duty period.

Reserve flight crew member. means a flight crew member who an AOC holder requires to be available to receive an assignment for duty.

Rest facility. A bunk or seat accommodation installed in an aeroplane that provides a flight crew member with a sleep opportunity.

Class 1 rest facility

A bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature-controlled, allows the flight crew member to control light, and provides isolation from noise and disturbance.

Class 2 rest facility

A seat in an aeroplane cabin that allows for a flat or near flat sleeping position; it is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation; and it is reasonably free from disturbance by passengers or flight crew members.

Class 3 rest facility

A seat in an aeroplane cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

Rest period. A continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties.

Runway visual range (RVR). The range over which the pilot of an aeroplane on the centre line of the runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

Safe forced landing. Unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies, and procedures.

Scheduled. means to appoint, assign, or designate for a fixed time.

Serious injury. An injury which is sustained by a person in an accident and which:

(i) requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received; or

(ii) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); or

(iii) involves lacerations which cause severe haemorrhage, nerve, muscle, or tendon damage; or

(iv) involves injury to any internal organ; or

(v) involves second or third-degree burns, or any burns affecting more than 5% of the body surface; or

(vi) involves verified exposure to infectious substances or injurious radiation.

Separate runways. Runways at the same aerodrome that are separate landing surfaces. These runways may overlay or cross in such a way that if one of the runways is blocked, it will not prevent the planned type of operations on the other runway. Each runway shall have a separate approach procedure based on a separate navigation aid.

Shipper. A person that delivers goods on behalf of an organisation or his/her own.

Short-call reserve. A period of time in which a flight crew member is assigned to a reserve availability period.

Small aeroplane. An aeroplane of a maximum certificated take-off mass of 5 700 kg or less.

Specific approval. An approval which is documented in the operations specifications for commercial air transport operations or in the list of specific approvals for general aviation operations. The term “specific approval” indicates a formal action on the part of the State of the Operator which results in an addition to the operations specification.

Split duty A flight duty period that has a scheduled break in duty that is less than a required rest period.

State of origin (dangerous goods). The Authority in whose territory the dangerous goods were first loaded on an aeroplane.

State of registry. The state on whose register the aircraft is entered.

In the case of the registration of aeroplane of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations, which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aeroplane Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).

State of the aerodrome. The state in whose territory the aerodrome is located.

State of the operator. The state in which the operator’s principal place of business is located or if there is no such a place of business, the operator’s permanent residence.

State safety programme. An integrated set of rules, regulations, procedures and activities aimed at improving safety.

Suitable accommodation. An individual temperature-controlled facility with sound mitigation and the ability to control the light that provides a flight crew member with the ability to sleep either in a bed, bunk or in a chair that allows for flat or near flat sleeping position. Suitable accommodation only applies to ground facilities and does not apply to aeroplane onboard rest facilities.

Synthetic vision system (SVS). A system to display data-derived synthetic images of the external scene from the perspective of the flight deck.

Take-off distance available (TODA). The length of the take-off run available plus the length of the clearway.

Take-off run available (TORA). The length of runway which is declared available by the appropriate Authority and suitable for the ground run of an aeroplane taking off.

Target level of safety (TLS). A generic term representing the level of risk which is considered acceptable in particular circumstances.

Technical instructions. The latest edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284–AN/905), including the Supplement and any Addendum, approved and published by decision of the Council of the International Civil Aviation Organisation.

Temporary downgrade. RFFS category as notified, including by NOTAM, and resulting from the downgrade of the level of RFFS protection available at an aerodrome.

Theatre. means a geographical area in which the distance between the flight crew member's flight duty period departure point, and arrival point differs by no more than 60 degrees longitude.

Threshold time. The range, expressed in time, established by the State of the Operator, to an en-route alternate aerodrome, whereby any time beyond requires a specific approval for EDTO from the State of the Operator.

Total vertical error (TVE). The vertical geometric difference between the actual pressure altitude flown by an aircraft and its assigned pressure altitude (flight level).

Traffic load. The total weight of passengers, baggage, and cargo, including any non-revenue load.

UN number. The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances.

Unforeseen factors. Those factors which could have an influence on the fuel consumption to the destination aerodrome, such as deviations of an individual aeroplane from the expected fuel consumption data, deviations from forecast meteorological conditions, extended delays, and deviations from planned routings and/or cruising levels.

Unforeseen operational circumstance. Unplanned event of insufficient duration to allow for adjustments to schedules, including unforecast weather, equipment malfunction, or air traffic delay that is not reasonably expected. It includes unforecast weather, equipment malfunction, or air traffic delay that is not reasonably expected.

Unit load device (ULD). Any type of freight container, aeroplane container, aeroplane pallet with a net, or aeroplane pallet with a net over an igloo. An overpack is not included in this definition. For a container that contains radioactive materials.

Visual approach. An approach when either part or all of an instrument approach procedure is not completed and the approach is executed with visual reference to the terrain.

Visual meteorological conditions (VMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal or to better than specified minima.

The minima specified are included in ICAO Annex 2, Chapter 4.

Window of circadian low. A period of maximum sleepiness that occurs between 0200 and 0559 during a physiological night.

Wet runway. The runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use.

Abbreviations:

AC	Alternating current
ACAS	Airborne collision avoidance system
ADRS	Aeroplane data recording system
ADS	Automatic dependent surveillance
ADS-C	Automatic dependent surveillance — contract
AEO	All engines operating
AFCS	Automatic flight control system
AGA	Aerodromes, air routes, and ground aids
AIG	Accident investigation and prevention
AIR	Airborne image recorder
AIRS	Airborne image recording system
AOC	Air operator certificate
APU	Auxiliary power unit
ARINC	Aeronautical Radio, Inc.
ASDA	Accelerate-stop distance available
ASE	Altimetry system error
ASIA/PAC	Asia/Pacific
ATC	Air traffic control
ATM	Air traffic management
ATN	Aeronautical telecommunication network
ATS	Air traffic services
BDCA	Belize Department of Civil Aviation
CARS	Cockpit Audio Recording System
CAS	Calibrated Air Speed
CAT I	Category I
CAT II	Category II
CAT III	Category III
CDL	Configuration deviation list
CFIT	Controlled flight into terrain
cm	Centimetre

COMAT	Company material
CPDLC	Controller-pilot data link communications
CVR	Cockpit voice recorder
CVS	Combined vision system
DA	Decision altitude
DA/H	Decision altitude/height
DC	Direct current
D-FIS	Data link flight information service
DH	Decision height
DLR	Data link recorder
DLRS	Data link recording system
DME	Distance measuring equipment
DSTRK	Desired track
EBT	Evidence Based Training
EDTO	Extended diversion time operation
EFB	Electronic flight bag
EFIS	Electronic flight instrument system
EGT	Exhaust gas temperature
ELT	Emergency locator transmitter
ELT (AD)	Automatic deployable ELT
ELT (AF)	Automatic fixed ELT
ELT (AP)	Automatic portable ELT
ELT (S)	Survival ELT
EOSID.	Engine Out Standard Instrument Departure.
EPR	Engine pressure ratio
EUROCAE	European Organisation for Civil Aviation Equipment
EVS	Enhanced vision system
FANS	Future air navigation system
FDAP	Flight data analysis programme
FDR	Flight data recorder
FL	Flight level
FM	Frequency modulation
Ft	Foot
ft./min	Foot per minute
g	Normal acceleration of gravity
GCAS	Ground collision avoidance system
GNSS	Global navigation satellite system
GPWS	Ground proximity warning system
hPa	Hectopascal
HUD	Head up display

IFR	Instrument flight rules
ILS	Instrument landing system
IMC	Instrument meteorological conditions
In-hg	Inch of mercury
INS	Inertial navigation system
ISA	International standard atmosphere
Kg	kilogram
kg/m²	kilogram per metre squared
km	kilometre
km/h	kilometre per hour
kt	Knot
kt/s	knots per second
lb	pound
lbf	Pound-force
LDA	Landing distance available
LED	Light-emitting diode
M	Metre
mb	Millibar
MDA	Minimum descent altitude
MDA/H	Minimum descent altitude/height
MDH	Minimum descent height
MEL	Minimum equipment list
MHz	Megahertz
MLS	Microwave landing system
MMEL	Master minimum equipment list
MNPS	Minimum navigation performance specification
MOPS	Minimum operational performance specification
MPD	Maintenance Planning Document
MRBR	Maintenance Review Board Report
m/s	Metres per second
m/s²	Metres per second squared
N	Newton
N1	Low-pressure compressor speed (two-stage compressor); fan speed (three-stage compressor)
N2	High-pressure compressor speed (two-stage compressor); intermediate pressure compressor speed (three-stage compressor)
N3	High pressure compressor speed (three-stage compressor)
NAV	Navigation
NM	Nautical mile
NVIS	Night vision imaging system

OCA	Obstacle clearance altitude
OCA/H	Obstacle clearance altitude/height
OCFDC	Operational control flight dispatch centre
OCH	Obstacle clearance height
OEI	One engine inoperative
OCL	Obstacle Clearance Limit
PANS	Procedures for Air Navigation Services
PBN	Performance-based navigation
RCP	Required communication performance
RFFS	Rescue and Fire Fighting Service
RNAV	Area navigation
RNP	Required navigation performance
ROAAS	Runway overrun awareness and alerting systems
RTCA	Radio Technical Commission for Aeronautics
RVR	Runway visual range
RVSM	Reduced vertical separation minimum
SOP	Standard operating procedures
SST	Supersonic transport
STOL	Short take-off and landing
SVS	Synthetic vision system
TAS	True airspeed
TAWS	Terrain awareness warning system
TCAS	Traffic alert and collision avoidance system
TLA	Thrust lever angle
TLS	Target level of safety
TVE	Total vertical error
UTC	Coordinated universal time
V_D	Design diving speed
VFR	Visual flight rules
VMC	Visual meteorological conditions
V_{MC}	Minimum control speed with the critical engine inoperative
VOR	VHF omnidirectional radio range
V_{S0}	Stalling speed or the minimum steady flight speed in the landing configuration
V_{S1}	Stalling speed or the minimum steady flight speed in a specified configuration
VTOL	Vertical take-off and landing
WXR	Weather

*S*ymbols

°C	Degrees Celsius
%	Per cent

SUBPART B - GENERAL

BCAR-OPS 1.005 General

(See Annex 1 to BCAR OPS 1 Section 1)

(a) The Operator shall not operate an aeroplane for the purpose of commercial air transportation other than in accordance with BCAR-OPS 1. For operations of Performance Class B aeroplanes, alleviated requirements can be found in Annex 1 to BCAR OPS 1, Section 1;

(b) The Operator shall comply with the requirements in the corresponding BCAR OPS 1regarding additional airworthiness requirements applicable to aeroplanes operated for the purpose of commercial air transportation. The aviation provisions of the Member States of the BCAR System related to this matter shall be applied.

(c) Each aeroplane shall be operated in compliance with the terms of its Certificate of Airworthiness, Type Certificate and within the approved limitations contained in the Aeroplane Flight Manual (AFM).

(d) All Synthetic Training Devices (STD), such as Flight Simulators or Flight Training Devices (FSTD), replacing an aeroplane for training and/or proficiency checks purposes must be previously approved and/or accepted by the BDCA for the exercises to be conducted.

BCAR –OPS 1.007 Effectiveness

Existing operators shall be ruled by the national regulation in force on this matter, until the effective date established in paragraph (a) below:

(a) This BCAR-OPS 1 will enter into force:

(1) For operators with a valid approval or those approval requests made before the date of publication of this BCAR, six (6) months after that approval, or

(2) For new approval requests made by air operators or modifications to an existing approval since the official publication date of this BCAR.

(b) Transitional provisions

(1) Fatigue Risk Management System provisions established in BCAR OPS 1.1095 shall be mandatory as of January 2024.

(2) BCAR OPS 1.1100 section on the fatigue education and awareness training programme shall be applicable as of January 2024.

BCAR-OPS 1.010 Exemptions

(See AMC OPS 1.010)

(a) The BDCA may exceptionally and temporarily grant an exemption from the provisions of BCAR-OPS 1 for domestic operations only, provided that the need for such an exemption is proven and it is in compliance with any additional conditions that the BDCA may deem necessary to ensure an acceptable level of safety in each particular case.

(b) Exemptions granted by the BDCA in accordance with paragraph (a) above shall be included in the AOC attachment on Operations Specifications and Limitations, as well as in the Operations Manual.

(c) Before an exemption is granted, the operator must submit a risk assessment to the BDCA which will be analysed and accepted by the State Safety Programme (SSP).

BCAR-OPS 1.015 Operational directives

(See AMC OPS 1.015)

(a) The BDCA may direct by means of an Operational Directive that an operation shall be prohibited, limited or subject to certain conditions, in the interests of safe operations.

(b) The operational directives state:

(1) The reason for the issue;

(2) Applicability and duration; and

(3) Action required by the operator(s).

(c) Any requirement from an Operational Directive will be considered an additional requirement to the ones established in this BCAR-OPS 1.

BCAR-OPS 1.020 Laws, regulations and procedures – Operator's responsibilities

a) The operator shall ensure that:

(1) All flight crew members are made aware that they shall comply with the laws, regulations and procedures of those States in which operations are conducted and which are pertinent to the performance of their duties prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto. In addition, the operator shall ensure that other members of the flight crew are familiar with such of these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aeroplane. (See AMC OPS 1.020 a) (1)).

(2) All employees are familiar with the laws, regulations of those States in which operations are conducted and pertinent to the performance of their duties.

(3) A designated representative is responsible for the operational control.

(4) Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher if The Operator's approved method of control and supervision of flight operations requires the use of flight operations personnel/flight dispatcher personnel. (See AMC OPS 1.020 a) (4)).

(5) If an emergency situation, which endangers the safety of the aeroplane or persons becomes known first to the flight operations officer/flight dispatcher, action by that person in accordance with BCAR OPS 1.195 shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.

(6) If an emergency situation, which endangers the safety of the aeroplane or persons necessitates the taking of action which involves a violation of local regulations or procedures, the pilot-in-command shall notify this occurrence to the appropriate local authority without delay. If required by the State in which the incident occurs, the pilot-in-command shall submit a report on any such violation to the appropriate authority of such State; in that event, the pilot-in-command shall also submit a report to the State of the Operator. Such reports shall be submitted within a ten (10) day period.

BCAR-OPS 1.025 Common language

(a) The Operator must ensure that all crew members can communicate in a common language and in the official language used in radiotelephony communication, or in English.

(b) The Operator must ensure that all operations personnel are able to understand the language in which those parts of the Operations Manual which pertain to their duties and responsibilities are written.

BCAR-OPS 1.030 Minimum equipment lists – Operator's responsibilities

(See AMC OPS 1.030)

(a) The Operator shall establish, for each aeroplane, a Minimum Equipment List (MEL) and procedures for its use and they shall be approved by the BDCA..

(b) The MEL shall be based on the Master Minimum Equipment List (MMEL) and it shall not be less restrictive than the MMEL issued by the State that approved the type certificate. The MEL shall also be accepted by the BDCA.

(c) The operator shall not operate an aeroplane with inoperative instruments or equipment if it is not in accordance with MEL, unless it has received the approval of the BDCA.

(d) The operator shall state that the pilot in command has the authority, in accordance with the procedures established, to make the final decision of carrying out the operation with differed instruments and equipment according to MEL.

(e) The operator shall establish, in the procedures of the MEL, instructions for the management of the crew workload with differed multiple instruments and equipment in accordance with the MEL, limiting the number of differed items, systems or a combination of both.

(f) When the State of the Operator is different from the State of Registry, the former shall ensure that the MEL does not affect compliance with the airworthiness requirements applicable in the latter.

BCAR-OPS 1.035 Quality system

(See AMC OPS to BCAR OPS 1.035(AMC))
(See AMC OPS to BCAR OPS 1.035(AMC))

(a) The Operator shall establish one Quality System and designate one Quality Manager to monitor compliance with, and the adequacy of, procedures required to ensure safe operational practices and airworthy aeroplanes. Compliance monitoring must include a feedback system to the Accountable Manager to ensure corrective action as necessary. (See also BCAR-OPS 1.175 (n)).

(b) The Quality System must include a Quality Assurance Programme that contains procedures designed to verify that all operations are being conducted in accordance with all applicable requirements, standards and procedures.

(c) The Quality System and the Quality Manager must be acceptable to the BDCA. (All affecting quality shall be referred to BCAR OPS 1)

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

(e) Notwithstanding paragraph (a) above, the BDCA may accept the nomination of two Quality Managers, one for operations and one for maintenance, provided that the operator has designated one Quality Management Unit to ensure that the Quality System is applied uniformly throughout the entire operation.

BCAR-OPS 1.037 Safety management system (SMS)

(See Appendix 1 to BCAR OPS 1.037)
(See Appendix 2 to BCAR OPS 1.037)
(See AMC 1 of BCAR OPS 1.037)

(a) Operators are required to implement a safety management system (SMS) acceptable to the BDCA.

(b) The SMS shall be established in accordance with the implementation framework set out in paragraph (d).

(c) The SMS shall be according to the size and complexity of the products or services provided by the operator.

(d) The implementation framework is made up of four components and twelve elements.

1. Safety policy and objectives

1.1 Functional responsibility and commitment of the management office
1.2 Obligation of safety accountability
1.3 Designation of key safety personnel
1.4 Coordination of emergency response planning
1.5 SMS documentation

2. Safety risk management

2.1 Hazard identification
2.2 Safety risk assessment and mitigation

3. Safety assurance

3.1 Observation and measurement of safety performance
3.2 Change management
3.3 Continuous SMS improvement

4. Safety promotion

4.1 Instruction and education
4.2 Safety communication

(e) The Operator of an aeroplane with a certificated take-off mass more than 27 000 kg shall establish and maintain a flight data analysis programme as part of its safety management system.

1. As part of the safety management system, The Operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

2. A flight data analysis programme shall contain adequate safeguards to protect the source(s) of the data.

3. A safety management system shall clearly define lines of safety accountability throughout a maintenance organisation, including a direct accountability for safety on the part of senior management.

BCAR-OPS 1.038 Flight safety document system

(See AMC OPS 1.038)

The operator shall establish a flight safety document system to be used and serve as a guide for personnel in charge of the operations, as part of its safety management system.

BCAR-OPS 1.039 Use of Data Recordings or Transcripts

a) The BDCA will not allow the use of recordings or transcripts of the CVR, CARS, AIR Class A and AIRS Class A, for purposes other than the investigation of an accident or incident, in accordance with the provisions of BCAR 13, except when the recordings or transcripts:

1) are related to a safety occurrence identified in the context of the safety management system (SMS); are limited to the relevant parts of a de-identified transcript of the recordings; and are subject to the protections granted under the operator's SMS.

2) are required for use in criminal proceedings unrelated to an event involving the investigation of an accident or incident and are subject to the protections afforded under the operator's SMS.

3) are used for inspections of flight recorder systems each year as set by the BDCA.

b) The BDCA will not allow the use of recordings or transcripts of the FDR, ADRS, as well as Class B, AIR Class C and AIRS for purposes other than the investigation of an accident or incident, in accordance with BCAR 13, except when the recordings or transcripts are subject to protection granted in accordance with the operator's SMS and:

1) Are used by the operator for airworthiness or maintenance purposes;

2) They are used by the operator to carry out a flight analysis program required in this regulation;

3) Required for use in processes unrelated to an event involving the investigation of an accident or incident;

4) Are unidentified: or

5) The framework of the operator's protected procedures is disclosed.

BCAR-OPS 1.040 Additional crew members

(a) The Operator shall ensure that all crew members have also been trained in, and are proficient to perform, their assigned duties.

(b) Where there are crew members, other than cabin crew members, who carry out their duties in the passenger compartment of an aeroplane, The Operator shall ensure that these

(1) are not confused by the passengers with the cabin crew members;

(2) do not occupy required cabin crew assigned stations;

(3) do not impede the cabin crew members in their duties.

BCAR-OPS 1.050 Search and rescue information

The Operator shall ensure that essential information pertinent to the intended flight concerning search and rescue services is easily accessible on the flight deck.

BCAR-OPS 1.055 Information on emergency and survival equipment carried on board

The Operator shall ensure that there are available for immediate communication to rescue coordination centres, lists containing information on the emergency and survival equipment carried on board all its aeroplanes. The information shall include, as applicable, the number, colour and type of life rafts and pyrotechnics, details of emergency medical supplies, water supplies and the type and frequencies of emergency portable radio equipment.

BCAR-OPS 1.060 Ditching

The Operator shall not operate any aeroplane with an approved passenger seating configuration of more than 30 passengers on overwater flights at a distance from land suitable for making an emergency landing, greater than 120 minutes at cruising speed, or 400 nautical miles, whichever is the lesser, unless the aeroplane complies with the ditching requirements prescribed in the applicable airworthiness code.

BCAR OPS 1.065 Transportation of weapons and ammunition of war

(See AMC OPS 1.065)

(a) The operator shall not transport weapons of war or ammunition of war by air unless an approval allowing it has been granted by all affected States.

(b) The operator will guarantee that the weapons of war and ammunition of war:

(1) Are located in a place on the aeroplane that passengers cannot access during the flight;

(2) If they are firearms, they are unloaded, unless before the start of the flight, all affected States have approved that the weapons of war and ammunition of war be transported in conditions that differ, totally or partially, from those listed in this subparagraph.

(c) The operator shall ensure that the pilot in command is notified, prior to the start of the flight, of the details and location on board the aeroplane of any weapons of war and ammunition of war that are intended to be transported.

BCAR-OPS 1.070 Carriage of sporting weapons and ammunitions

(See AMC OPS 1.070)

(a) The Operator shall take all reasonable measures to ensure that any sporting weapons intended to be carried by air are reported.

(b) The Operator accepting the carriage of sporting weapons shall ensure that they are:

(1) Stowed in the aeroplane in a place which is inaccessible to passengers during flight unless the Authority has determined that compliance is impracticable and has accepted that other procedures might apply; and

(2) In the case of firearms or other weapons that can contain ammunition, they must be unloaded, according to the provisions of the corresponding BCAR 17.

(3) Ammunition for sporting weapons may be carried in passengers checked baggage, subject to certain limitations, in accordance with the provisions of the corresponding BCAR 18.

(4) When an authority is required to travel armed in the passenger cabin, it must comply with the provisions of the corresponding BCAR 17, and the operator must notify the pilot in command before the flight of the location of said person on board the aeroplane.

BCAR-OPS 1.075 Method of carriage of persons

(a) The Operator shall take all reasonable measures to ensure that no person is in any part of an aeroplane in flight which is not a part designed for the accommodation of persons unless temporary access has been granted by the pilot in command to any part of the aeroplane:

(1) For the purpose of taking action necessary for the safety of the aeroplane or of any person, animal or goods therein;

(2) In which cargo or stores are carried, being a part, which is designed to enable a person to have access thereto while the aeroplane is in flight.

BCAR-OPS 1.080 Dangerous goods transportation by air

The Operator shall take all reasonable measures to ensure that no person offers or accepts dangerous goods for transport by air unless the person has been trained and the goods are properly classified, documented, certificated, described, packaged, marked, labelled and in a fit condition for transport as required by the corresponding dangerous goods regulation and technical Instructions.

BCAR-OPS 1.085 Crew responsibilities

(See AMC OPS 1.085(e) (3))

(a) A crew member shall be responsible for the proper execution of his/her duties that:

(1) Are related to the safety of the aeroplane and its occupants; and

(2) Are specified in the instructions and procedures laid down in the Operations Manual.

(b) A crew member shall:

(1) Report to the pilot in command any fault, failure, malfunction, or defect which he/she believes may affect the airworthiness or safe operation of the aeroplane including emergency systems.

(2) Report to the pilot in command any incident that endangered, or could have endangered, the safety of operation; and

(3) Make use of the operator's occurrence reporting schemes in accordance with BCAR-OPS 1.085(f) (10) and BCAR-OPS 1.420. In all such cases, a copy of the report(s) shall be communicated to the pilot in command concerned.

(c) Nothing in paragraph (b) above shall oblige a crew member to report an occurrence which has already been reported by another crew member.

(d) A crew member shall not perform duties on an aeroplane:

(1) While under the influence of any drug that may affect his/her faculties in a manner contrary to safety;

(2) Until a 24-hour time period has elapsed after deep water diving;

(3) Following blood donation except when a 24-hour time period has elapsed;

(4) If he/she is in any doubt of being able to accomplish his/her assigned duties; or

(5) If he/she knows or suspects that he/she is suffering from fatigue, or feels unfit to the extent that the flight may be endangered.

(e) A crew member shall not:

(1) Consume alcohol less than 8 hours prior to the specified reporting time for flight duty or the commencement of standby;

(2) Commence a flight duty period with a blood alcohol level in excess of 0.2% blood alcohol concentration (BAC);

(3) Consume alcohol during the flight duty period or on standby.

(f) The pilot in command shall:

(1) Be responsible for the safety of all crew members, passengers and cargo on board, until he/she leaves the aeroplane at the end of the flight;

(2) Be responsible for the operation and safety of the aeroplane from the moment the aeroplane is first ready to move for the purpose of taxiing prior to take-off until the moment it finally comes to stop at the end of the flight and the engine(s) used as primary propulsion units are shut down;

(3) Have authority to give all commands he/she deems necessary for the purpose of securing the safety of the aeroplane and of persons or property carried therein;

(4) Have authority to disembark any person, or any part of the cargo, which, in his/her opinion, may represent a potential hazard to the safety of the aeroplane or its occupants;

(5) Not allow a person to be carried in the aeroplane who appears to be under the influence of alcohol or drugs to the extent that the safety of the aeroplane or its occupants is likely to be endangered;

(6) Have the right to refuse transportation of inadmissible passengers, deportees or persons in custody if their carriage poses any risk to the safety of the aeroplane or its occupants;

(7) Ensure that all passengers are briefed on the location of emergency exits and the location and use of relevant safety and emergency equipment;

(8) Ensure that all operational procedures and check lists are complied with in accordance with the Operations Manual;

(9) Not permit any crew member to perform any activity during take-off, initial climb, final approach and landing except those duties required for the safe operation of the aeroplane;

(10) Convey all information related to any amendment to the flight plan, any emergency and safety-related information that may be necessary for the safe conduct of the flight to the operations control and flight dispatch centre or flight operations officer/flight dispatcher.

(11) Not permit:

(i) A flight data recorder to be disabled, switched off or erased during flight nor permit recorded data to be erased after flight in the event of an accident or an incident subject to mandatory reporting;

(ii) A cockpit voice recorder to be disabled or switched off during flight unless he/she believes that the recorded data, which otherwise would be erased automatically, shall be preserved for incident or accident investigation nor permit recorded data to be manually erased during or after flight in the event of an accident or an incident subject to mandatory reporting;

(12) Decide whether to accept or reject an aeroplane with permitted inoperative items allowed by the CDL or MEL; and

(13) Ensure that the pre-flight inspection has been carried out.

(g) The pilot in command shall, in an emergency that requires immediate decision and action, take any action he/she considers necessary under the circumstances. In such cases, he/she may deviate from rules, operational procedures, and methods in the interest of safety.

BCAR-OPS 1.090 Authority of the pilot in command

The operator shall take all reasonable measures to ensure that all persons carried in the aeroplane obey all lawful commands given by the pilot in command for the purpose of securing the safety of the aeroplane and of persons or property carried therein.

BCAR-OPS 1.095 Authority to taxi an aeroplane

The Operator shall take all reasonable steps to ensure that an aeroplane in his/her charge is not taxied on the movement area of an aerodrome by a person other than a flight crew member, unless that person, seated at the controls:

(a) Has been duly authorised by the operator or a designated agent and is competent to;

(1) taxi the aeroplane;

(2) use the radio telephone; and

(b) Has received instruction in respect of aerodrome layout, routes, signs, marking, lights, air traffic control signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

BCAR-OPS 1.100 Admission to flight deck

(a) The Operator must ensure that no person, other than a flight crew member assigned to a flight, is admitted to, or carried in, the flight deck unless that person is:

(1) An operating crew member;

(2) A representative of the BDCA responsible for certification, licensing or inspection if this is required for the performance of his/her official duties; or

(3) Permitted by and carried in accordance with instructions contained in the Operations Manual.

(b) The pilot in command shall ensure that:

(1) In the interests of safety, admission to the flight deck does not cause distraction and/or interfere with the flight's operation; and

(2) All persons carried on the flight deck are made familiar with the relevant safety procedures.

(c) The final decision regarding the admission to the flight deck shall be the responsibility of the Pilot in command and in accordance with BCAR OPS 1.145.

BCAR-OPS 1.105 Unauthorised carriage

The Operator shall take all reasonable measures to ensure that no person secretes himself or herself secretes cargo on board an aeroplane.

BCAR-OPS 1.110 Portable electronic devices

The Operator shall not permit any person to use~~,~~ and take all reasonable measures to ensure that no person does use, on board an aeroplane, a portable electronic device that can adversely affect the performance of the aeroplane's systems and equipment.

BCAR-OPS 1.115 Alcohol and drugs

(a) The Operator shall not permit any person to enter or be in~~,~~ and take all reasonable measures to ensure that no person enters or is in, an aeroplane when under the influence of alcohol or drugs to the extent that the safety of the aeroplane or its occupants is likely to be endangered.

(b) The operator shall not allow any person on board an aeroplane to consume alcohol unless it has been provided by the passenger cabin crew.

(c) The holder of a license provided for in the corresponding licensing regulation shall not exercise the privileges and ratings conferred by this license when he/she is under the effect of any psychoactive substance that could prevent him/her from exercising such privileges appropriately. He/she shall also refrain from any abuse of psychoactive substances and any other misuse of them.

BCAR-OPS 1.118 Programme to control the use of narcotic drugs, enervating substances, and alcohol

(a) The operator shall establish a programme to control the use of narcotic drugs, enervating substances and alcohol for those employees carrying out tasks directly related to flight safety. The programme shall include at least the following activities:

(1) Aeroplane pilot

(2) Assistance to passengers

(3) Flight instruction

(4) Flight dispatch

(5) Aeroplane maintenance

(6) Ground safety coordination

(b) Control methods can be applied on schedule, at random, by suspect of situations, or after an incident or accident.

(c) If The Operator subcontracts the execution of the activities listed in subparagraph (a) before, it shall ensure that the subcontractor has established a programme to detect these substances and it is authorised and qualified by the competent authority to carry out the activities mentioned.

(d) This control programme shall be acceptable to the BDCA.

(e) Any device used in this programme shall be approved by the BDCA.

(f) The operator must establish the criteria in which a test result is applicable to a safety investigation within the framework of its SMS.

BCAR-OPS 1.120 Endangering safety

(a) The Operator shall take all reasonable measures to ensure that no person recklessly or negligently acts or omits to act:

(1) So as to endanger an aeroplane or person therein;

(2) To cause or permit an aeroplane to endanger any person or property.

(b) The operator shall establish the procedures to ensure the submission of a report before the competent Authority against the persons who performs any of the acts referred in subparagraph (a) .

BCAR-OPS 1.125 Documents to be carried on board

(See Appendix 1 to BCAR-OPS 1.125)
(See AMC to BCAR OPS 1.125 (a) (4))

(a) The Operator shall ensure that the following documents (original or certified copies) are carried on each flight:

(1) The Certificate of Registration;

(2) The Certificate of Airworthiness;

(3) Noise Certificate (if applicable), including an English translation, when such document or an appropriate statement of noise approval included in another document approved by the State of Registry has been issued in a language other than English.

(4) A certified true copy of the air operator certificate and a copy of the operations specifications and limitations relevant to the aeroplane type, issued in conjunction with the certificate;

(5) The Aeroplane Radio Licence; and

(6) Third party liability insurance certificate(s).

(7) Original or an electronic certified authentic copy of the agreement for transfer of functions or obligations under article 83 bis of the Chicago convention (if applicable). The BDCA will transmit the agreement summary to ICAO together with the Article 83 bis agreement for registration with the ICAO Council by the State of Registry or the State of the Operator.

(b) Each flight crew member shall, on each flight, carry a valid flight crew licence with appropriate rating(s) for the purpose of the flight.

(c) When the certificate and the associated operations specifications are issued by the State of the Operator in a language other than English, an official translation into English shall be included.

BCAR-OPS 1.130 Manuals to be carried on board

(a) The operator shall ensure that:

(1) The current parts of the Operations Manual relevant to the duties of the crew are carried on each flight;

(2) Those parts of the Operations Manual which are required for the conduct of a flight are easily accessible to the crew on board the aeroplane; and

(3) The current Aeroplane Flight Manual is carried in the aeroplane unless the BDCA has accepted that the Operations Manual prescribed in BCAR-OPS 1.1045, Appendix 1, Part B, contains relevant information for that aeroplane.

BCAR-OPS 1.135 Additional information and forms to be carried

(a) The Operator shall ensure that, in addition to the documents and manuals prescribed in BCAR-OPS 1.125 and BCAR-OPS 1.130 the following information and forms, relevant to the type and area of operation, are carried on each flight:

(1) Operational Flight Plan containing at least the information required in BCAR-OPS 1.1060;(.)

(2) Aeroplane Technical Log containing at least the information required in BCAR-OPS 1.915 (a) and BCAR OPS 1.1055 (a) Subpart M;

(3) Details of the filed ATS flight plan;

(4) Appropriate NOTAM/AIS briefing documentation;

(5) Appropriate meteorological information;

(6) Weight and balance documentation as specified in Subpart J;

(7) Notification of special categories of passenger such as security personnel, if not considered as crew, handicapped persons, inadmissible passengers, deportees, and persons in custody~~;(~~.)

(8) Notification of special loads including dangerous goods and written information to the pilot in command as prescribed in BCAR-OPS 1.1215 (c)~~;(~~.)

(9) Current maps and charts and associated documents as prescribed in BCAR-OPS 1.290(b) (7);

(10) Any other documentation which may be required by the States concerned with this flight, such as cargo manifest, passenger manifest etc.; and

(11) Forms to comply with the reporting requirements of the BDCA and the operator.

(b) The BDCA may permit the information detailed in subparagraph (a) above, or parts thereof, to be presented in a form other than on printed paper. An acceptable standard of accessibility, usability and reliability must be assured.

BCAR-OPS 1.137 Flight crew equipment

A flight crew member assessed as fit to exercise the privileges of a licence, subject to the use of suitable correcting lenses, shall have a spare set of the correcting lenses readily available when exercising those privileges.

BCAR-OPS 1.140 Information retained on the ground

(a) The operator shall ensure that:

(1) At least for the duration of each flight or series of flights;

(i) Information relevant to the flight and appropriate for the type of operation is preserved on the ground; and

(ii) The information is retained until it has been duplicated at the place at which it will be stored in accordance with BCAR-OPS 1.1065; or, if this is impracticable,

(iii) The same information is carried in a fireproof container in the aeroplane.

(b) The information referred to in subparagraph (a) above includes:

(1) A copy of the operational flight plan where appropriate;

(2) Copies of the relevant part(s) of the aeroplane technical log;

(3) Route specific NOTAM documentation if specifically edited by the operator;

(4) Weight and balance documentation if required (BCAR-OPS 1.625);

(5) Special loads notification; and

(6) Specific meteorological information for the route.

BCAR-OPS 1.145 Power to inspect

The Operator shall ensure that any person authorised by the BDCA and of a Member State is permitted at any time to board and fly in any aeroplane operated in accordance with an AOC issued by BDCA and to enter and remain on the flight deck provided that the pilot in command may refuse access to the flight deck if, in his/her opinion, the safety of the aeroplane would thereby be endangered. In the case the operator or pilot in command denies access to a person authorised by the BDCA, he/she shall submit a report, providing detail of such decision, to the authority in a term no longer than 48 hours. The BDCA will analyse such a report and it will start a sanctioning process, if necessary.

BCAR-OPS 1.150 Production of documentation and records

(a) The operator shall:

(1) Give any person authorised by the BDCA access to any documents and records which are related to flight operations or maintenance; and

(2) Submit all documents and records mentioned to BDCA in a term longer than 72 hours.

(b) The pilot in command shall, within a reasonable time of being requested to do so by a person authorised by BDCA, produce to that person the documentation required to be carried on board.

BCAR-OPS 1.155 Preservation of documentation

(a) The operator shall ensure that:

(1) Any original documentation, or copies thereof, that it is required to preserve is preserved for the required retention period even if it ceases to be the operator of the aeroplane; and

(2) Where a crew member, in respect of whom The Operator has kept a record in accordance with Subpart P, becomes a crew member for another operator, that record is made available to the new operator.

BCAR-OPS 1.160 Preservation, production, and use of flight recorder recordings

(See AMC OPS 1.160(a) (1) and (2))

Preservation of recordings

(a) The operator shall ensure, to the extent possible, in the event the aeroplane becomes involved in an accident or incident, the preservation of all related flight recorder records and, if necessary, the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with the corresponding accident and incident regulation.

(b) *Submission* of recordings

An aeroplane operator carrying flight data recorders must submit the recordings made within a period of 30 days as per request of the BDCA.

(c) *Use of recordings*

(1) The cockpit voice recorder recordings may not be used for purposes other than for the investigation of an accident or incident subject to mandatory reporting except with the consent of all crew members concerned, except when such records are:

(i) Used by the operator for airworthiness or maintenance purposes only; or

(ii) De-identified; or

(iii) Disclosed under secure procedures.

BCAR-OPS 1.165 Leasing

(a) Terminology

The terms used in this paragraph have the following meaning:

(1) *Lease*. – Contractual agreement by which an air carrier holding an appropriate licence obtains commercial control of an entire aeroplane without a transfer of ownership.

(2) *Dry lease* is when the aeroplane is operated under the Air Operator Certificate (AOC) of the lessee.

(3) *Wet lease* is when the aeroplane is operated under the AOC of the lessor.

(4) *Short term lease* – In this regulation a short-term lease is a type of wet lease used to cover eventual operations during a limited period.

(5) *Exchange of aeroplanes between operators* is the agreement approved by the corresponding authorities between two operators to exchange their aeroplanes in approved points. According to this agreement, the operators are forced to operate their aeroplanes following the maintenance, operation, and MEL procedures approved for each of them in their OPSPECS.

(b) Leasing of aeroplane.

(1) Wet lease out of aeroplane with crew. - The operator that provides an aeroplane with its complete crew to another operator but maintaining all the functions and responsibilities established in Subpart C of BCAR-OPS 1 and remains the aeroplane operator for all purposes.

(2) All leases:

(i) Except as provided in subparagraph (b) (1) above, The Operator intending to use, or transfer, an aeroplane from/to another operator of a State, must first obtain the approval of its Authority. Any condition imposed by the Authority within the approval must be included in the lease agreement itself, which must be registered in the corresponding aeronautical registry.

(ii) When an airplane operates under an agreement under Article 83 bis, the State of registry and/or the State of Belize shall transmit to ICAO the summary of the agreement together with the agreement under Article 83 bis for its registration before the ICAO Council. The summary of the agreement must include the information that appears in Appendix 2 to BCAR OPS 1.125 according to the specific aeroplane and must follow the format of the appendix.

(iii) Those elements of the lease agreements that are approved by the Authority, (which are agreements other than those for the lease of aeroplane with a full crew and where there is no transfer of functions and responsibilities), must be considered, in relation to the leased aeroplane, variations of the AOC under which the flights will be operated.

(3) Regarding the legal requirements that are demanded and the terms that are established for each of the types of lease contracts regulated here, each State will establish them in its internal legislation.

(c) Leasing of aeroplane between a concession operator, another operator, or another owner of the aeroplane:

(1) Acquisition of aeroplane in dry leases (dry lease-in).

(i) A concession operator may preferentially lease a dry-lease-in aeroplane registered in any State signatory of the Convention on International Civil Aviation as long as it complies with the ICAO requirements established in annexes 1, 6 and 8, and those that the State consider applicable in accordance with its regulations; the lease will be approved by the Authority.

(ii) The Operator must ensure that any differences in the leased aeroplane with respect to the requirements established in Subparts K and L of BCAR OPS 1 are notified to the Authority. The Authority will only issue an approval for this lease when it deems the notified differences are acceptable.

(2) Acquisition of aeroplane on wet lease (wet lease-in)

i. The Operator licensed to lease aeroplane in wet-lease into The Operator of any other State signatory of the Convention on International Civil Aviation if it complies with the ICAO requirements established in annexes 1, 6 and 8, and those that the State considers applicable in accordance with its regulations; the lease must be approved by the Authority.

ii. The Operator licensed by a State must guarantee that in relation to the aeroplane under the wet-lease regime:

A. The lessor's safety standards in both operations and maintenance are equivalent to those established in BCAR-OPS 1.
B. The lessor is The Operator holding an AOC issued by a signatory State of the Convention on International Civil Aviation.
C. The airplane has a standard certificate of airworthiness issued in accordance with ICAO Annex 8. A standard airworthiness certificate issued by a member State of the Convention on International Civil Aviation is acceptable when issued in accordance with BCAR 21.
D. The national regulatory requirements of the State of the lessee are met.

iii. This lease will only be allowed so that The Operator can operate new routes, and new services, cover commercial needs, and maintenance services, provide training for the inclusion of new equipment, or any other event that the operator requires under due justification in those circumstances or contingencies that prevent the public transport of passengers with their primary aeroplane.

(3) Acquisition of aeroplane on wet lease (wet lease-in)

The Operator may lease aeroplane in exchange registered in any signatory State of the Convention on International Civil Aviation if it complies with international requirements in relation to personnel licenses, commercial operations and aeroplane maintenance, as well as the requirements that the State considers applicable in accordance with its regulations. The exchange lease must be approved by the State Authority of the operator.

(4) Wet lease out of aeroplane

The Operator of a concession State that transfers an aeroplane and its complete crew to another entity and retains all the functions and responsibilities according to BCAR-OPS 1, will continue to be the operator of this aeroplane.

(d) Leasing of aeroplane in exceptional situations (chartering).

In exceptional circumstances in which a concession operator is forced to replace an aeroplane in an immediate, urgent, and unforeseen manner, the approval required by subsection (c) (2) (i) may be waived provided that:

(1) The lessor is The Operator holding an AOC issued by a signatory State of the Convention on International Civil Aviation, which is also included in a list of operators previously approved by the Authority.

(2) The lease period does not exceed 10 consecutive days; and

(3) the Authority is immediately informed of the use of this provision, which does not require prior registration or authorization.

Appendix 1 to BCAR-OPS 1.037 Safety Management *System*

(a) The holder of an Air Operator Certificate (AOC) shall establish and always maintain a SMS designed in accordance with the nature and complexity of the operations authorised under the AOC and including all procedures to detect, prevent, and correct threats to safety of operations.

(b) The safety management system (SMS) shall include:

1) A safety policy

2) A method for managing internal reports and corrective actions to prevent concurrence of deficiencies.

3) A plan to identify threats to safety to assess and manage risk.

4) A plan to ensure that the staff is trained and competent to perform their duties.

5) A plan to measure safety performance procedures to ensure that all staff are aware of their SMS responsibilities.

6) A process to respond to the regular audits of the SMS performed by the quality system.

(c) Responsibilities of the accountable executive for the SMS:

(1) The holder of an Air Operator Certificate (AOC) shall designate and notify to the BDCA the name of the accountable executive for the compliance with the regulations and the implementation of the Safety Management System.

(2) The accountable executive responsible for the SMS must be the person who has control over the financial and human resource according to the AOC.

(d) In accordance with the four phases established by the International Civil Aviation Organisation (ICAO), the operator must submit the following documentation to the State Safety Programme office of the BDCA as the start of the implementation of phase I of its safety management system:

1. Identify the accountable executive responsible for the SMS.
2. Establish an SMS implementation team.
3. Define the scope of the SMS.
4. Conduct an SMS gap analysis.
5. Develop an SMS implementation plan.
6. Establish a key person/office responsible for the administration and maintenance of the SMS.
7. Establish an SMS training program for staff, with priority given to the SMS implementation team.
8. Initiate SMS/safety communication channels.

Appendix 2 to BCAR OPS 1.037 Framework for the safety management systems (SMS)

(a) The operator must implement and maintain a safety management system (SMS), the application of the framework will be directly proportional to the size of the organisation and the complexity of its services. The system must be framed under the four components and the 12 elements that represent the minimum requirements in the establishment of an SMS that are detailed below:

1. Safety policies and objectives

(1) *Management commitment and responsibility*

The operator shall define its safety policy which should be in accordance with international and national requirements, and which shall be signed by the Accountable Executive of the organisation. The safety policy shall reflect organisational commitments regarding safety, including a clear statement about the provision of the necessary human and financial resources for its implementation and be communicated, with visible endorsement, throughout the organisation. The safety policy shall include the safety reporting procedures and clearly indicate which types of behaviours are unacceptable and shall include the conditions under which disciplinary action would not apply. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organisation.

(2) *Safety accountabilities*

The operator must have an accountable executive who, irrespective of other functions, has ultimate responsible and accountability on behalf of the operator for the implementation and maintenance of the SMS throughout the organisation. The operator must clearly define lines of safety accountability throughout the organisation, including a direct obligation for safety on the part of senior management. The operator shall also identify the safety accountabilities of all members of senior management, irrespective of other functions, as well as personnel, with respect to the safety performance of the SMS. Safety responsibilities, accountabilities and authorities shall be documented and communicated throughout the organisation and shall include a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

(3) *Appointment of key safety personnel*

The operator shall identify a Safety Manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

(4) *Coordination of emergency response planning*

The operator shall ensure that an emergency response plan that provides for the orderly and efficient transition from normal to emergency operations and the return to normal operations is properly coordinated with the emergency response plans of those organisations, it must interface with during the provision of its service.

(5) *SMS documentation*

The operator must prepare an SMS implementation plan that must be supported by senior management of the organisation and must define the organisation's approach to managing safety in a way that meets the organisation's objectives in terms of safety. The organisation shall develop and maintain SMS documentation describing the safety policy and objectives, the SMS requirements, the SMS processes and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the

SMS outputs. In addition, as part of this SMS related documentation, the operator may develop and maintain a safety management system manual (SMSM) to communicate its approach to the management of safety throughout the organisation.

(b) Safety risk management

(1) *Hazard identification*

The operator shall develop and maintain a formal process that ensures that aviation safety hazards are identified. This should include the investigation of incidents and accidents to identify potential hazards.

(2) *Risk assessment and mitigation*

The operator shall develop and maintain a formal process that ensures analysis, assessment and control of safety risks related to identified hazards, such as the level of protection available provided by the search and rescue services at aerodromes specified in the operational flight plan to ensure that it has an acceptable level for the aeroplane that will use it.

(c) Safety assurance

(1) *Safety performance monitoring and measurement*

The operator shall develop and maintain the means to verify the safety performance of the organisation and to validate the effectiveness of safety risks controls. The safety performance of the organisation shall be verified in reference to the safety performance indicators and safety performance targets of the SMS.

(2) *Change management.*

The operator must develop and maintain a process to identify changes within the organisation that may affect the operational processes and services; describe the provisions adopted to ensure good safety performance before any changes are made; and eliminate or modify safety risk controls that are no longer necessary or effective due to changes in the operational environment.

(3) *Continuous improvement of the SMS*

The operator shall develop and maintain a formal process to identify the causes of substandard performance of the SMS, determine the implications of substandard performance of the SMS, determine substandard performance in operations, and eliminate or mitigate such causes.

(d) Safety promotion

(1) *Training and education*

The operator shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to involvement in the SMS.

(2) *Safety communication*

The operator shall develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

Appendix 1 to BCAR-OPS 1.125 Documents to be carried on board.

(See BCAR-OPS 1.125)

In case of loss or theft of documents specified in BCAR OPS 1.125, the operation is allowed to continue until the flight reaches the principal base of operations or a place where a replacement document can be provided.

(a) SUMMARY OF THE AGREEMENT UNDER ARTICLE 83 bis(when applicable)

(1) BCAR-OPS 1.125 requires that the operator carry on board a certified authentic copy of the summary of the agreement under Article 83 bis, which must contain the information that appears in the following table:

(3) Summary of the agreement under **Article 83 *bis***:

ARTICLE 83 *bis* AGREEMENT SUMMARY		
Title of the Agreement:		
State of Registry:		Focal point:
State of the Operator:		Focal point:
Date of signature:	By State of Registry[1]:	
	By State of the Operator[1]:	
Duration:	Start Date[1]:	End Date (if applicable)[2]:
Languages of the Agreement:		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

Convention on International Civil Aviation	**ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the Operator**		
Article 12: Rules of the air	Annex 2, all chapters	Yes ☐ No ☐	
Article 30 a): Aircraft radio equipment	Radio Station Licence	Yes ☐ No ☐	
Articles 30 b) and 32 a): Licenses of personnel	Annex 1, Chapters 1, 2, 3 and 6; and Annex 6, Part I, Radio Operator; or Annex 6, Part II (qualifications and/or flight crew member licensing); or Annex 6, Part III, Section II (composition of the flight crew) (radio operator); or Annex 6, Part III, Section III (qualifications)	Yes ☐ No ☐	Annex 6: [Specify Part and paragraph][3]
Article 31: Certificates of airworthiness	Annex 6 Part I or Part III, Section II	Yes ☐ No ☐	[Specify Part and chapters][3]
	Annex 6 Part II or Part III, Section III	Yes ☐ No ☐	[Specify Part and chapters][3]
	Annex 8 Part II, Chapters 3 and 4	Yes ☐ No ☐	[Specify chapters][3]

Aircraft affected by the transfer of responsibilities to the State of the Operator					
Aircraft make, model, series	Nationality and registration marks	Serial No.	AOC No. (Commercial air transport)	Dates of transfer of responsibilities	
				From[1]	To (if applicable)[2]

(4) The agreement summary of an Article 83 bis agreement shall be accessible to a civil aviation safety inspector to determine which functions and duties are transferred under the agreement by the State of Registry to the State of the Operator, when conducting surveillance activities, such as ramp checks.

SUBPART C – AIR OPERATOR CERTIFICATION AND SUPERVISION

BCAR-OPS 1.175 General rules for air operator certification

(See Appendix 1 to BCAR OPS 1.175)
(See Appendix 2 to BCAR OPS 1.175)
(See Appendix 3 to BCAR OPS 1.175)
(See ACJ OPS 1.175)
(See ACJ OPS 1.175(d) (2))
(See ACJ OPS 1.175(q))

(a) The Operator shall not operate an aeroplane for commercial air transport otherwise than under, and in accordance with, the terms and conditions of an Air Operator Certificate (AOC) issued by the BDCA.

(b) An applicant for an AOC, or variation of an AOC, shall allow the Authority to examine all safety aspects of the proposed operation to prove its technical suitability.

(c) The air operator certificate shall authorise the operator to conduct commercial air transport operations in accordance with the operations specifications.

(d) An applicant of an AOC must:

(1) Not hold an AOC issued by another Authority;

(2) Have its principal place of business and, if any, its registered office located in the State responsible for issuing the AOC; (See ACJ OPS 1.175 (d) (2));

(3) Have registered the aeroplanes which are to be operated under the AOC in the State responsible for issuing the AOC; and

(4) Satisfy the BDCA that it can conduct safe operations.

(5) Carry out demonstration flights as approved by the BDCA when the applicant applies for an AOC for the first time or a request a modification/amendment in the specifications and limitations to authorise a new type of operation.

(6) All demonstration flights shall be carried out in accordance with the maintenance and operation procedures from the corresponding regulations.

(7) Once the demonstration flight programme has been accepted, the BDCA will issue an authorisation. This authorisation will be needed to carry out demonstration flights in the routes and airports proposed.

(e) The Operator may operate aeroplanes registered on the aeroplane national register of a second State if it satisfies the BDCA and compiles with the legislation of that State of the registry.

(f) The Operator shall grant the Authority access to its organisation and aeroplanes and shall ensure that, concerning maintenance, access is granted to any associated BCAR–145 maintenance organisation, to determine continued compliance with BCAR–OPS 1.

(g) An AOC will be varied, suspended, or revoked if the BDCA is no longer satisfied that the operator can maintain safe operations. When serious non-compliance situations endangering safety occur, the BDCA may immediately suspend the operations partially or totally as a precautionary measure and at the same time start the corresponding administrative procedure.

(h) (i) The operator must demonstrate to the satisfaction of the BDCA that:

(1) Its organisation and management are suitable and properly matched to the scale and scope of the operation; and

(2) Procedures for the supervision of operations have been defined (in its operations manual).

(i) The operator must have nominated an Accountable Manager acceptable to the BDCA, who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the BDCA (See AMC OPS 1.035).

(j) The operator must have nominated Managers, acceptable to the BDCA, who is responsible for the management and supervision of the following areas:

(1) flight operations;

(2) maintenance system;

(3) training;

(4) ground operations;

(5) quality system;

(6) Safety Management System (SMS).

(k) Requirements for accountable managers or nominated postholders (See AMC OPS 1.175 (j) and AMC OPS 1.175 (k)):

(1) It is expected that the nominated postholders can prove to the BDCA they have the experience and license required, mentioned in sections 2 to 5 below. Under

circumstances, the BDCA may accept a nomination that does not comply with the requirements. In this case, the nominated postholder shall prove to the BDCA that he/she has an equivalent experience and that he/she can carry out the tasks related to his/her position and the size of the operation (profile equivalent to the substitute's profile).

(2) The nominated postholders shall have:

(i) Practical experience and knowledge about the implementation of safety standards and safe operational practices.

(ii) Great knowledge of:

(A) BCAR OPS and any other associated procedure or requirement;

(B) Operation specifications associated with the AOC;

(C) The need and content of the sections of the Operations Manual of their concern.

(3) Be familiar with the quality and safety systems;

(4) Management experience or completion of a management course acceptable to the BDCA; and

(5) Five (5) years of experience in jobs like their current positions. From those years of experience, they shall have at least two years of experience in the aeronautical field in an appropriate position.

(l) The issuance of an air operator certificate by the BDCA will depend on the operator showing that it has an adequate organisation, a method of control and supervision of flight operations, a training program and arrangements for ground handling and maintenance services. according to the nature and scope of the specific operations.

1) The maintenance of the validity of an AOC, will depend on the operator complying with the requirements found on BCAR OPS 1.175 (m) under the supervision of the BDCA.

(m) Flight operations:

(1) The nominated postholders for flight operations or their substitutes shall hold a pilot license in accordance with the valid and appropriate licensing regulation for the type of operation carried out with the AOC, according to the following:

(i) If the AOC includes aeroplanes certified for a minimum crew of two pilots: an ATP license issued or validated by the State that issued the AOC;

(ii) If the AOC includes aeroplanes certified for a minimum crew of one pilot, refer to Annex 1 of BCAR OPS 1 Section 1.

(n) Maintenance system:

The operator must nominate within the Maintenance System a responsible person acceptable to the Authority to occupy the position of Director or Technical Manager (or equivalent position) who must certify the following:

(1) Hold a higher-level aeroplane maintenance technician license issued by the BDCA; or be an engineer in aeronautical, electrical, electronic, mechanical, industrial, or other engineering fields related to the position to hold this position.

(2) Have at least 5 years of experience in aeroplane maintenance, of which at least 2 years have been in aeroplane maintenance work as an inspector or supervisor or in maintenance management positions.

(3) Have received a minimum of 80 hours of continuing airworthiness management training, including human factors, or demonstrate acceptable experience in the field of maintenance management.

(4) Demonstrate knowledge of the Civil Aviation Law, and current aeronautical regulations applicable to the State.

(5) Demonstrate knowledge of the operator's MCM (MCM/MOM), as well as its approved specifications and limitations.

(6) Have received aeroplane type courses from the operator's fleet. The courses must have at least level III of the ATA 104 specification or according to the provisions of the manufacturer or even an equivalent training acceptable by the BDCA.

(n) Quality System

Operator’s Maintenance and/or Operations Quality System Manager/Director or equivalent position. To be accepted by the BDCA, the person proposed to occupy the Quality System Manager/Director position or equivalent may be the same person for maintenance and operations or two different persons for those positions.

(1) They shall fulfil the following:

(i) for both positions:

(A) Have attended at least to 40 hours of training in quality topics and prove knowledge in that field in a course provided by an entity officially recognised and authorised.

(ii) Flight Operations

(A) ATP, commercial or dispatcher's licence;

(B) Airline experience in accordance with paragraph (k) (5) above, (auditor, instructor, inspector, among others.)

(C) Shall prove general knowledge of the general regulations.

(iii) Maintenance

The person responsible for the Maintenance Quality System, or equivalent officer, should prove compliance with BCAR-145.30 requirements titled "Management Personnel Requirements."

(iv) Other cases

(A) Under special circumstances, the Civil Aviation Authority will determine the requirements equivalent to and based on (i), (ii), and (iii) above.

(o) Training:

The nominated postholder or his/her substitute shall have a valid type or class rating for one of the types of aeroplane included in the AOC, a valid flight instructor rating and knowledge on the training methodology.

(p) Ground operations:

The nominated postholder shall have in-depth knowledge of the ground operations concept of the holder of an AOC.

(q) If acceptable to the BDCA, a person may oversee more than one area of responsibility. For operators with 20 full-time employees or less, actively working as part of the operator, a minimum of two persons is required to cover the areas of responsibility. For operators with 21 to 50 full-time employees, a minimum of three persons is required to cover the areas of responsibility. For operators with 51 or more full-time employees, a minimum of four persons is required to cover the areas of responsibility listed in point (j).

(1) Combination of responsibilities among nominated postholders (See (q)).

(i) The approval of one person occupying different positions and filling the Accountable Manager position will depend on the nature and the size of the operation. The two areas to be considered are proficiency and individual capacity to meet the responsibilities.

(r) For operators with 20 or less full-time employees, one or more areas can be covered by the Accountable Manager if it is acceptable to the BDCA.

(s) The operator shall ensure that each flight is conducted according to the Operations Manual.

(t) The operator shall have appropriate means to ensure safe ground handling of its flights.

(u) The operator must ensure that its aeroplanes are equipped and its crews are qualified, as required for the area and type of operation.

(v) The operator shall comply with the maintenance requirements according to Subpart M for all the aeroplanes operated under the terms of its AOC.

(w) The operator must provide the BDCA with a copy of the Operations Manual for its acceptance/ approval, as specified in Subpart P, and all amendments or revisions to it.

(x) The operator must maintain operational support facilities at the main operating base, appropriate for the area and type of operation.

(y) The AOC is a personal document and cannot be transferred to any natural or legal entity.

(z) If joint technical assessments are conducted, the activities to be carried out by the BDCA, in accordance with the provisions of this BCAR-OPS 1, shall be conducted by the joint team.

(aa) Safety Management System (SMS)

To qualify as a safety manager a person should have:

(i) full-time experience in aviation safety in the capacity of an aviation safety investigator, safety/quality manager, or safety risk manager;

(ii) knowledge of the organization's operations, procedures, and activities;

(iii) broad aviation technical knowledge;

(iv) Extensive knowledge of safety management systems (SMS) and have completed appropriate SMS training;

(v) an understanding of risk management principles and techniques to support the SMS;

(vi) experience implementing and/or managing an SMS;

(vii) experience and qualifications in aviation accident/incident investigation and human factors;

(viii) experience and qualifications in conducting safety/quality audits and inspections;

(ix) knowledge of aviation regulatory frameworks, including ICAO Standards and Recommended Practices (SARPS) and relevant civil aviation regulations;

(x) the ability to communicate at all levels both inside and outside the company;

(xi) the ability to be firm in conviction, promote a just and fair culture and yet advance an open and non-punitive atmosphere for reporting;

(xii) the ability and confidence to communicate directly to the accountable executive as his advisor and confidante;

(xiii) well-developed communication skills and demonstrated interpersonal skills of a high order, with the ability to liaise with a variety of individuals and organisational representatives, including those from differing cultural backgrounds;

(xiv) computer literacy and superior analytical skills.

BCAR-OPS 1.180 Issue, variation, and continued validity of an AOC

(a) The Operator will not be granted an AOC, or a variation to an AOC, and that AOC will not remain valid unless:

(1) Aeroplanes operated have a standard Certificate of Airworthiness issued in accordance with BCAR 21.

(2) The maintenance system has been approved by the BDCA in accordance with Subpart M; and

(3) It has satisfied the BDCA that it can:

(i) Establish and maintain an adequate organisation;

(ii) Establish and maintain a quality system in accordance with BCAR-OPS 1.035;

(iii) Comply with required training programmes;

(iv) Comply with maintenance requirements, consistent with the nature and extent of the operations specified; and

(v) Comply with BCAR-OPS 1.175.

(b) Notwithstanding the provisions of BCAR-OPS 1.185 (e), the operator must notify the BDCA as soon as practicable of any changes to the information submitted in accordance with BCAR-OPS 1.185 (a) below.

(c) If the BDCA is not satisfied that the requirements of subparagraph (a) above have been met, the BDCA may require the conduct of one or more demonstration flights, operated as if they were commercial air transport flights.

(d) During the validity of an AOC, the BDCA shall establish a system for permanent supervision and surveillance of the fulfilment of the obligations of the operator, described in its manuals and approved operation specifications and limitations. Foreign operators must be included within this surveillance system.

(e) Operators that suspend their operators for more than two months or that have not started their operations a month after the issue of the AOC shall submit the decision to restart or start their operations pointing out the causes of the inactivity to the BDCA. Considering the different circumstances of each case, the BDCA will decide if the operator shall be subjected to a new certification process to be granted a new AOC.

(f) An Air Operator Certificate is issued by the BDCA for one year. It shall be renewed upon successful compliance with the surveillance established in accordance with subparagraph (d) above. The operator must have at least one aeroplane in its Operations Specifications to ensure the provision of services.

BCAR-OPS 1.185 Administrative requirements

(See AMC OPS 1.185(b))

(a) The Operator shall ensure that the following information is included in the initial application for an AOC and, when applicable, any variation or renewal applied for:

(1) The official name and business name, address and mailing address of the applicant, operations main base, and maintenance main base.

(2) A description of the proposed operation;

(3) A description of the management organisation;

(4) The name of the accountable manager and the address to contact him;

(5) The names of major postholders, including those managers responsible for flight operations, the maintenance system, crew training, ground operations, quality system and safety management (SMS), together with their qualifications, experience, and contact information; and;

(6) The Operations Manual;

(7) Training plan for all the organisation's personnel;

(8) Demonstration flight plan;

(9) Emergency evacuation plan;

(10) Inspection plan for the main base of operations, stations, aeroplane and facilities;

(11) Letter of compliance of the manual system.

(b) In respect of the operator's maintenance system only, the following information must be included in the initial application for an AOC and, when applicable, any variation or renewal applied for, and for each aeroplane type to be operated:

(1) The operator's Maintenance Organisation Manual.

(2) Safety Management Manual (SMM).

(3) The operator's aeroplane maintenance programme(s);

(4) The aeroplane technical log;

(5) Where appropriate, the technical specification(s) of the maintenance contract(s) between the operator and any BCAR-145 approved maintenance organisation;

(6) Description and number of aeroplanes (type, serial and registration number);

(c) The application for an initial issue of an AOC must be submitted at least 90 days before going to PHASE 2 (See BCAR OPS 1.190 (b)).

(d) The application for the variation of an AOC must be submitted at least 60 days, or as before the date of intended operation.

(e) The BDCA shall be notified, at least 10 days in advance, of a proposed change of a postholder of any of the six areas of responsibility defined.

BCAR-OPS 1.190 Phases of the issuing process of an air operator certificate (AOC)

The technical evaluation process, carried out by the BDCA to verify the compliance of the operator with the requirements established in BCAR-OPS 1, will be divided in the following phases:

(a) Pre-application (PHASE 1).- Procedure followed by the operator before the BDCA to obtain information regarding the existing requirements and procedures to be granted an AOC.

(b) Application (PHASE 2).- The operator submits the application to the authority to be issued an AOC in accordance with BCAR-OPS 1.185.

(c) Document evaluation (PHASE 3).- The BDCA goes through the documents submitted and informs the operator about the discrepancies found to be rectified.

(d) Technical demonstration (PHASE 4).- The BDCA conducts a technical evaluation over the aeroplanes, procedures, and facilities of the operator to determine if they are appropriate in accordance with the documentation submitted. In this phase, demonstration flights considered necessary by the Authority may be included, if necessary.

(e) Issue of the AOC (PHASE 5).- Legal action in which the authority issues the AOC and the operation specifications and limitations once operator's compliance with the requirements established in BCAR-OPS 1 has been verified.

BCAR-OPS 1.193 Initial application for an AOC

(a) The Operator applying for an AOC for the first time or applying for an amendment or change to the AOC shall follow the procedure at the same time it is being granted an operation certificate in a way there is a reasonable period to carry out the technical certification process.

(b) That period shall not be longer than 12 months, counted in working days, of the day the formal application (PHASE 2) is submitted and until the BDCA grants the corresponding AOC, except for special cases that, due to the nature of the process, it may be extended. The operator's certification process may be terminated if the BDCA perceives that the applicant has not been active within the last 90 calendar days.

(c) An AOC would not be granted until a valid copy of a Belize trade license is presented to be verified by the BDCA.

BCAR-OPS 1.194 Certifications, Authorizations and Prohibitions.

(BCAR OPS 1.194 (e) (1) (see AMC 1.194)

a. Any person who has completed the corresponding certification process to the satisfaction of the BDCA and who has obtained authorization to carry out airline operations must be issued an AOC.

b. Any person who has completed the corresponding certification process to the satisfaction of the BDCA and who has been authorized as a Commercial Operator must be issued an Operating Certificate.

c. No person can operate as an Airline or Commercial Operator if the Air Operator Certificate has not previously been issued by the BDCA.

d. A certificate holder may operate an aeroplane only within the geographic area authorized in its operations specifications.

e. It is expressly prohibited to offer any type of air operation without prior authorization from the BDCA.

1. Aeroplane operated under an agreement under Article 83 bis (single transfer of certain operations) (see AMC 1.194)

(i) An airplane operating under an agreement under Article 83 bis between the State of Registry and the State of the Operator shall carry on board a certified authenticated copy of the summary of the agreement, either in electronic or paper format.

f. No person may operate an aeroplane in violation of the Air Operator Certificate (AOC), Operating Certificate (OC), ratings, or operations specifications.

Appendix 1 to BCAR-OPS 1.175 Content and conditions of the Air Operator Certificate (AOC)

(a) The AOC is an official instrument, and it shall contain at least the following information:

(1) the State of the Operator and the issuing authority;

(2) the air operator certificate number and its expiration date;

(3) Operator's name, trading name (if different) and address of the principal place of business;

(4) date of issue and the name, signature, and title of the authority representative; and

(5) Location, in a controlled document carried on board, where the contact details of operational management can be found;

(b) An AOC holder shall keep an updated copy of this certificate together with the associated operation specifications and limitations at its main operations base.

(c) Air operator certificates and their operation specifications and limitations shall follow the layout and include the information in Appendix 3 to BCAR 1.175.

Appendix 2 to BCAR-OPS 1.175 Management and organisation of an AOC holder

(a) *General*. The Operator must have a sound and effective management structure to ensure the safe conduct of air operations. Managers or nominated postholders must have managerial competency together with appropriate technical/operational qualifications in aviation.

(b) Managers or nominated postholders.

(1) A description of the functions and responsibilities of the Managers or postholders, including their names, must be contained in the Operations Manual and the BDCA must be given notice in writing of any intended or actual change in appointments or functions.

(2) The operator must plan to ensure continuity of supervision by designating qualified substitutes in the absence of nominated postholders.

(3) A person nominated as Manager or postholder by the holder of an AOC must not be nominated as a postholder by the holder of any other AOC, unless acceptable to the Authorities concerned.

(4) Persons nominated as Managers or postholders must be contracted to work sufficient hours to fulfil the management functions associated with the scale and scope of the operation.

(c) Adequacy and supervision of staff

(1) *Crew members*. The operator must employ sufficient flight and cabin crew for the planned operation, trained and checked in accordance with Subpart N and Subpart O, as appropriate.

(2) *Ground staff:*

(i) The number of ground staff is dependent upon the nature and the scale of operations. Operations and ground handling departments must be staffed by trained personnel who have a thorough understanding of their responsibilities within the organisation.

(ii) The Operator contracting other organisations to provide certain services retains responsibility for the maintenance of proper standards. In such circumstances, a nominated postholder must be given the task of ensuring that any contractor employed meets the required standards.

(3) *Supervision*

(i) The number of supervisors to be appointed is dependent upon the structure of the operator and the number of staff employed. Their functions and responsibilities shall be defined, and their flight activities shall be planned for them to carry out the supervision responsibilities.

(ii) The duties and responsibilities of these supervisors must be defined, and any other commitments arranged so that they can discharge their supervisory responsibilities.

(iii) The supervision of crew members and ground staff must be exercised by individuals possessing experience and personal qualities sufficient to ensure the attainment of the standards specified in the operations manual.

(d) Accommodation facilities

(1) The Operator must ensure that working space available at each operating base is sufficient for personnel pertaining to the safety of flight operations. Consideration must be given to the needs of ground staff, those concerned with operational control, the storage and display of essential records, and flight planning by crews.

(2) Office services must be capable, without delay, of distributing operational instructions and other information to all concerned.

(e) *Documentation.* The operator must decide for the production of manuals, amendments and other documentation.

Appendix 3 to BCAR OPS 1.175 Air Operator Certificate (AOC)

(a). Air operator certificates (AOC) and their associated model specific operations specifications shall contain the minimum information required in tables (1) and (2) respectively.

(b). The air operator certificate and its associated operations specifications shall define the operations for which the operator is authorised.

(a) **AOC Template**

<table>
<tr><td colspan="3">AIR OPERATOR CERTIFICATE (AOC)</td></tr>
<tr><td>1
 
</td><td>Belize [2]

Belize Department of Civil Aviation [3]</td><td>1</td></tr>
<tr><td>AOC #: [4]

Expiry date: [5]</td><td>Operator Name [6]

Dba trading name [7]
Operator address: [8]

Telephone: [9]
Fax:
Email:</td><td>Operational points of contact:[10]
Contact details, at which operational management can be contacted without undue delay, are listed in
_____ [11]</td></tr>
<tr><td colspan="3">This certificate certifies that_____ [12] is authorized to perform commercial air operations, as defined in the attached operations specifications, in accordance with the General Operations Manual, the Belize Civil Aviation Regulations and related operating regulations and rules prescribed thereunder for the issuance of this certificate [13].</td></tr>
<tr><td>Date of issue: [14]</td><td colspan="2">Name and signature[15]:
Title:</td></tr>
</table>

Key:

1. For use of the State of the Operator.
2. Replace by the name of the State of the Operator.

3. Replace by the identification of the issuing authority of the State of the Operator.
4. Unique AOC number, as issued by the State of the Operator.
5. Date after which the AOC ceases to be valid (dd-mm-yyyy).
6. Replace by the operator's registered name.
7. Operator's trading name, if different. Insert "dba" before the trading name (for "doing business as").
8. Operator's principal place of business address.
9. Operator's principal place of business telephone and fax details, including the country code. Email to be provided if available.
10. The contact details include the telephone and fax numbers, including the country code, and the email address (if available) at which operational management can be contacted without undue delay for issues related to flight operations, airworthiness, flight and cabin crew competency, dangerous goods and other matters, as appropriate.
11. Insert the controlled document, carried on board, in which the contact details are listed, with the appropriate paragraph or page reference, e.g.: "Contact details are listed in the operations manual, Gen/Basic, Chapter 1, 1.1" or "… are listed in the operations specifications, page 1" or "… are listed in an attachment to this document.. "
12. Operator's registered name.
13. Insertion of reference to the appropriate civil aviation regulations.
14. Issuance date of the AOC (dd-mm-yyyy).
15. Title, name, and signature of the authority representative. In addition, an official stamp may be applied on the AOC.

(c). Operations specifications for each aeroplane model

(1). For each aeroplane model in the operator's fleet, identified by aeroplane make, model and series, the following list of authorisations, conditions and limitations shall be included: issuing authority contact details, operator name and AOC number, date of issue and signature of the authority representative, aeroplane model, types and area of operations, special limitations, and authorisations.

(2). The operations specifications layout referred to in paragraph (b) above shall be as follows:

OPERATIONS SPECIFICATIONS

Belize Department of Civil Aviation [1]

Telephone: +501-225-2014 Fax: +501-225-2533 Email: info@civilaviation.gov.bz

AOC #: [2] Operator name: [3] Dba trading name[3]: Date: [4]

Signature:

Aeroplane model: [5]

Types of operation: Commercial air transportation

❑ Passengers ❑ Cargo ❑ Other•.....[6]

Area(s) of operation: [7]

Special limitations: [8]

Special Authorizations	Yes	No	Specific approvals [9]	Remarks
Dangerous goods	❑	❑		
Low visibility operations Approach and landing Take-off	❑ ❑	❑ ❑	CAT[10] .... RVR: m DH: ft. RVR: [11] m	
Operational credit(s)	❑	❑	[12]	
RVSM [13] ❑ **N/A**	❑	❑		
EDTO [14] ❑ **N/A**	❑	❑	Threshold time [15:] minutes Maximum diversion time:[15] minutes	
AR navigation specifications for PBN operations	❑	❑	**16**	
Continuing airworthiness			17	

EFB	❑	❑	[18]	
Other [19] VFR at Night	❑	❑		
IFR	❑	❑		

Key:

1. Telephone contact details of the authority, including the country code. Email and fax to be provided if available.
2. Insert the associated AOC number.
3. Insert the operator's registered name and the operator's trading name, if different. Insert "dba" before the trading name (for "doing business as").
4. Issuance date of the operations specifications (dd-mm-yyyy) and signature of the authority representative.
5. Insert the ICAO designation of the aeroplane make, model and series, or master series, if a series has been designated (e.g., Boeing-737-3K2 or Boeing-777-232).
6. Other type of transportation to be specified (e.g., emergency medical service).
7. List the geographical area(s) of authorised operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries) as defined by the issuing authority.
8. List the applicable special limitations (e.g., VFR only, day only).
9. List in this column the most permissive criteria for each specific approval (with appropriate criteria).
10. Insert the applicable precision approach category (CAT II, or III). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category..
11. Insert the approved minimum take-off RVR in metres, or the equivalent horizontal visibility if RVR is not used. One line per approval may be used if different approvals are granted.
12. List the airborne capabilities (i.e., automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.
13. "Not applicable (N/A)" box may be checked only if the aeroplane maximum ceiling is below FL 290.
14. If extended diversion time operations (EDTO) specific approval does not apply based on the provisions in Chapter 4, 4.7, select "N/A". Otherwise, a threshold time and maximum diversion time must be specified.
15. The threshold time and maximum diversion time may also be listed in distance (NM), Details of each particular aeroplane-engine combination for which the threshold time is established and maximum diversion time has been granted may be listed under "remarks". One line per approval may be used if different approvals are granted.
16. Performance-based navigation (PBN): one line is used for each PBN AR navigation specification approval (e.g., RNP AR APCH), with appropriate limitations listed in the "Description" column.
17. Insert the name of the person/organization responsible for ensuring that the

continuing airworthiness of the aircraft is maintained and the regulation that requires the work, I.e. within the AOC regulation or a specific approval (e.g. EC2042/2003, Part M, Subpart G)

18. List the EFB functions used for the safe operation of aeroplanes and any applicable limitations.

19. Other authorisations or data can be entered here, using one line (or one multi-line block) per authorisation (e.g., special approach authorisation, approved navigation performance, instrument flight rules).

BCAR-OPS 1.195 Operational control and flight dispatch. Duties and responsibilities

(See Appendix 1 to BCAR-OPS 1.195)
(See AMC OPS 1.195 (a))
(See AMC OPS 1.195(c))

The operator shall:

(a) Establish and maintain a method of exercising operational control approved by the BDCA.

(b) Exercise the operational control over any flight operated under the terms of its AOC through the establishment of an operational control and flight dispatch centre (OCFDC) or equivalent unit.

(c) Assign enough flight dispatcher to the OCFDC to ensure appropriate operational control of each flight.

(d) In accepting proof of qualifications other than the option of holding of a flight operations officer/flight dispatcher licence, the BDCA, in accordance with the approved method of control and supervision of flight operations, shall require that, as a minimum, such persons meet the requirements specified in BCAR APL for the flight operations officer/flight dispatcher licence.

(e) The flight dispatcher shall be the holder of a license issued in accordance with the relevant licensing regulation, and

(1) Demonstrate to the operator knowledge of the following:

(i) the contents of the operations manual;

(ii) the radio equipment in the aeroplanes used; and

(iii) the navigation equipment in the aeroplanes used.

(2) Demonstrate to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorised to exercise flight supervision.

(i) the seasonal meteorological conditions and the sources of meteorological information;

(ii) the effects of meteorological conditions on radio reception in the aeroplanes used;

(iii) the peculiarities and limitations of each navigation system which is used by the operation; and

(iv) the aeroplane loading instructions.

(3) Demonstrate to the operator knowledge and skills related to human performance relevant to dispatch duties; and

(4) Demonstrate to the operator the ability to perform the duties specified in paragraph (e) below;

(f) The flight dispatcher has the following responsibilities:

(1) Carry out the activities established in BCAR-OPS 1.605 and prepare weight and balance documents before each flight according to BCAR-OPS 1.625;

(2) Prepare and submit the ATC flight plan to the ATS unit;

(3) Prepare the operational flight plan following BCAR-OPS 1.1060;

(4) Assist and/or coordinate with the pilot-in-command the preparation of the flight, following BCAR-OPS 1.290;

(5) Provide the pilot in command with the updated reports available or information about the airport condition and the irregularities in the navigation facilities that could affect the flight;

(6) Before the flight, provide the pilot in command with all weather reports or forecasts the dispatcher has and that may affect the safety of the flight such as clear air turbulence, storms, wind shear for the route to be to be taken and the airports to be used;

(7) During the flight, the person in charge of flight operations shall provide the pilot in command with all additional information on weather conditions and the irregularities in the facilities or services that may affect flight safety in addition to any other amendment to the flight plan required during the flight.

(8) The flight dispatcher shall give continuation to the flight from its beginning to the end.

(9) The operator shall ensure that each flight dispatcher is provided with conversion, difference, or familiarisation training and recurrent training as appropriate, according to Appendix 1 to BCAR-OPS 1.195.

(10) In the case of an emergency, the flight dispatcher shall implement the procedures established in the operations manual, avoiding measures incompatible with ATC procedures.

(11) Notify the appropriate ATS unit when the position of the aeroplane cannot be determined by an aeroplane tracking capability and attempts to establish communication are unsuccessful.

(12) Communicate to the pilot in command the information related to operational safety that may be needed for the safe conduct of the flight, including that related to the amendments to the flight plan that are required during the flight.

(f) The operations control and flight dispatch centre shall not adopt any measure incompatible with the procedures established by:

(1) Air traffic Services (ATS),

(2) Meteorological service,

(3) Communication service.

(g) A flight dispatcher must first coordinate with the relevant ATS section, before conveying safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary during the flight (See ACJ OPS 1.195 (g)).

(h) A flight dispatcher who has stopped providing his/her services during 12 consecutive months shall not be assigned functions unless he/she fulfils the training provisions in Appendix 1 to BCAR OPS 1.195 and applicable sections of the BCAR-APL.

(i) A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

(1) Satisfactorily completed the operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations specified in 1.175 (l).
(2) made, within the preceding 12 months, at least a one-way qualification flight in the flight crew compartment of an aeroplane over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

BCAR OPS 1.196 Aircraft Tracking

a) The operator shall establish an aircraft tracking capability to track aeroplanes throughout its area of operations.

b) The operator shall track the position of an aeroplane through automated reporting at least every 15 minutes for the portion(s) of the in-flight operation(s) that is planned in an oceanic area(s) under the following conditions:

i. the aeroplane has a maximum certificated take-off mass of over 45 500 kg and a seating capacity greater than 19; and

ii. where an ATS unit obtains aeroplane position information at greater than 15-minute intervals.

c) Notwithstanding the provisions in (b) and (c), the State of the Operator may, based on the results of an approved risk assessment process implemented by the operator, allow for variations to automated reporting intervals. The process shall demonstrate how risks to the operation, resulting from such variations, can be managed and shall include at least the following:

i. capability of the operator's operational control systems and processes, including those for contacting ATS units;

ii. overall capability of the aeroplane and its systems;

iii. available means to determine the position of, and communicate with, the aeroplane;

iv. frequency and duration of gaps in automated reporting;

v. human factors consequences resulting from changes to flight crew procedures; and

vi. specific mitigation measures and contingency procedures.

(d) The operator shall establish procedures, approved by the BDCA, for the retention of aircraft tracking data to assist SAR in determining the last known position of the aircraft.

BCAR OPS 1.198 Aeroplane communication with OCFDC

(a) Each operator carrying out operations under BCAR OPS 1 shall prove to the BDCA that its aeroplane with a maximum take-off weight of 5 700 Kg and all turbine aeroplane:

(1) Maintain appropriate radiocommunication both ways through the entire flight between each aeroplane and the dispatch office or by any other means of communication approved by the BDCA; and

(2) Maintain appropriate radiocommunication both ways between each aeroplane and air traffic control unit.

(b) The communication system between the aeroplane and the dispatch office shall be independent of the communication systems of the ATC unit.

BCAR-OPS 1.200 Operations Manual

a) The operator must provide for the use and guidance of operations personnel, an operation manual, in accordance with Subpart P. The operations manual will be modified or revised, whenever necessary, to ensure that the information and content is up to date. Amendments to the operation manual will be indicated by a vertical bar in the left margin, next to the line, section, or figure that is being affected. The personnel using such manual must be notified of all amendments and revisions of this Manual.

b) The BDCA will inform of the requirements for the Operator to provide a copy of the operations manual, together with all the amendments and revisions to submit it for review and acceptance and where required, approval. Moreover, the operator must include in the Operations Manual all mandatory information that may be required by the BDCA. (See Appendix 1 of BCAR OPS 1.1045).

BCAR-OPS 1.205 Competence of the operations personnel

a) The operator must ensure that all assigned personnel, or those who have direct participation in ground and flight operations, are duly instructed, have demonstrated their ability to perform their duties, know their responsibilities and the relationship between their duties and the operation as a whole.

b) A flight operations officer/ flight dispatcher assigned to duty should maintain complete familiarization with all features of the operation which are pertinent to such duties, including knowledge and skills related to human performance.

c) A flight operations officer/flight dispatcher should not be assigned to duty after 12 consecutive months of absence from such duty unless the provisions of the BCAR-APL are met.

BCAR-OPS 1.210 Establishment of procedures

(See AMC OPS 1.210)

(a) The Operator shall establish procedures and instructions, for each aeroplane type, containing ground staff and crew members' duties for all types of operation on the ground and in flight.

(b) The Operator shall establish a checklist system to be used by crew members for all phases of operation of the aeroplane under normal, abnormal, and emergency conditions as applicable, to ensure that the operating procedures in the Operations Manual are followed. The design and utilization of checklists shall observe Human Factors principles.

(c) The Operator shall not require a crew member to perform any activities during critical phases of the flight other than those required for the safe operation of the aeroplane.

BCAR-OPS 1.215 Use of air traffic services

The Operator shall ensure that Air Traffic Services are used for all flights whenever available.

BCAR-OPS 1.216 In-flight operational instructions

(See AMC OPS 1.216)

The Operator shall ensure that its in-flight operational instructions involving a change to the air traffic flight plan shall, when practicable, be coordinated with the appropriate Air Traffic Service unit before transmission to an aeroplane.

BCAR-OPS 1.220 Authorization of aerodromes by the operator

(See AMC OPS 1.220)

(a) The Operator shall only authorise use of aerodromes that are adequate for the type(s) of aeroplane and operation(s) concerned.

(b) Subject to their published conditions of use, aerodromes and their services and facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

(c) The operator, as part of its safety management system, will evaluate the level of protection available provided by the rescue and firefighting services (RFFS) at the aerodrome provided for in the operational flight plan, to ensure that there is an acceptable level of protection for the aeroplane to be used. (See BCAR OPS 1.220).

(d) Information on the level of RFFS protection that the operator considers acceptable will be included in the operations manual.

BCAR-OPS 1.225 Aerodrome operating minima

(a) The Operator shall specify aerodrome operating minima, established in accordance with BCAR-OPS 1.430 for each departure, destination or alternate aerodrome authorised to be used in accordance with BCAR-OPS 1.220.

(b) Any increment imposed by the BDCA must be added to the minima specified in accordance with subparagraph (a) above.

(c) The minima for a specific type of approach and landing procedure are considered applicable if:

(1) The ground equipment shown on the respective chart required for the intended procedure is operative;

(2) The aeroplane systems required for the type of approach are operative;

(3) The required aeroplane performance criteria are met; and

(4) The crew is qualified accordingly.

(d) A flight shall not be continued towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in compliance with the operating minima established for a such aerodrome in accordance with BCAR OPS 1.430.

(e) An instrument approach shall not be continued below 300 m (1 000 ft.) above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome operating minima.

(f) If, after entering the final approach segment or after descending below 300 m (1 000 ft.) above the aerodrome elevation, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an aeroplane shall not continue its approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

BCAR-OPS 1.230 Instrument departure and approach procedures

(a) The Operator shall ensure that instrument departure and approach procedures established by the BDCA in which the aerodrome is located are used.

(b) Notwithstanding subparagraph (a) above, a pilot in command may accept an ATC clearance to deviate from a published departure or arrival route, provided obstacle clearance criteria are observed and full account is taken of the operating conditions. The final approach must be flown visually or in accordance with the established instrument approach procedure.

(c) Different procedures to those required to be used in accordance with subparagraph (a) above may only be implemented by The Operator provided they have been approved by the State in which the aerodrome is located, if required, and accepted by the BDCA.

BCAR-OPS 1.235 Noise abatement procedures

(a) The Operator shall establish operating procedures for noise abatement during flight operations in compliance with ICAO PANS OPS Volume 1 (Doc 8168–OPS/611).

(b) Take-off climb procedures for noise abatement specified by The Operator for any one aeroplane type should be the same for all aerodromes.

BCAR-OPS 1.237 Reserved

BCAR-OPS 1.238 Aeroplane operating procedures for landing performance

A landing approach must not be continued below 1000 ft above aerodrome elevation unless the pilot-in-command is satisfied that available runway condition and aeroplane performance information indicates that a safe landing can be made.

BCAR-OPS 1.240 Routes and areas of operation

(a) The Operator shall ensure that operations are only conducted along such routes or within such areas, for which:

1. Ground facilities and services, including meteorological services, are provided which are adequate for the planned operation;

2. The performance of the aeroplane intended to be used is adequate to comply with minimum flight altitude requirements;

3. The equipment of the aeroplane intended to be used meets the minimum requirements for the planned operation;

4. Appropriate maps and charts are available (See BCAR OPS 1.135 (a) (9));

5. If two-engine aeroplanes are used, adequate aerodromes are available within the time/distance limitations of BCAR-OPS 1.245.

6. If single-engine aeroplanes are used, surfaces are available that permit a safe forced landing to be executed.

(b) The Operator shall ensure that operations are conducted in accordance with any restriction on the routes or the areas of operation, imposed by the BDCA.

BCAR-OPS 1.241 Operation in defined airspace with Reduced Vertical Separation Minima (RVSM)

(See Appendix 1 to BCAR OPS 1.241)
(See Annex 2, Section 2 to BCAR-OPS 1- Special Operations)

(a) The Operator shall not operate an aeroplane in defined portions of airspace where, based on regional air navigation agreements, a vertical separation minimum of 300m (1 000 ft.) applies unless approved to do so by the BDCA (RVSM approval). (See BCAR-OPS 1.872)

(b) To obtain RVSM approval, the operator must demonstrate:

1. The vertical navigation performance capacity of the aeroplane fulfils the requirements specified in Annex 2 Section 2 of BCAR OPS 1 “Special operations”.

2. The operator has established appropriate procedures regarding continued practices and airworthiness programmes (maintenance and repairs).

3. The operator has established appropriate procedures and training (initial, recurrent) for the flight crew in RVSM airspace operations.

4. The operator has established appropriate procedures and training (initial, recurrent) for dispatchers and maintenance personnel.

(c) The operator shall establish a procedure to report significant altitude deviations while operating in assigned RVSM airspace (see appendix 7 of Annex, section 2 of BCAR OPS 1). These reports shall be:

(1) notified by the operator to the BDCA of the State of the Operator within 72 hours after the entry of the crew involved in the operator’s main base;

(2) notify the State of Registry within the period time established by that State.

(d) The operator shall adopt immediate corrective measures for individual aeroplanes or groups of an aeroplane with the same type that according to the reports do not fulfil altitude maintenance requirements for operations in assigned RVSM air space.

(e) The operator approved in its Operations Specifications to operate in RVSM airspace must develop procedures that allow, with respect to the approved aeroplane, in addition to what is established in paragraphs (a), (b) and (c) of the BCAR OPS 1.241 provide and evaluate the following:

(1) Procedure to receive height-keeping performance reports issued by surveillance agencies established in accordance with BCAR ATS.

(2) Adopt immediate corrective measures in the manner established in section d) of BCAR OPS 1.241.

(f) The operator approved in its Operations Specifications to operate in RVSM airspace must submit height-keeping performance surveillance once every two years, or at intervals of 1,000 flight hours per aeroplane, whichever is longer. Throughout both intervals, at least two aeroplanes from each group of approved aeroplane types. If aeroplane type groups consist of a single aeroplane, that aeroplane shall be subject to surveillance within the specified period.

(g) To satisfy the requirement in paragraphs (e) and (f), surveillance data from any regional surveillance program established in accordance with BCAR ATS, chapter 3 may be used.

(h) The Authority responsible for airspaces in which RVSM is applied and having issued specific RVSM approvals to its Air Operators, will take the necessary measures for those operators that operate in RVSM airspace without a specific valid RVSM approval.

(i) For surveillance situations, these provisions and procedures consider both those situations in which the aeroplane in question is operating without the approval of its State in its airspace, and the situations in which the same aeroplane is operating without the approval of its State necessary approval in the airspace of another State.

BCAR-OPS 1.243 Operations in areas with specific navigation performance (PBN)

(See AMC OPS 1.243)
(See Annex 2, Section 2 to BCAR OPS 1Special Operations)

(a) Based on air navigation regional agreements, the operator shall not operate an aeroplane in defined areas of the airspace, where minimum navigation performance specifications are established, unless:

(1) It has been approved by the BDCA to carry out special operations in accordance with the operation specifications.

(2) It has the navigation equipment to operate in accordance with the specifications established.

(b) The aeroplane navigation performance capability fulfils the requirements specified in Annex 2 section 2 BCAR-OPS 1.”Special Operation” specified in Annex 2 section 2 of BCAR OPS 1 “Special Operation”.

(c) The operator shall establish a training programme (initial, recurrent, etc.) for flight crews and appropriate material proving that the operational practices and procedures and training in operations in the airspace are defined as in the operation specification and limitations.

(d) The operator has established appropriate procedures and training (initial, recurrent) for dispatchers and maintenance personnel regarding operations in airspace defined as in the operation specification and limitations.

(e) The operator shall establish a continued airworthiness system for the airborne navigation equipment installations for operations in airspace defined as in the operation specification and limitations.

(f) The operator shall establish a procedure to report significant navigation deviations while operating in airspace defined as in the operation specification and limitations. The reports have to be:

(1) notify by the operator to the BDCA of the State of the Operator within 72 hours after the crew involved has returned to the main base of the operator;

(2) notify to the State of Registry within the term established by that State;

(3) The operator shall adopt immediate corrective measures for individual aeroplanes or groups of aeroplane types that, according to the reports, do not meet the navigation requirements for operations in airspace defined in the operation specifications and limitations.

(g) The operator shall submit a maintenance programme to be approved;

(h) The Operator of an aeroplane operating in areas referred to in (a) shall ensure that all contingency procedures, specified by the authority responsible for the airspace concerned, have been included in the Operations Manual.

(i) The BDCA will issue a specific approval for navigation specifications for PBN-based operations with authorization required (AR).

BCAR-OPS 1.245 Maximum distance from an adequate aerodrome for two-engine aeroplanes without an EDTO approval.
(See AMC OPS 1.245(a))
(See AMC OPS 1.245(a) (2))

(a) Unless specifically approved by the BDCA according to BCAR-OPS 1.246 (a) (EDTO operational approval) The Operator shall not operate a two-engine aeroplane over a route which contains a point further from an adequate aerodrome than, in the case of:

(1) Performance Class A aeroplanes with either:

(i) A maximum approved passenger seating configuration of 20 or more; or

(ii) A maximum take-off weight of 45 360 kg or more, the distance flown in 60 minutes at the one engine- inoperative cruise speed determined in accordance with subparagraph (b) below;

(2) Performance Class A aeroplanes with:

(i) A maximum approved passenger seating configuration of 19 or less and;

(ii) A maximum take-off weight less than 45 360 kg, the distance flown in 120 minutes or, if approved by the BDCA up to 180 minutes for turbo-jet aeroplanes, at the one-engine-inoperative cruise speed determined in accordance with subparagraph (b) below (See ACJ OPS 1.245(a) (2));

(3) Performance Class B or C aeroplanes:

(i) The distance flown in 120 minutes at the one-engine-inoperative cruise speed determined in accordance with subparagraph (b) below; or

(ii) 300 nautical miles, whichever is less (See AMC OPS 1.245(a)

(b) The Operator shall determine a speed for the calculation of the maximum distance to an adequate aerodrome for two-engine aeroplane type or variant operated, not exceeding VMO, based upon the true airspeed that the aeroplane can maintain with one-engine-inoperative under the following conditions:

(1) International Standard Atmosphere (ISA);

(2) Level flight:

(i) For turbojet aeroplanes at:

(A) FL 170; or

(B) At the maximum flight level to which the aeroplane, with one engine inoperative, can climb, and maintain, using the gross rate of climb specified in the AFM, whichever is less.

(ii) For propeller-driven aeroplanes at:

(A) FL 80 ; or

(B) At the maximum flight level to which the aeroplane, with one engine inoperative, can climb, and maintain, using the gross rate of climb specified in the AFM, whichever is less.

(3) Maximum continuous thrust or power on the remaining operating engine;

(4) An aeroplane weight not less than that resulting from:

(i) Take-off at sea level at maximum take-off mass; and

(ii) All engines climb to the optimum long-range cruise altitude; and

(iii) All engines cruise at the long-range cruise speed at this altitude, until the time elapsed since take-off is equal to the applicable threshold prescribed in subparagraph (a) above.

(c) The Operator must ensure that the following data, specific to each type or variant, is included in the Operations Manual:

(1) The one-engine-inoperative cruise speed determined in accordance with subparagraph (b) above; and

(2) The maximum distance from an adequate aerodrome determined in accordance with subparagraphs (a) and (b) above.

(d) The speeds and altitudes (flight levels) specified above are only intended to be used for establishing the maximum distance from an adequate aerodrome.

BCAR-OPS 1.246 Additional requirements for operations by turbine-engine aeroplanes beyond 60 minutes to an en-route alternate aerodrome including extended diversion time operations (EDTO)

(See Annex 2 Section 2 of BCAR OPS 1 – Special Operations)
(See AMC OPS 1.246)

(a). Requirements for operations beyond 60 minutes to an en-route alternate aerodrome. Operators conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome shall ensure that:

(1). for all aeroplanes:

(i). en-route alternate aerodromes are identified; and

(ii). the most up-to-date information is provided to the flight crew on identified en-route alternate aerodromes, including operational status and meteorological conditions;

(2). for aeroplanes with two turbine engines, the most up-to-date information provided to the flight crew indicates that conditions at identified en-route alternate aerodromes will be at or above the operator's established aerodrome operating minima for the operation at the estimated time of use.

(3). In addition to the requirements in BCAR OPS 1.246(a), all operators shall ensure that the following are taken into account and provide the overall level of safety intended by the provisions of this Regulation:

(i). operational control and flight dispatch procedures;

(ii). operating procedures; and

(iii). training programmes.

(b). Requirements for extended diversion time operations (EDTO)

(1). Unless the operation has been specifically approved by the BDCA, an aeroplane with two or more turbine engines shall not be operated on a route where the diversion time to an en-route alternate aerodrome from any point on the route, calculated in ISA and still-air conditions at the one-engine-inoperative cruise speed for aeroplanes with two turbine engines and at the all engines operating cruise speed for aeroplanes with more than two turbine engines, exceeds a threshold time established for such operations by that BDCA. The applicable time threshold established for each particular aeroplane and engine combination will be indicated in the specific approval.

(2). When issuing a specific approval to conduct extended diversion time operations, the BDCA shall specify the maximum diversion time granted to the operator for each particular aeroplane and engine combination.

(3). When approving the appropriate maximum diversion time for the operator of a particular aeroplane type engaged in extended diversion time operations, the BDCA shall ensure that:

(i). for all aeroplanes: the operator has in place procedures to prevent the aeroplane being dispatched on a route with diversion times beyond the capability of EDTO significant system time limitation, if any, indicated in the aeroplane flight manual (directly or by reference) and

(ii). for aeroplanes with two turbine engines: the aeroplane is EDTO certified.

(4). Notwithstanding the provisions in BCAR OPS 1.246(b)(3)(i)), the BDCA may, based on the results of a specific safety risk assessment conducted by the operator demonstrates how an equivalent level of safety will be maintained, approve operations beyond the time limits of the most time-limited system. The specific safety risk assessment shall include at least the:

(i). capabilities of the operator;

(ii). overall reliability of the aeroplane;

(iii). reliability of each time-limited system;

(iv). relevant information from the aeroplane manufacturer; and

(v). specific mitigation measures.

(5). For aeroplanes engaged in EDTO, the additional fuel required by Appendix 1 to BCAR OPS 1.255(a) shall include the fuel necessary to comply with the EDTO critical fuel scenario as established by the BDCA.

(6). A flight shall not proceed beyond the threshold time in accordance with BCAR OPS 1.246(b) unless the identified en-route alternate aerodromes have been re-evaluated for availability and the most up-to-date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the operator's established aerodrome operating minima for the operation. If any conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action shall be determined.

(7). The BDCA shall, when approving maximum diversion times for aeroplanes with two turbine

engines, ensure that the following are taken into account in providing the overall level of safety intended:

(i). reliability of the propulsion system;

(ii). airworthiness certification for EDTO of the aeroplane type; and

(iii). EDTO maintenance programme.

(iv). It is required that the special topics of maintenance necessary for EDTO be contemplated in the Maintenance Control Manual or the EDTO operator's manual as necessary.

BCAR-OPS 1.250 Establishment of minimum flight altitudes

(See AMC OPS 1.250)

(a) The Operator shall establish minimum flight altitudes and the methods to determine those altitudes for all route segments to be flown which provide the required terrain clearance taking into account the requirements of Subparts F to I. The operator shall specify the method by which it is intended to determine minimum flight altitudes for operations conducted over routes for which minimum flight altitudes have not been established by the State flown over or the responsible State, and shall include this method in the operations manual. The minimum flight altitudes determined in accordance with the above method shall not be lower than specified in Annex 2.

(b) Where minimum flight altitudes established by States overflown are higher than those established by the operator, the higher values shall apply.

(c) In fulfilling the requirements prescribed in subparagraph (d) above due consideration shall be given to:

(1) Corrections for temperature and pressure variations from standard values;

(2) ATC requirements; and

(3) Any foreseeable contingencies along the planned route.

BCAR-OPS 1.255 Fuel policy

(See Appendix 1 to OPS 1.255)
(See AMC to OPS 1.255)
(See AMC to OPS 1.255(c) (3) (i))

(a) An aeroplane shall carry a sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.

(b) The amount of usable fuel to be carried shall, as a minimum, be based on:

(1) The following data:

(i) Current aeroplane-specific derived from a fuel consumption monitoring system, if available, or

(ii) Current aeroplane-specific data are not available, data provided by the aeroplane manufacturer; and

(2) The operating conditions for the planned flight including:

(i) Realistic aeroplane fuel consumption data;

(ii) Anticipated aeroplane mass;

(iii) Current meteorological reports or a combination of current reports and forecasts;

(iv) Air Traffic Service procedures, restrictions and anticipated delays; and

(v) Notice to airmen;

(vi) The effect of deferred maintenance items and/or configuration deviations.

(c) The Operator shall ensure that the pre-flight calculation of usable fuel required for a flight includes:

(1) Taxi fuel which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxiliary power unit (APU) fuel consumption;

(2) Trip fuel which shall be the amount of fuel required to enable the aeroplane to fly from take-off, or the point of inflight re-planning, until landing at the destination aerodrome taking into account the operating conditions of 1.255 (b) (2).

(3) Contingency fuel which shall be the amount of fuel required to compensate for unforeseen factors. It shall be five percent of the planned trip fuel or of the fuel required from the point of in-flight re-planning based on the consumption rate used to plan the trip fuel but, in any case, shall not be lower than the amount required to fly for five minutes at holding speed at 450m (1500 ft) above the destination aerodrome in standard conditions.

(4) Destination alternate fuel. Which shall be:

(i) Where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to:

a. Perform a missed approach at the destination aerodrome

b. .Climb to the expected cruising altitude

c. Fly the expected routing;

d. Descend to the point where the expected approach is initiated; and

e. Conduct the approach and landing at the destination alternate aerodrome, or

(ii) Where two destination alternate aerodromes are required, the amount of fuel, as calculated in 1.255 (c) (4) (i), required to enable the aeroplane to proceed to the

destination alternate aerodrome which requires the greater amount of alternate fuel; or

(iii) Where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450m (1 500 ft) above destination aerodrome elevation in standard conditions, or

(iv) Where the aerodrome of intended landing is an isolated aerodrome:

a. For a reciprocrating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 percent of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; or

b. For a turbine-engined aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;).

(5) Final reserve fuel; (which shall be the amount of fuel calculated using the estimated mass on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required:

(i) For a reciprocrating engine aeroplane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the BDCA; or

(ii) For a turbine-engined aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m (1500 ft) above aerodrome elevation in standard conditions;).

(6) Additional fuel, if required by the type of operation (e.g. EDTO); allow the aeroplane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss of pressurization, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route;

i) fly for 15 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions; and

ii) make an approach and landing.

iii) allow an aeroplane engaged in EDTO to comply with the EDTO critical fuel scenario as established by the BDCA.

iv) meet additional requirements not covered above.

(7) Discretionary fuel, which shall be the extra fuel if required by the pilot in command.

(d)The Operator shall ensure that in-flight dispatch procedures for calculating usable fuel required when a flight must proceed along a route or to a destination other than originally planned includes:

(1) Trip fuel for the remainder of the flight;

(2) Reserve fuel consisting of:

(i) Contingency fuel;

(ii) Alternate fuel, if a destination alternate is required. (This does not preclude the selection of the departure aerodrome as the destination alternate);

(iii) Final reserve fuel; and

(iv) Additional fuel, if required by the type of operation (e.g. EDTO); and

(3) Extra fuel if required by the pilot in command.

(c) flight shall not commence unless the usable fuel on board meets the requirements in **BCAR OPS 1.255 c) 2,3,4,5** if required and shall not continue from the point of in-flight re-planning unless the usable fuel on board meets the requirements in **BCAR OPS 1.255 c) 2,3,4,5** if required.

(f) Notwithstanding the provisions in **BCAR OPS 1.255 c) 2,3,4,5**, the BDCA based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve variations to the pre-flight fuel calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel, and additional fuel. The specific safety risk assessment shall include at least the:

i) flight fuel calculations
ii) capabilities of the operator to include

a) a data-driven method that includes a fuel consumption monitoring programme; and/or.
b) the advanced use of alternate aerodromes; and

iii) specific mitigation measures

(g) The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

BCAR-OPS 1.257 In-flight fuel management

(a) The operator must establish procedures, approved by the BDCA, to ensure that fuel checks and fuel management are carried out in flight.

(b) The pilot-in-command shall continually ensure that the amount of usable fuel remaining on board is not less than the amount of fuel required to proceed to an aerodrome at which a safe landing can be made with final reserve fuel expected remaining upon landing.

(c) The pilot-in-command shall request information from ATC regarding delays when unforeseen circumstances may result in a landing at the destination aerodrome with less than the final reserve fuel plus the fuel necessary to proceed to an alternate aerodrome or the fuel necessary to fly to an isolated airfield.

(d) The pilot in command will notify ATC of a minimum fuel situation by declaring MINIMUM FUEL when, having an obligation to land at a specific aerodrome, when the pilot calculates that any change in the existing clearance for that aerodrome may result in a landing with less than the fuel required expected final reserve.

(1) The MINIMUM FUEL statement informs ATC that all of the anticipated aerodrome options have been narrowed down to a specific intended landing aerodrome and that any change from the existing clearance may result in a landing with less than the final anticipated reserve fuel. This situation is not an emergency but an indication that an emergency could occur if there is further delay.

(e) The pilot-in-command shall declare a fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated amount of usable fuel would be available upon landing at the nearest aerodrome where a safe landing can be made is less than the expected final reserve fuel quantity.

(1) The term "MAYDAY FUEL" describes the nature of the emergency conditions as prescribed in Annex 10, Volume II.

BCAR-OPS 1.260 Carriage of persons with reduced mobility

(See AMC OPS 1.260)

(a) The Operator shall establish procedures for the carriage of Persons with Reduced Mobility (PRMs).

(b) The Operator shall ensure that PRMs are not allocated, nor occupy, seats where their presence could:

(1) Impede the crew in their duties;

(2) Obstruct access to emergency equipment; or

(3) Impede the emergency evacuation of the aeroplane.

(c) The pilot in command must be notified of the number and location when PRMs are to be carried on board.

BCAR-OPS 1.265 Carriage of inadmissible passengers, deportees, or persons in custody

The Operator shall establish procedures for the transportation of inadmissible passengers, deportees or persons in custody to ensure the safety of the aeroplane and its occupants. The pilot in command must be notified when the above mentioned persons are to be carried on board.

BCAR-OPS 1.270 Stowage of baggage and cargo

(See Appendix 1 to BCAR-OPS 1.270)
(See AMC OPS 1.270)

(a)The Operator shall establish procedures to ensure that only such hand baggage is taken into the passenger cabin as can be adequately and securely stowed.

(b)The Operator shall establish procedures to ensure that all baggage and cargo on board, which might cause injury or damage, or obstruct aisles and exits if displaced, is placed in stowages designed to prevent movement.

BCAR-OPS 1.271 Operational Safety of the Cargo Compartment

1) Transport of Items in the Cargo Compartment

2) The BDCA will ensure that the operator establishes policies and procedures for the transport of items in the cargo compartment, including the performance of a specific safety risk assessment. The evaluation will include at least the following:

a. Hazards related to the properties of the items to be transported;
b. Operator capabilities;
c. Operational considerations (eg. area of operations, diversion time);
d. Capabilities of the aeroplane and its systems (eg. cargo compartment fire suppression capability);
e. Containment characteristics of unit load devices;
f. Packing and packaging;
g. Security of the supply chain of items to be transported; Y
h. Quantity and distribution of dangerous goods to be transported.

BCAR-OPS 1.272 Fire Protection

1) The airplane flight manual or other documents for the operation of the airplane will contain the elements of the fire protection system of the cargo compartment or compartments approved by the State of Design or the State of Registry and a summary of the standards cargo compartment fire protection certification certificates that have been demonstrated.

2) The operator will establish policies and procedures regarding the articles that will be transported in the cargo compartment. This will give a reasonable degree of certainty that, in the event of a fire involving those items, the aeroplane's cargo compartment fire protection design elements can detect and sufficiently extinguish or contain it until the aeroplane makes a safe landing.

BCAR-OPS 1.280 Passenger seating

(See AMC OPS 1.280)
(See AMC OPS 1.280)

The operator must establish procedures to ensure that passengers are seated in such a way that if an emergency evacuation is necessary, they can be better assisted and not impede the evacuation of the aeroplane.

BCAR-OPS 1.285 Passenger briefing

The Operator shall ensure that:

(a) *General*.

(1) Passengers are given a verbal briefing about safety matters. Parts or all the briefing may be provided by an audio-visual presentation, so they are aware of the location and use of emergency equipment.

(2) Passengers are provided with a safety briefing card on which picture type instructions indicate the operation of emergency equipment and exits likely to be used by passengers.

(b) *Before take-off*

(1) Passengers are briefed on the following items if applicable:

(i) Smoking regulations;

(ii) Back of the seat to be in the upright position and tray table stowed;

(iii) Location of emergency exits;

(iv) Location and use of floor proximity escape path markings;

(v) Stowage of hand baggage;

(vi) Restrictions on the use of portable electronic devices;

(vii) The location and the contents of the safety briefing card; and

(viii) The use of safety belts and/or safety harnesses.

(ix) Other emergency equipment supplied for individual use.

(2) Passengers receive a demonstration of the following:

(i) The use of safety belts and/or safety harnesses, including how to fasten and unfasten the safety belts and/or safety harnesses.

(ii) The location and use of oxygen equipment if required (See BCAR-OPS 1.770 and BCAR-OPS 1.775). Passengers must also be briefed to extinguish all smoking materials when oxygen is being used; and

(iii) The location and use of life jackets if required (See BCAR-OPS 1.825).

(iv) Location and how to open emergency exits;

(v) No smoking on the aeroplane.

(c) *After take-off*

(1) Passengers are reminded of the following if applicable:

(i) Smoking regulations; and

(ii) The use of safety belts and/or safety harnesses including the safety benefits of having safety belts fastened when seated irrespective of seat belt sign illumination.

(d) *Before landing*

(1) Passengers are reminded of the following if applicable:

(i) Smoking regulations;

(ii) Use of safety belts and/or safety harnesses;

(iii) Back of the seat to be in the upright position and tray table stowed;

(iv) Re-stowage of hand baggage; and

(v) Restrictions on the use of portable electronic devices.

(e) *After landing*

(1) Passengers are reminded of the following:

(i) Smoking regulations; and

(ii) Use of safety belts and/or safety harnesses.

(f) In an emergency during a flight, passengers are instructed in such emergency action as may be appropriate to the circumstances.

BCAR-OPS 1.289 Services and Facilities for Operation

a) The operator will take the appropriate measures so that a flight does not start unless it has been previously determined by all reasonable means. The land and maritime facilities or services available and required for that flight, for the safety of the aeroplane and protection of its passengers are appropriate to the type of operation that is carried out in accordance with which the flight is to be carried out and function properly for that purpose.

b) The operator must ensure that it does not start or continue a flight according to the planned operation unless it has been determined by all reasonable means that the airspace on the planned route, from the aerodrome of departure to the aerodrome of arrival, including the planned take-off, destination and en-route alternate aerodromes, can be used safely. When attempting to operate over or near conflict zones, a risk assessment must be carried out and appropriate mitigation measures must be taken for the safety of the flight.

c) The operator will take the appropriate measures to notify without any delay any deficiency of the facilities and services, detected during its operations directly to the BDCA.

d) Subject to their published conditions of use, aerodromes and their facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

e) The operator shall, as part of its safety management system, assess the level of rescue and fire fighting service (RFFS) protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane intended to be used.

f) Information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the operations manual.

BCAR-OPS 1.290 Flight preparation

(a) The Operator shall ensure that an operational flight plan is completed for each intended flight.

(b) The pilot in command shall not commence a flight unless he/she is satisfied that:

(1) The aeroplane is airworthy and the appropriate certificates (i.e. airworthiness, registration) are on board the aeroplane;

(2) The aeroplane is not operated contrary to the provisions of the Configuration Deviation List (CDL);

(3) The instruments and equipment required for the flight to be conducted, in accordance with Subparts K and L, are available;

(4) The instruments and equipment are in operable condition except as provided in the MEL;

(5) An aeroplane maintenance release has been obtained;

(6) Those parts of the Operations Manual required to carry out the flight are available;

(7) The documents, additional information and forms required to be available by BCAR-OPS 1.125 and BCAR-OPS 1.135 are on board;

(8) Current maps, charts and associated documentation or equivalent data are available to cover the intended operation of the aeroplane including any diversion, which may reasonably be expected. This shall include any conversion tables necessary to support operations where metric heights, altitudes and flight levels must be used;

(9) Ground facilities and services required for the planned flight are available and adequate.

(10) The provisions specified in the Operations Manual with respect to fuel, oil and oxygen requirements, minimum safe altitudes, aerodrome operating minima and the availability of alternate aerodromes when ~~are~~ required can be complied with for the planned flight;

(11) The weight of the aeroplane and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;

(12) The load is properly distributed and safely secured;

(13) The weight of the aeroplane at the start of the take-off run is such that the flight can be conducted in accordance with Subparts F to I, as applicable; and

(14) Any operational limitation in addition to those covered by subparagraphs (9) and (13) above can be complied with.

BCAR OPS 1.292 Additional requirements for single pilot operations under the instrument flight rules
(IFR) or at night.

(a) An aeroplane shall not be operated under the IFR or at night by a single pilot unless the operation has been specifically approved by the BDCA.

(b) An aeroplane shall not be operated under the IFR or at night by a single pilot unless:

(1) the flight manual does not require a flight crew of more than one;

(2) the aeroplane is propeller-driven;

(3) the maximum approved passenger seating configuration is not more than nine;

(4) the maximum certificated take-off mass does not exceed 5 700 kg;

(5) the aeroplane is equipped as described in BCAR OPS 1.655; and

(6) the pilot-in-command has satisfied the requirements of experience, training, checking and recency described in Appendix 2 to BCAR OPS 1.940.

BCAR-OPS 1.295 Selection of alternate aerodromes

(See AMC OPS 1.295)
(See AMC OPS 1.295 (c) (1) (ii))

(a) The Operator shall establish procedures for the selection of destination and/or alternate aerodromes in accordance with BCAR-OPS 1.220 when planning a flight.

(b) The Operator must select and specify in the operational flight plan a take-off alternate if it would not be possible to return to the aerodrome of departure for meteorological or performance reasons. The take-off alternate shall be located within:

(1) For aeroplanes with two engines, one hour of flight time at a one-engine-inoperative cruising speed, determined from the aircraft operating manual, calculated in ISA and still air conditions using the actual take-off mass; or

For aeroplanes with three or more engines, two hours of flight time at an all engines operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or

(2)For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the operator's established aerodrome operating minima for that operation.

(3)For aeroplanes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria of (1) or (2) BCAR OPS 1.295 (b) is not available, the first available alternate aerodrome located within the distance of the operator's approved maximum diversion time considering the actual take-off mass.

(4)If the AFM does not provide a one-engine-inoperative cruising speed, the speed to be used to make the calculations must be the one that is achieved with the remaining motor/s adjusted to the maximum continuous thrust (MCT).

(c)For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the operational and ATS flight plans, unless:

(1) the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists that:

(i) the approach and landing may be made under visual meteorological conditions; and

(ii) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; or

(2) the aerodrome is isolated. Operations into isolated aerodromes do not require the selection of a destination alternate aerodrome(s) and shall be planned in accordance with BCAR OPS 1.350:

(i). for each flight into an isolated aerodrome a point of no return shall be determined; and

(ii). a flight to be conducted to an isolated aerodrome shall not be continued past the point of no return unless a current assessment of meteorological conditions, traffic and other operational conditions indicate that a safe landing can be made at the estimated time of use.

(d) Two destination alternate aerodromes shall be selected and specified in the operational and ATS flight plans when, for the destination aerodrome:

(1) When the appropriate weather reports or forecasts for the destination aerodrome, or any combination thereof, indicate that during a period commencing one hour before and ending one hour after the estimated time of arrival, the weather conditions will be below the applicable planning minima (See BCAR OPS 1.297(b);

(2) meteorological information is not available.

(e) The BDCA may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve operational variations to alternate aerodrome selection criteria.
The specific safety risk assessment shall include at least the:

(1). capabilities of the operator;

(2). overall capability of the aeroplane and its systems;

(3). available aerodrome technologies, capabilities and infrastructure;

(4). quality and reliability of meteorological information;

(5). identified hazards and safety risks associated with each alternate aerodrome variation; and

(6). specific mitigation measures.

(f) En-route alternate aerodromes, for extended diversion time operations by aeroplanes with two turbine engines, shall be selected and specified in the operational and air traffic services (ATS) flight plans.

BCAR-OPS 1.297 Planning minima for IFR flights

(See AMC OPS 1.297)
(See AMC OPS 1.297(b)(2))

(a) *Planning minima for take-off alternates.* The Operator shall not select an aerodrome as a take-off alternate aerodrome unless the appropriate weather reports or forecasts or any combination thereof indicate that, during a period commencing 1 hour before and ending 1 hour after the estimated time of arrival at the aerodrome, the weather conditions will be at or above the applicable landing minima specified in accordance with BCAR-OPS 1.225. The ceiling must be taken into account when the only approaches available are non-precision and/or circling approaches. Any limitation related to one-engine inoperative operations must be taken into account.

(b) *Planning minima for destination and destination alternate aerodromes.* The Operator shall only select the destination aerodrome and/or destination alternate aerodrome(s) when the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing 1 hour before and ending 1 hour after the estimated time of arrival at the aerodrome, the weather conditions will be at or above the applicable planning minima as follows:

(1) Planning minima for a destination aerodrome except for isolated destination aerodromes:

(i) RVR/visibility specified in accordance with BCAR-OPS 1.225; and

(ii) For a non-precision approach or a circling approach, the ceiling at or above MDH; and

(2) Planning minima for destination alternate aerodrome(s) and isolated destination aerodromes. (See the minima established in Table 1):

Table 1 Planning minima - En-route and destination alternates

Type of approach	Planning Minima
Cat II and III	Cat I Note 1
Cat I	Non-precision Note 1 and Note 2
Non-precision	Non-precision Note 1 and Note 2 above 200 ft/1000 m
Circling	Circling
Note 1 RVR Note 2 The ceiling should be at or above the MDH	

(c) Planning minima for an en-route alternate aerodrome. The Operator shall not select an aerodrome as an en-route alternate aerodrome unless the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing 1 hour before and ending 1 hour after the expected time of arrival at the aerodrome, the weather conditions will be at or above the planning minima in accordance with Table 1 above.

(d) Planning minima for an EDTO en-route alternate. En-route alternate aerodromes, required for long-distance operations by aeroplanes with two engines, shall be selected and specified in the operational and air traffic services (ATS) flight plans.

(e) The Operator shall not select an aerodrome as an EDTO en-route alternate aerodrome unless the appropriate weather reports or forecasts, or any combination thereof, indicate that, during a period commencing one hour before and ending one hour after the expected time of arrival at the aerodrome, the weather conditions will be at or above the planning minima prescribed in Table 2 below, and in accordance with the operator's EDTO approval.

Table 2 Planning minima – EDTO

Type of Approach	**Planning minima** (RVR/visibility required & ceiling if applicable)	
	Aerodrome with	
	at least 2 separate approach procedures based on 2 separate aids serving 2 separate runways (See AMC OPS 1.295(c) (1) (ii))	at least 2 separate approach procedures based on 2 separate aids serving 1 runway or 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 200 ft./ 1 000m
Non- Precision Approach	The lower ~~of~~ non-precision approach minima plus 200 ft./ 1 000m or circling minima	The higher ~~of~~ circling minima or non-precision approach minima plus 200 ft./ 1000m.
Circling Approach	Circling minima	

BCAR-OPS 1.300 Submission of ATS flight plan

(See AMC OPS 1.300)

The Operator shall ensure that a flight is not commenced unless an ATS flight plan has been submitted, or adequate information has been submitted to permit alerting services to be activated if required.

BCAR-OPS 1.305 Refuelling/defueling with passengers embarking, on board or disembarking

(See Appendix 1 to BCAR-OPS 1.305)
(See AMC OPS 1.305)

The Operator shall ensure that no aeroplane is refuelled/defueled with Avgas or high volatility fuel (e.g., Jet-B or equivalent) or when a mixture of these types of fuel might occur, when passengers are embarking, on board or disembarking. In all other cases, necessary precautions must be taken and the aeroplane must be properly manned by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available. When refuelling with passengers embarking, on board or disembarking, two-way communication shall be maintained by the aeroplane's inter-communication system other suitable means between the ground crew supervising the refuelling and the qualified personnel on board the aeroplane.

BCAR-OPS 1.307 Refuelling/Defueling with high volatility fuel

(See AMC OPS 1.307)

The Operator shall establish procedures for refuelling/defueling with high volatility fuel (e.g. Jet-B or equivalent) if this is required.

BCAR-OPS 1.308 Pushback and towing

(a) The operator shall ensure that all pushback and towing procedures comply with appropriate aviation standards and procedures.

(b) The operator shall ensure that pre-taxi or post-taxi positioning of the aeroplane is not executed by towbarless towing unless:

(1) an aeroplane is protected by its own design from damage to the nose wheel steering system due to towbarless towing operation, or

(2) a system/procedure is provided to alert the flight crew that such damage may have or has occurred; or

(3) the towbarless towing vehicle is designed to prevent damage to the aeroplane type.

BCAR-OPS 1.310 Crew members at stations

(See AMC OPS 1.310(b))

(a) *Flight crew members*

(1) During take-off and landing each flight crew member required to be on flight deck duty shall be at his/her station.

(2) During all other phases of flight each flight crew member required to be on flight deck duty shall remain at his/her station unless his/her absence is necessary for the performance of his/her duties in connection with the operation, or for physiological needs provided at least one suitably qualified pilot remains at the controls of the aeroplane at all times.

(3) During all phases of flight, each flight crew member required to be on flight deck duty shall remain alert. If a lack of alertness is encountered, appropriate countermeasures shall be used. If unexpected fatigue is experienced a controlled rest procedure, organised by the pilot in command, can be used if workload permits. Controlled rest taken in this way may never be considered to be part of a rest period for purposes of calculating flight time limitations nor used to justify any duty period.

(b) *Cabin crew members*

(1) On all the decks of the aeroplane that are occupied by passengers, required cabin crew members shall be seated at their assigned stations with seat belt or safety harness during the take-off and landing when the pilot in command requires it. (See AMC OPS 1.310(b)).

(c) *Cabin Crew in Emergency Evacuation positions*

(1) Each member of the cabin crew who is assigned duties in case of emergency evacuation on an aeroplane carrying passengers; shall occupy a provided seat during take-off and landing manoeuvres, and whenever the pilot in command so orders.

BCAR-OPS 1.313 Use of headsets

(a) Each flight crew member required to be on flight deck duty shall wear the headset with boom microphone or equivalent and use it as the primary device to listen to the voice communications with Air Traffic services;

(1) on the ground:

(i) when receiving the ATC departure clearance via voice communication,
(ii) when engines are running,

(2) in flight below transition altitude or 10 000 feet, whichever is higher, and
(3) whenever deemed necessary by the pilot in command

(b) In the conditions of paragraph (a) above, the boom microphone or equivalent shall be in a position which permits its use for two-way radio communications.

BCAR-OPS 1.315 Assisting means for emergency evacuation

The Operator shall establish procedures to ensure that before taxiing, take-off and landing, and when safe and practicable to do so, an assisting means for emergency evacuation that deploys automatically, is armed.

BCAR-OPS 1.317 Demonstration of the emergency evacuation procedures

(a). Unless the BDCA, based on reliable analytical methods, concludes that the applicant has satisfactory emergency evacuation means, the inspection process shall ask the applicant to prove that the emergency evacuation procedures, training received by the crew members in this field, and the equipment used are suitable for the needs.

(b). The operator shall conduct a partial demonstration of the evacuation procedures in accordance with paragraph (d) below, when:

(1) it has introduced a new type or model of aeroplane, which has been used to conduct a real demonstration, to carry passengers in accordance with paragraph (a) before.

(2) it changes the emergency evacuation number, location, tasks, or procedures of the crew members.

(3) it changes the number, location, or type of emergency exits or types of emergency exit operation mechanisms available for evacuation.

(c) When conducting the partial demonstration required by paragraph (b) before, the operator shall:

(1) Prove the efficiency of its training and emergency evacuation procedures by conducting a demonstration without passengers for the specific type and model of an aeroplane and observed by the BDCA. During this demonstration, cabin crew members shall use floor-level emergency operation procedures and 50% of other required emergency exits. The opening of these other emergency exits and the spread out of 50% of the escape slides is defined as an emergency evacuation task and it shall be stated in the Flight Operations Manual. The exits and slides shall be chosen by the BDCA, and they shall be ready to be used in 15 seconds.

(2) Request and be granted by the BDCA approval before conducting the demonstration.

(3) For this demonstration, use cabin crew members, who have approved the training for that type of aeroplane and have passed the written or practical test on emergency equipment and procedures. These cabin crew members will be chosen at random by the authority; and

(4) Request and be granted the BDCA's approval before operating the type of aeroplane.

(d) The operator shall ensure that training programmes provided to the cabin crew members (initial and recurrent training every two years) include practices with emergency equipment for ditching. The aforementioned programmes shall include the movement of lifeboats, throwing, unfolding, and inflation. In addition, the practices shall include the use of all the emergency equipment in the boat and wearing and inflating life jackets.

BCAR-OPS 1.320 Seats, safety belts, and harnesses

(a) *Crew members*

(1) *Safety belts.* During take-off and landing, and whenever deemed necessary by the pilot in command in the interest of safety, each crew member shall be properly secured by all safety belts and harnesses provided.

(2) During other phases of the flight each flight crew member on the flight deck shall keep his/her safety belt fastened while at his/her station.

(3) Safety harness. Any flight crew member occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases; all other flight crew members shall keep their safety harnesses fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps may be unfastened but the seat belt must remain fastened.

(4) All flight crew members required to be on flight deck duty shall be at their stations.

(5) All flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the aeroplane or for physiological needs.

(b) *Passengers*

(1) Before take-off and landing, and during taxiing, and whenever for reasons of turbulence or emergency deemed necessary in the interest of safety, the pilot in command shall ensure that each passenger on board occupies a seat or berth with his/her safety belt, or harness where provided, properly secured.

(2) The Operator shall make provision for, and the pilot in command shall ensure that multiple occupancies of aeroplane seats may only be allowed on specified seats and does not occur other than by one adult and one infant who is properly secured by a supplementary loop belt or another restraint device.

BCAR-OPS 1.325 Security of passengers, cabin, and galleys

(a) The Operator shall establish procedures to ensure that before taxiing, take-off and landing all exits, and escape paths are unobstructed.

(b) The pilot in command shall ensure that before take-off and landing, and whenever deemed necessary in the interest of safety, all equipment and baggage are properly secured.

BCAR-OPS 1.326 Hazardous flight conditions

Hazardous flight conditions encountered, other than those associated with meteorological conditions, shall be reported to the appropriate aeronautical station as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

BCAR-OPS 1.330 Accessibility of emergency equipment

The pilot in command shall ensure that relevant emergency equipment remains easily accessible for immediate use.

BCAR-OPS 1.335 Smoking on board prohibition

The pilot in command shall ensure that no person on board is allowed to smoke in the passenger cabin, cargo compartment, galleys, restrooms, or on the ramp occupied by aircraft.

BCAR-OPS 1.340 Meteorological conditions

(a). A flight to be conducted in accordance with VFR shall not be commenced unless current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown under VFR will, at the appropriate time, be such as to enable compliance with these rules.

(b). A flight to be conducted in accordance with the instrument flight rules shall not:

(1). take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the operator's established aerodrome operating minima for that operation; and

(2). take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with BCAR OPS 1.295, current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions will be, at the estimated time of

use, at or above the operator's established aerodrome operating minima for that operation.

(c). To ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate aerodrome, the operator shall specify appropriate incremental values for the height of cloud base and visibility, acceptable to the BDCA, to be added to the operator's established aerodrome operating minima.

(d). The BDCA shall approve a margin of time established by the operator for the estimated time of use of an aerodrome.

(e)A flight to be operated in known or expected icing conditions shall not be commenced unless the aeroplane is certificated and equipped to cope with such conditions.

(f)A flight to be planned or expected to operate in suspected or known ground icing conditions shall not take off unless the aeroplane has been inspected for icing and, if necessary, has been given appropriate de-icing/anti-icing treatment. Accumulation of ice or other naturally occurring contaminants shall be removed so that the aeroplane is kept in an airworthy condition prior to take-off.

(g) In a VFR flight, the pilot-in-command shall not start the take-off unless the current weather reports or a combination of reports and current forecasts indicate that the weather conditions in the path, or the part of the route that will fly under VFR, must be such that they allow the fulfilment of these standards.

(h) The operator will instruct the pilots for the meteorological observations and notifications on board the aircraft in flight, as well as for their annotation and notification. In the same way, the pilot in command will inform about the aeronautical report (AIREP) about the braking efficiency report on the runway when it is different from the one notified.

BCAR-OPS 1.341 ***Reserved***

BCAR-OPS 1.345 Ice and other contaminants - ground procedures

(See AMC OPS 1.345)

Ground procedures

(a) The Operator shall establish procedures to be followed when ground de-icing and anti-icing and related inspections of the aeroplane(s) are necessary.

(b) A pilot in command shall not commence take-off unless the external surfaces are clear of any deposit which might adversely affect the performance and/or controllability of the aeroplane except as permitted in the Aeroplane Flight Manual.

BCAR-OPS 1.346 Ice and other contaminants, flight procedures

(See AMC OPS 1.346)

(a) The Operator shall establish procedures for flights in expected or actual icing conditions. (See BCAR-OPS 1.675)

(b) A pilot in command shall not commence a flight nor intentionally fly into expected or actual icing conditions unless the aeroplane is certified and equipped to cope with such conditions.

BCAR-OPS 1.350 Fuel and oil supply

(a) *All aeroplanes.* A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the aeroplane carries sufficient fuel or oil to ensure that it can safely complete the flight. In addition, a reserve shall be carried to provide for contingencies.

(b) *Piston-engine aeroplanes.* The fuel and oil carried shall, in the case of piston-engine aeroplanes, be at least the amount sufficient to allow the aeroplane:

(1) When a destination alternate aerodrome is required, either:

(i) to fly to the aerodrome to which the flight is planned thence to the most critical (in terms of fuel consumption) alternate aerodrome specified in the operational and ATS flight plans and thereafter for 45 minutes; or

(ii) to fly to the alternate aerodrome via any predetermined point and thereafter for 45 minutes, provided that the amount of fuel and oil is not less than the amount required to fly to the aerodrome to which the flight is planned and thereafter for:

(A) 45 minutes plus 15 per cent of the flight time planned to be spent at the cruising level(s), or

(B) two hours, whichever is less.

(2) When a destination alternate aerodrome is not required:

(i) in terms of BCAR OPS 1.295 (c)(1)(ii), to fly to the aerodrome to which the flight is planned and thereafter for a period of 45 minutes; or

(ii) in terms of BCAR OPS 1.295(c)(2), to fly to the aerodrome to which the flight is planned and thereafter for:

(A) 45 minutes plus 15 percent of the flight time planned to be spent at the cruising level(s), or

(B) two hours, whichever is less.

(c) *Turbine-engine aeroplanes.* The fuel and oil carried in order to comply with BCAR OPS 1.350(a) shall, in the case of turbine-engine aeroplanes, be at least the amount sufficient to allow the aeroplane:

(1) When a destination alternate aerodrome is required, either:

(i) to fly to and execute an approach, and a missed approach, at the aerodrome to which the flight is planned, and thereafter:

(ii) to fly to the alternate aerodrome specified in the operational and ATS flight plans; and then

(iii) to fly for 30 minutes at holding speed at 450 m (1 500 ft.) above the alternate aerodrome under standard temperature conditions, and approach and land; and

(iv) to have an additional amount of fuel sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator; or

(2) to fly to the alternate aerodrome via any predetermined point and thereafter for 30 minutes at 450 m (1 500 ft.) above the alternate aerodrome, due to provision having been made for an additional amount of fuel sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator, provided that fuel shall not be less than the amount of fuel required to fly to the aerodrome to which the flight is planned and thereafter for two hours at normal cruise consumption.

(d) When a destination alternate aerodrome is not required:

(1) in terms of BCAR OPS 1.295 (c)(1)(ii), to fly to the aerodrome to which the flight is planned and additionally:

(i) to fly 30 minutes at holding speed at 450 m (1 500 ft) above the aerodrome to which the flight is planned under standard temperature conditions; and

(ii) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator; and

(2) in terms of BCAR OPS 1.295(c)(2), to fly to the aerodrome to which the flight is planned and thereafter for two hours at normal cruise consumption.

(e) In computing the fuel and oil required in BCAR OPS 1.350(a), at least the following shall be considered:

(1) meteorological conditions forecast;

(2) expected air traffic control routings and possible traffic delays;

(3) for IFR flight, one instrument approach at the destination aerodrome, including a missed approach;

(4) the procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one engine while en-route; and

(5) any other conditions that may delay the landing of the aeroplane or increase fuel and/or oil consumption.

(f) The operator shall maintain fuel records to enable the BDCA to ascertain that, for each flight, the requirements of this regulation have been complied with. The operator shall also maintain oil records to enable the BDCA to ascertain those trends for oil consumption are such that an aeroplane has sufficient oil to complete each flight. The operator must keep fuel and oil records for a period of three months (see table 1 of Appendix 1 of BCAR OPS 1.1065).

BCAR-OPS 1.355 Take-off conditions

Before commencing take-off, a pilot in command must satisfy himself that, according to the information available to him, the weather at the aerodrome and the condition of the runway intended to be used should not prevent a safe take-off and departure.

BCAR-OPS 1.360 Application of take-off minima

Before commencing take-off, a pilot in command must satisfy himself/herself that the RVR or visibility in the take-off direction of the aeroplane is equal to or better than the applicable minimum.

BCAR-OPS 1.365 Minimum flight altitudes

(See AMC OPS 1.250)

The pilot in command or the pilot that has been delegated to conduct the flight shall not fly below specified minimum altitudes except when necessary for take-off or landing.

BCAR-OPS 1.370 Simulated abnormal situations in flight

The Operator shall establish procedures to ensure that abnormal emergency situation requiring the application of part or all abnormal or emergency procedures and simulation of IMC by artificial means are not simulated during commercial air transportation flights.

BCAR-OPS 1.375 In-flight fuel management

BCAR-OPS 1.385 Oxygen Supply

(a) Approximate altitudes in the standard atmosphere, corresponding to the values of absolute pressure used in the text, are as follows:

Absolute pressure	Meters	Feet
700 hPa	3 000	10 000
620 hPa	4 000	13 000
376 hPa	7 600	25 000

(b) All flight crew members, when engaged in performing duties essential to the safe operation of an aeroplane in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required.

(c) A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 10 000 feet shall not be commenced unless sufficient stored breathing oxygen is carried to supply:

(1) all crew members and 10 per cent of the passengers for any period more than 30 minutes that the pressure in compartments occupied by them will be between 10 000 feet and 13 000 feet; and

(2) the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 13 000 feet.

(d) A flight to be operated with a pressurized aeroplane shall not be commenced unless enough stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 10 000 feet. In addition, when an aeroplane is operated at flight altitudes at which the atmospheric pressure is less than 25 000 feet, or which, if operated at flight altitudes at which the atmospheric pressure is more than 25 000 feet and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 13 000 feet, there shall be no less than a 10-minute supply for the occupants of the passenger compartment.

Cabin crew should be safeguarded so as to ensure reasonable probability of their retaining consciousness during any emergency descent which may be necessary in the event of loss of pressurization and, in addition, they should have such means of protection as will enable them to administer first aid to passengers during stabilized flight following the emergency. Passengers should be safeguarded by such devices or operational procedures as will ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurization.

(e) All crew members engaged in essential services for the operation of the airplane in flight, will continuously use breathable oxygen whenever the circumstances prevail for which the supply is required, according to BCAR OPS 1.385 (a), (b).

(f) All members of the flight crew of airplanes with a pressurized cabin that fly at an altitude at which the atmospheric pressure is less than 25,000 feet, shall have at their disposal, in the position in which they render flight duty, a quick donning type oxygen mask that allows oxygen to be supplied at will.

(g) An airplane required to be operated at flight altitudes where atmospheric pressure is less than 10,000 feet; In the personnel compartments, it will carry devices for the storage and distribution of oxygen that can contain and distribute the supply of oxygen as indicated in BCAR OPS 1.385 (b).

(h) An airplane required to be operated at flight altitudes where the atmospheric pressure is less than 10,000 feet, but which has a means of maintaining pressures greater than 10,000 feet in the personnel compartments, shall carry storage and distribution devices for the oxygen that can contain and distribute the supply as indicated in BCAR OPS 1.385 (c).

(i) Pressure-cabin airplanes intended to fly at altitudes where atmospheric pressure is less than 25,000 feet shall be equipped with a device that provides the flight crew with an unmistakable warning signal in the event of any dangerous loss of Pressure.

(j) An airplane that is required to be operated at flight altitudes where atmospheric pressure is less than 25,000 feet, or, when flown at altitudes where atmospheric pressure is greater than 25,000 feet, cannot descend safely in four minutes at a flight altitude where the atmospheric pressure is equal to 13,000 feet, it will be equipped with self-deploying oxygen equipment to comply with the requirements of BCAR 1.385 (c). The total number of oxygen distribution devices shall be at least 10% greater than the number of passenger and cabin crew seats.

BCAR-OPS 1.390 Cosmic radiation

(See AMC OPS 1.390(a) (1))
(See AMC OPS 1.390(a) (2))
(See AMC OPS 1.390(a) (3))

(a) The Operator shall take account of the inflight exposure to cosmic radiation of all crew members while on duty (including positioning) and shall take the following measures for those crew liable to be subject to exposure of more than 1 mSv (millisieverts) per year (See AMC OPS 1.390)(a)(1)):

(1) Assess their exposure;

(2) Take into account the assessed exposure when organizing working schedules to reduce the doses of highly exposed crew members (See AMC OPS 1.390(a)(2));

(3) Inform the crew members concerned of the health risks their work involves (See AMC OPS 1.390(a)(3));

(4) Ensure that the working schedules for female crew members, once they have notified the operator that they are pregnant, keep the equivalent dose to the foetus as low as can reasonably be achieved and in any case ensure that the dose does not exceed 1 mSv (millisieverts) for the remainder of the pregnancy;

(5) Ensure that individual records are kept for those crew members who are liable to high exposure. These exposures are to be notified to the individual on an annual basis, and also upon leaving the operator.

(b) For each flight, the operator of an aeroplane that is to fly above (49,000 ft) will maintain records by which the total doses of cosmic radiation received by each of its crew members during a period of 12 months can be determined. The Operator shall not operate an aeroplane above 15 000m (49 000 ft.) unless the equipment specified in BCAR-OPS 1.680

(a) (1) is serviceable, or the procedure prescribed in BCAR-OPS 1.680(a) (2) is complied with.

(c) The pilot in command or the pilot to whom conduct of the flight has been delegated shall initiate a descent as soon as practicable when the limit values of cosmic radiation dose rate specified in the Operations Manual are exceeded. (See BCAR-OPS 1.680(a) (1))

BCAR-OPS 1.395 Ground proximity detection

When undue proximity to the ground is detected by any flight crew member or by a ground proximity warning system, the pilot in command shall ensure that corrective action is initiated immediately to establish safe flight conditions.

BCAR-OPS 1.398 Use of Airborne Collision Avoidance System (ACAS)

(See AMC OPS 1.398)

The Operator shall establish procedures to ensure that:

(a) When ACAS is installed and serviceable, it shall be used in flight in a mode that enables Resolution Advisories (RA) to be produced unless to do so would not be appropriate for conditions existing at the time.

(b) When undue proximity to another aeroplane (RA) is detected by ACAS, the pilot in command delegated shall ensure that any corrective action indicated by the RA is initiated immediately to establish safe separation unless the intruder has been visually identified and has been determined not to be a threat.

(1) The corrective action must:

i. Never be in sense opposite to that indicated by the RA;

ii. Be in the correct sense indicated by the RA even if this is in conflict with the vertical element of an ATC

iii. Be the minimum possible to comply with the RA indication.

(c) Prescribed ACAS ATC communications are specified.

(d) When the conflict is resolved, the aeroplane is promptly returned to the terms of the ATC instructions or clearance.

BCAR-OPS 1.400 Approach and landing conditions

(See AMC OPS 1.400)

Before commencing an approach to land, the pilot in command must satisfy himself/herself that, according to the information available to him/her, the weather at the aerodrome and the condition of the runway intended to be used should not prevent a safe approach, landing or missed approach, having regard to the performance information contained in the Operations Manual.

BCAR-OPS 1.405 Commencement and continuation of the approach

(a) The pilot in command may commence an instrument approach regardless of the reported RVR/Visibility but the approach shall not be continued beyond the outer marker, or equivalent position if the reported RVR/visibility is less than the applicable minima.

(b) Where RVR is not available, RVR values may be derived by converting the reported visibility in accordance with Appendix 1 to BCAR-OPS 1.430, subparagraph (h).

(c) If, after passing the outer marker or equivalent position in accordance with (a) above, the reported RVR/visibility falls below the applicable minimum, the approach may be continued to DA/H or MDA/H.

(d) Where no outer marker or equivalent position exists, the pilot in command shall make the decision to continue or abandon the approach before descending below 1 000 ft. above the aerodrome on the final approach segment. If the MDA/H is at or above 1 000 ft. above the aerodrome, the operator shall establish a height, for each approach procedure, below which the approach shall not be continued if the RVR/visibility is less than the applicable minima.

(e) The approach may be continued below DA/H or MDA/H and the landing may be completed provided that the required visual reference is established at the DA/H or MDA/H and is maintained.

(f) The touchdown zone RVR is always controlling. If reported and relevant the mid-point and stop end RVR are also controlling (in this context, ‘relevant’ means that part of the runway used during the high-speed phase of the landing down to a speed of approximately 60 knots). The minimum RVR value for the mid-point is 125 m or the RVR required for the touchdown zone if less, and 75 m for the stop-end. For aeroplanes equipped with a rollout guidance or control system, the minimum RVR value for the mid-point is 75 m.

BCAR-OPS 1.410 Threshold crossing height for 3D instrument approach operations

The operator shall establish operational procedures designed to ensure that an aeroplane being used to conduct 3D instrument approach operations cross~~es~~ the threshold by a safe margin, with the aeroplane in the landing configuration and attitude.

BCAR-OPS 1.415 Aeroplane logbook

The pilot-in-command shall be responsible for maintaining the journey logbook and the general declaration. He/she shall also ensure that logbook annotations are completed.

BCAR-OPS 1.420 Occurrence reporting

(See AMC OPS 1.420(d) (4))

(a) *Terminology.*

(1) *Incident*: An occurrence, other than an accident, associated with the operation of an aeroplane, which affects or could affect the safety of the operation.

(2) *Serious incident.* An incident involving circumstances indicating that an accident nearly occurred.

(3) *Accident.* An occurrence associated with the operation of an aeroplane which takes place between the time any person boards the aeroplane with the intention of flight until all persons have disembarked, in which:

(i) a person is fatally or seriously injured as a result of:

(A) being in the aeroplane; or

(B) direct contact with any part of the aeroplane, including parts which have become detached from the aeroplane; or

(C) direct exposure to jet blast; except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

(ii) the aeroplane sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aeroplane; and would normally require major repair or replacement of the affected component; except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents or puncture holes in the aeroplane skin: or;

(iii) the aeroplane is missing or is completely inaccessible.

(b) *Incident reporting.* The Operator shall establish procedures for reporting incidents taking into –account the responsibilities described below and circumstances described in subparagraph (d) below:

(1) BCAR-OPS 1.085(b) specifies the responsibilities of crew members for reporting incidents that endanger, or could endanger, the safety of the operation.

(2) The pilot in command or the operator shall submit a report to the Authority of any incident that endangers or could endanger the safety of operation.

(3) Reports must be despatched within 72 hours of the time when the incident was identified unless exceptional circumstances prevent this.

(4) A pilot in command shall ensure that all known or suspected technical defects and all exceedances of technical limitations occurring while he/she was responsible for the flight are recorded in the aeroplane technical log. If the deficiency or exceedance of technical limitations endangers or could endanger the safety of operation, the pilot in command must in addition initiate the submission of a report to the Authority in accordance with paragraph (b)(2) above.

(5) In the case of incidents reported in accordance with sub- paragraphs (b)(1), (b)(2) and (b)(3) above, arising from, or relating to, any failure, malfunction or defect in the aeroplane, its equipment or any item of ground support equipment, or which cause or might cause adverse effects on the continuing airworthiness of the aeroplane, the operator must also inform the organization responsible for the design or the supplier or, if applicable, the organization responsible for continued airworthiness, at the same time as a report is submitted to the Authority.

(c) Accident and serious incident reporting

The Operator shall establish the procedures for reporting accidents and serious incidents taking into account responsibilities described below and circumstances described in subparagraph (d) below.

(1) A pilot in command shall notify the operator of any accident or serious incident occurring while he/she was responsible for the flight. If the pilot in command is incapable of providing such notification, this task shall be undertaken by any other member of the crew if they are able to do so, note being taken of the succession of command specified by the operator.

(2) The Operator shall ensure the BDCA, and the nearest appropriate Authority (if not the BDCA), and any other organization required by the BDCA to be informed, are notified

by the quickest means available of any accident or serious incident involving the aeroplane, resulting in serious injury or death of any person or substantial damage to the aeroplane or property - in the case of accidents only - at least before the aeroplane is moved unless exceptional circumstances prevent this.

(3) The pilot in command or the operator shall submit a report to the Authority in the State of the operator within 72 hours of the time when the accident or serious incident occurred.

(d) Specific reports. Occurrences for which specific notification and reporting methods must be used are described below.

(1) Air traffic incident

A pilot in command shall without delay notify the air traffic service unit concerned of the incident and shall inform them of his/her intention to submit an air traffic incident report after the flight has ended whenever an aeroplane in flight has been endangered by:

(i) A near collision with any other flying device;

(ii) Faulty air traffic procedures or lack of compliance with applicable procedures by air traffic services or by the flight crew.

(iii) Failure of air traffic services facilities. In addition, the pilot in command shall notify the incident to the Authority.

(2) *Airborne Collision Avoidance System Resolution Advisory.* A pilot in command shall notify the air traffic service unit concerned and submit an ACAS report to the Authority whenever an aeroplane in flight has manoeuvred in response to an ACAS Resolution Advisory.

(3) *Bird hazards and strikes.*

(i) The pilot in command shall immediately inform the local air traffic service unit whenever a potential bird hazard is observed.

(ii) If he/she is aware that a bird strike has occurred, a pilot in command shall submit a written bird strike report after landing to the Authority whenever an aeroplane for which he/she is responsible suffers a bird strike that results in significant damage to the aeroplane or the loss or malfunction of any essential service. If the bird strike is discovered when the pilot in command is not available, the operator is responsible for submitting the report.

(4) *In-flight emergencies with dangerous goods on board*. If an in-flight emergency occurs and the situation permits, a pilot in command shall inform the appropriate air traffic service unit of any dangerous goods on board. After the aeroplane has landed, the

pilot in command shall, if the occurrence has been associated with and was related to the transport of dangerous goods, comply also with the reporting requirements specified in BCAR-OPS 1.1225. (See AMC OPS 1.420(d) (4)).

(5) *Unlawful interference*. Following an act of unlawful interference on board an aeroplane, the pilot in command or, in his/her absence, the operator shall submit a report as soon as practicable to the local Authority and to the Authority in the State of the Operator. (See also BCAR-OPS 1.1245).

(6) *Encountering potentially hazardous conditions.* A pilot in command shall notify the appropriate air traffic services unit, as well as the Operations and Dispatch Control Centre as soon as practicable whenever a potentially hazardous condition such as an irregularity in a ground or navigational facility, a meteorological phenomenon or a volcanic ash cloud is encountered during flight. Volcanic ash clouds shall also be recorded in the special air-report of volcanic activity form officially published by the State.

Appendix 1 to BCAR-OPS 1.195 Flight dispatcher training
(See AMC OPS 1.195(e) and (c))

(a) Conversion training

The Operator shall ensure that:

(1) A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

(i) satisfactorily completed the operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations and a conversion training course of the equipment to be used;

(ii) satisfactorily completed a conversion training course when changing from one aeroplane type or class to another, as required by the corresponding licensing regulation, and

(2) The conversion training is being provided by properly qualified persons in accordance with a detailed programme included in the Operations Manual. The operator shall ensure that personnel teaching CRM elements in the conversion training are properly qualified;

(3) The operator conversion training is being determined taking into consideration previous training the flight dispatcher has had, in accordance with his/her training records;

(4) Minimum qualification levels and experience required to flight dispatchers shall be specified in the Operations Manual before starting the conversion training;

(5) CRM training elements are included in the conversion training.

(6) The content of this training will be adapted in accordance with AMC-OPS 1.195(a)

(7) During the preceding 12 months, the fight dispatcher carries out a one way only training flight in the cockpit of an aeroplane over any area he/she is authorized to supervise the flight. The flight shall include landings in as many aerodromes as possible.

(b) Difference or familiarization course

The operator shall ensure that each flight dispatcher has approved:

(1) *Difference training* for additional knowledge:

(i) When operating a variation of the type of aeroplane or other type of the same class that the one is currently operating; or

(ii) When there are changes in the equipment and/or procedures in the types or variants that the one is currently operating.

(2) *Familiarization training* for additional knowledge:

(i) When operating an aeroplane of the same type; or

(ii) When there are changes in the equipment and/or procedures in the types or variants that the one is currently operating.

(3) The operator shall specify, in the Operations Manual, the time when difference or familiarization training is required and the content of each of them.

(c) Recurrent training

(1) The operator shall ensure that each flight dispatcher is being provided recurrent training every 12 calendar months as well as a training flight in the aeroplane cockpit in a single direction, over any area where a flight check is authorized.

(2) The operator shall specify the content of the recurrent course for dispatchers in the Operations Manual.

(3) The content of this training shall be adapted in accordance with AMC OPS 1.195(c).

Appendix 1 to BCAR OPS 1.220 Minimum acceptable SSEI category of the aerodrome
(See BCAR OPS 1.220)

(a) The published FSS category for each of the aerodromes used on a given flight should be equal to or better than the FSS category of the airplane. However, if the aircraft's SSEI category is not available at one or more of the aerodromes that is required to be specified in the operational flight plan, the operator should ensure that the aerodrome has the minimum level of SSEI deemed acceptable for the aircraft. intended use in accordance with the instructions in the operations manual. In establishing minimum acceptable SSEI levels for these situations, the operator may apply the criteria in Table I-2
(See ACC 1.220)

(b) Operations expected to be carried out at aerodromes with SSEI categories lower than the specified levels must be coordinated between the airplane operator and the aerodrome operator. If an aerodrome serves more than one purpose, the highest category that is required for that purpose at the time the use is anticipated applies.
(See ACC 1.220)

Appendix 1 to BCAR OPS 1.241 Altimetry system performance requirements for
operations in RVSM airspace

(a) In respect of groups of aeroplanes that are nominally of identical design and build with respect to all details that could influence the accuracy of height-keeping performance, the height-keeping performance capability shall be such that the total vertical error (TVE) for the group of aeroplanes shall have a mean no greater than 25 m (80 ft.) in magnitude and shall have a standard deviation no greater than $28 – 0.013z2$ for $0 < z < 25$ when z is the magnitude of the mean TVE in metres, or $92 – 0.004z2$ for $0 < z < 80$ where z is in feet. In addition, the components of TVE shall have the following characteristics:

(1) the mean altimetry system error (ASE) of the group shall not exceed 25 m (80 ft.) in magnitude;

(2) the sum of the absolute value of the mean ASE and of three standard deviations of ASE shall not exceed 75 m (245 ft.); and

(3) the differences between cleared flight level and the indicated pressure altitude actually-flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft.), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

(b) In respect of aeroplanes for which the characteristics of the airframe and altimetry system fit are unique and so cannot be classified as belonging to a group of aeroplanes encompassed by paragraph (a), the height-keeping performance capability shall be such that the components of the TVE of the aeroplane have the following characteristics:

(1) the ASE of the aeroplane shall not exceed 60 m (200 ft.) in magnitude under all flight conditions; and

(2) the differences between the cleared flight level and the indicated pressure altitude ~~actually~~ flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft.), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

Appendix 1 to BCAR-OPS 1.255 Fuel policy

(See BCAR-OPS 1.255)

The Operator must base the company fuel policy, including calculation of the amount of fuel to be on board for departure, on the following planning criteria:

(a) Basic procedure. The usable fuel to be on board for departure must be the amount of:

(1) Taxi fuel, which shall not be less than the amount, expected to be used prior to take-off. Local conditions at the departure aerodrome and APU consumption shall be considered.

(2) Trip fuel, which shall include:

(i) fuel for take-off and climb from aerodrome elevation to initial cruising level/altitude; and

(ii) fuel from top of climb to top of descent, including any step climb/descent; and

(iii) fuel from top of descent to the point where the approach is initiated, considering the expected arrival procedure; and

(iv) fuel for approach and landing at the destination aerodrome.

(3) *Contingency fuel*, which shall be the amount of fuel required to compensate for unforeseen factors. It shall be five per cent of the planned trip fuel or of the fuel required from the point of in-flight re-planning based on the consumption rate used to plan the trip fuel but, in any case, shall not be lower than the amount required to fly for five minutes at holding speed at 450 m (1 500 ft.) above the destination aerodrome in standard conditions.

(4) Alternate fuel which shall:

(i) where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to:

a. perform a missed approach at the destination aerodrome;

b. climb to the expected cruising altitude;

c. fly the expected routing;

d. descend to the point where the expected approach is initiated; and

e. conduct the approach and landing at the destination alternate aerodrome; or

(ii) where two destination alternate aerodromes are required, the amount of fuel calculated in accordance with BCAR OPS 1.255(d), be sufficient to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel.

(iii) where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1 500 ft.) above destination aerodrome elevation in standard conditions; or

(iv) where the aerodrome of intended landing is an isolated aerodrome:

(A). for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 per cent of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; or

(B). for a turbine-engine aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;

(5) *Final reserve fuel*, which shall be the amount of fuel calculated using the estimated mass on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required:

(i) for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the State of the Operator; or

(ii) for aeroplanes with turbine engines, fuel to fly for 30 minutes at holding speed at 1 500 ft. (450 m) above aerodrome elevation in standard conditions.

(6) *Additional fuel*, which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with BCAR OPS 1.255(c) is not sufficient to:

(i) allow the aeroplane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss of pressurisation, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route; and

(A) fly for 15 minutes at holding speed at 450 m (1 500 ft.) above aerodrome elevation in standard conditions; and;

(B) make an approach and landing;

(ii) allow an aeroplane engaged in EDTO to comply with the EDTO critical fuel scenario as established by the State of the Operator;

(iii) meet additional requirements not covered above;

(7) *Discretionary fuel*, which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.

(c) A flight shall not commence unless the usable fuel on board meets the requirements in **Appendix 1** to BCAR OPS 1.255(a) if required and shall not continue from the point of in-flight re-planning unless the usable fuel on board meets the requirements in the Appendix mentioned above.

(d) Notwithstanding the provisions in **Appendix 1** to BCAR OPS 1.255(a), the BDCA may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve variations to the pre-flight fuel calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel, and additional fuel. The specific safety risk assessment shall include at least the:

(1) flight fuel calculations;

(2) capabilities of the operator to include:

(i). a data-driven method that includes a fuel consumption monitoring programme;

(ii). and/or the advanced use of alternate aerodromes; and

(3) specific mitigation measures.

(e) The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

Appendix 2 to BCAR-OPS 1.255 Reduction of contingency fuel to 3%.

(See Appendix 1 to BCAR-OPS 1.255(a)(3)(I)(B))
(See BCAR-OPS 1.192)

For the location of an alternate aerodrome enroute with the purpose of reducing contingency fuel to 3%.

This aerodrome must be located within a circle having a radius equal to 20% of the total planned flight distance, and whose centre is on the planned route at a distance from the destination aerodrome of 25% of the total planned distance, or at least 20% of the total flight plan distance plus 50 nautical miles, whichever is greater, and these distances must be calculated in calm air conditions (see figure 1).

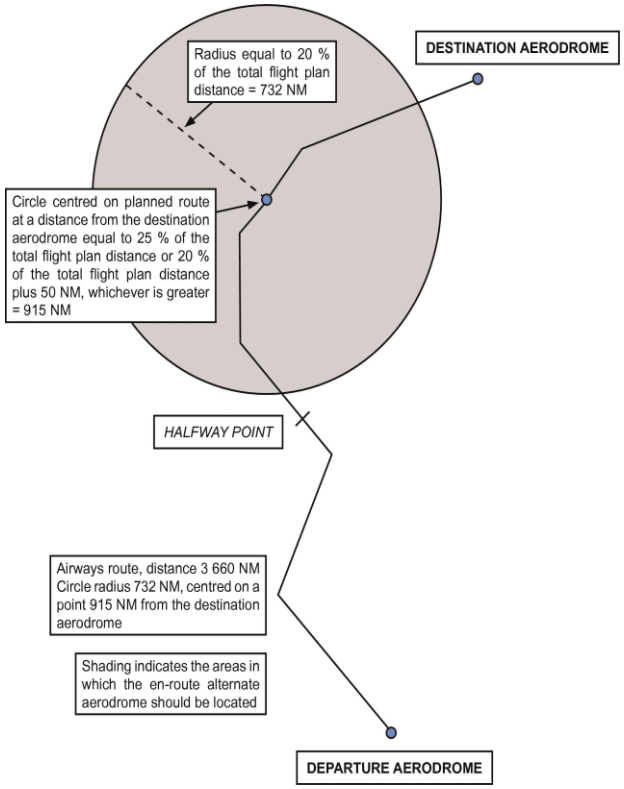


Figure 1

Appendix 1 to BCAR-OPS 1.270 Stowage of baggage and cargo

(a) Procedures established by The Operator to ensure that hand baggage and cargo is adequately and securely stowed must take account of the following:

(1) Each item carried in a cabin must be stowed only in a location that is capable of restraining it;

(2) Weight limitations placard on or adjacent to stowage's must not be exceeded;

(3) Under seat stowage's must not be used unless the seat is equipped with a restraint bar and the baggage is of such size that it may adequately be restrained by this equipment;

(4) Items must not be stowed in toilets or against bulkheads that are incapable of restraining articles against movement forwards, sideways or upwards and unless the bulkheads carry a placard specifying the greatest weight that may be placed there;

(5) Baggage and cargo placed in lockers must not be of such size that they prevent latched doors from being closed securely;

(6) Baggage and cargo must not be placed where it can impede access to emergency equipment; and

(7) Checks must be made before take-off, before landing, and whenever the fasten seat belts signs are illuminated or it is otherwise so ordered to ensure that baggage is stowed where it cannot impede evacuation from the aeroplane or cause injury by falling (or other movement) as may be appropriate to the phase of flight.

Appendix 1 to BCAR-OPS 1.305 Refuelling/defueling with passengers embarking, on board, or disembarking

(a) The Operator must establish operational procedures for re/defueling with passengers embarking, on board or disembarking to ensure the following precautions are taken:

(1) One qualified person must remain at a specified location during fuelling operations with passengers on board. This qualified person must be capable of handling emergency procedures concerning fire protection and firefighting, handling communications, and initiating and directing an evacuation.

(2) a two-way communication shall be established and shall remain available by the aeroplane's inter-communication system or other suitable means between the ground crew supervising the refuelling and the qualified personnel on board the aeroplane;

(3) Crew, staff and passengers must be warned that re/defueling will take place;

(4) 'Fasten Seat Belts' signs must be off;

(5) 'NO SMOKING' signs must be on, together with interior lighting to enable emergency exits to be identified;

(6) Passengers must be instructed to unfasten their seat belts and refrain from smoking;

(7) Sufficient qualified personnel must be on board and be prepared for an immediate emergency evacuation;

(8) If the presence of fuel vapour is detected inside the aeroplane, or any other hazard arises during re/defueling, fuelling must be stopped immediately;

(9) The ground area beneath the exits intended for emergency evacuation and slide deployment areas must be kept clear; and

(10) Provision is made for a safe and rapid evacuation.

Appendix 1 to BCAR-OPS 1.375 In-flight fuel management

(a) *In-flight fuel checks*

(1) A pilot in command must ensure that fuel checks are carried out in flight at regular intervals. The remaining fuel must be recorded and evaluated to:

(i) Compare actual consumption with planned consumption;

(ii) Check that the remaining fuel is sufficient to complete the flight; and

(iii) Determine the expected fuel remaining on arrival at the destination.

(2) The relevant fuel data must be recorded.

(b) *In-flight fuel management*

(1) If, as a result of an in-flight fuel check, the expected fuel remaining on arrival at the destination is less than the required alternate fuel plus final reserve fuel, the pilot in command must take into account the traffic and the operational conditions prevailing at the destination aerodrome, along the diversion route to an alternate aerodrome and at the destination alternate aerodrome, when deciding whether to proceed to the destination aerodrome or to divert, so as to land with not less than final reserve fuel.

(2) On a flight to an isolated aerodrome:

The last possible point of diversion to any available en-route alternate aerodrome shall be determined. Before reaching this point, the pilot in command shall assess the fuel expected to remain overhead the isolated aerodrome, the weather conditions, and the traffic and operational conditions prevailing at the isolated aerodrome and at any of the en-route aerodromes before deciding whether to proceed to the isolated aerodrome or to divert to an en-route aerodrome. (See ACJ to Appendix 1 of BCAR-OPS 1.375(b)(2)).

SUBPART E – ALL WEATHER OPERATIONS

BCAR-OPS 1.430 Aerodrome operating minima-- General

(See Appendix 1 to BCAR-OPS 1.430)
(See Appendix 2 to BCAR-OPS 1.430(c))
(See AMC OPS 1.430)
(See AMC OPS 1.430(b) (4))
(See AMC to Appendix 1 of BCAR OPS 1.430)
(See AMC to Appendix 1 of BCAR OPS 1.430 (d) and (e))
(See AMC OPS to Appendix 1 of BCAR OPS 1.430 (e) (5))
(See AMC OPS to Appendix 1 of BCAR OPS 1.430(f))

(a) The Operator shall establish, for each aerodrome planned to be used, aerodrome operating minima that are not lower than the values given in Appendix 1 to BCAR OPS 1.430. The method of determination of such minima must be acceptable to the BDCA. Such minima shall not be lower than any that may be established for such aerodromes by the State in which the aerodrome is located, except when specifically approved by that State. This paragraph does not prohibit in-flight calculation of minima for a nonplanned alternate aerodrome if carried out in accordance with an accepted method.

(b) In establishing the aerodrome operating minima which will apply to any operation, The Operator must take full account of:

(1) The type, performance and handling characteristics of the aeroplane;

(2) The composition of the flight crew, their competence and experience;

(3) The dimensions and characteristics of the runways which may be selected for use;

(4) The adequacy and performance of the available visual and non-visual ground aids; (See AMC OPS 1.430(b) (4)).

(5) The equipment available on the aeroplane for navigation and/or control of the flight path, as appropriate, during the take-off, the approach, the flare, the landing, roll-out and the missed approach;

(6) The obstacles in the approach, missed approach and the climb-out areas required for the execution of contingency procedures and necessary clearance of obstacles; to perform the instrument approach procedure;

(7) The obstacle clearance altitude/height for the instrument approach procedures; and

(8) The means to determine and report meteorological conditions.

(9) the conditions prescribed in the operations specifications, and

(10) any minimum that may be published by the BDCA according to the aerodrome of operation

(c) The aeroplane categories referred to in this Subpart must be derived in accordance with the method given in Appendix 2 to BCAR-OPS 1.430(c).

(d) The operator may apply for operational credit(s) at the BDCA for operations with aeroplanes equipped with automatic landing systems, HUD, or equivalent displays, EVS, SVS or CVS. Such approvals shall not affect the classification of the instrument approach procedure. (See AMC OPS 1.430(d)).

(e) Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

1. Type A: a minimum descent height or decision height at or above 75 m (250 ft.); and

2. Type B: a decision height below 75 m (250 ft.). Type B instrument approach operations are categorised as:

(i) Category I (CAT I): a decision height not lower than 60 m (200 ft.) and with either a visibility not less than 800 m or a runway visual range not less than 550 m;

(ii) Category II (CAT II): a decision height lower than 60 m (200 ft.) but not lower than 30 m (100 ft.) and a runway visual range not less than 300 m;

(iii) Category III (CAT III): a decision height less than (100 ft) or no decision height limitation and runway visual range less than 300 m; or without runway visual range limitations;

(f) The operating minima for 2D instrument approach operations using instrument approach procedures shall be determined by establishing a minimum descent altitude (MDA) or minimum descent height (MDH), minimum visibility and, if necessary, cloud conditions.

(g) The operating minima for 3D instrument approach operations using instrument approach procedures shall be determined by establishing a decision altitude (DA) or decision height (DH) and the minimum visibility or RVR.

(h) When issuing a specific approval for the operational credit, the BDCA shall ensure that the:

1 aeroplane meets the appropriate airworthiness certification requirements;
2 information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual is more than one;

3 operator has carried out a safety risk assessment of the operations supported by the equipment;

4 operator has established and documented normal and abnormal procedures and MEL;

5 operator has established a training programme for the flight crew members and relevant personnel involved in the flight preparation;

6 operator has established a system for data collection, evaluation and trend monitoring for low visibility operations for which there is an operational credit; and

7 operator has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes.

(i) For operations with operational credit with minima above those related to low visibility operations, the State of the Operator shall establish criteria for the safe operation of the aeroplane.

BCAR-OPS 1.435 Terminology

(a) The terms used in this Subpart have the following meaning:

(1) Circling flight. The visual phase of an instrument approach places an airplane in a landing position on a runway that is not properly located for a straight-in approach.

(2) Low Visibility Procedures (LVP). Procedures applied at an aerodrome to ensure the safety of operations during Category II and III approaches and take-offs in low visibility.

(3) Low Visibility Take-Off (LVTO). Take-off for which the runway visual range (RVR) is less than 400 m.

(4) Flight control system. A System that includes an automatic landing system and/or a hybrid landing system.

(5) Fail Passive Flight Control System. A flight control system is fail-passive if, in the event of a failure, no significant out-of-trim, path deviation, or attitude condition occurs, but the landing is not completed automatically. In the case of a fail-passive automatic flight control system, the pilot assumes control of the aircraft after a failure.

(6) Fail Operational Flight Control System. A flight control system is fail-operational if, in the event of a failure below alert height, the approach, flare, and landing can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system.

(7) Fail Operational Hybrid Landing System. It consists of a primary automatic fail-passive landing system and a secondary independent guidance system, which allows the pilot to complete a landing manually following the failure of the primary system.

A typical independent secondary guidance system consists of guidance information on a head-up display that normally provides command information but can also be position (or deviation) information.

(8) Visual approach. An approach in which all or part of an instrument approach procedure is not completed, and the approach is executed with visual references to the terrain.

BCAR-OPS 1.440 Low visibility operations- general operating rules

(See Appendix 1 to BCAR-OPS 1.440)
(See AMC OPS to Appendix 1 to BCAR OPS 1.440)
(See AMC OPS to Appendix 1 to BCAR OPS 1.440(b))

(a) The Operator shall not conduct Category II or III operations unless:

(1) Each aeroplane concerned is certificated for operations with decision heights below 200 ft. (61 m), or no decision height, and equipped following **Annex 2** to BCAR-OPS 1, Section 2 'Special Operations' and Subpart K of this regulation or equivalent standard accepted by the BDCA. While **Annex 2** to BCAR OPS 1, **Section 2** has not been approved, national aviation regulations in this matter will be used.

(2) A suitable system for recording approach and/or automatic landing success and failure is established and maintained to monitor the overall safety of the operation;

(3) The operations are approved by the BDCA;

(4) The flight crew consists of at least 2 pilots; and

(5) Decision height is determined using a radio altimeter.

(b) The Operator shall not conduct low visibility take-offs in less than 150 m RVR (Category A, B and C aeroplanes) or 200 m RVR (Category D aeroplanes) unless approved by the BDCA.

BCAR-OPS 1.445 Low visibility operations – aerodrome considerations

a) The Operator shall not use an aerodrome for Category II or III operations unless the aerodrome is approved for such operations by the State in which the aerodrome is located.

b) Category II and Category III instrument approach operations shall not be authorised unless RVR information is provided.

c) The Operator shall verify that Low Visibility Procedures (LVP) have been established, and will be enforced, at those aerodromes where low visibility operations are to be conducted.

d) The operator must verify that low visibility procedures (LVP) have been established and are in force at those aerodromes where such operations are to be carried out.

BCAR-OPS 1.450 Low visibility operations – training and qualifications

(See Appendix 1 to BCAR-OPS 1.450)
(See AMC OPS 1.450(g) (1))

(a) The Operator shall ensure that, prior to conducting Low Visibility Take-Off, Category II and III operations:

(1) Each flight crew member:

(i) Completes the training and checking requirements prescribed in Appendix 1 including flight simulator training in operating to the limiting values of RVR and decision height appropriate to the operator's Category II/III approval; and

(ii) Is qualified in accordance with Appendix 1 to BCAR OPS 1.450;

(2) The training and checking are conducted in accordance with a detailed syllabus approved by the BDCA and included in the Operations Manual. This training is in addition to that prescribed in Subpart N; and

(3) The flight crew qualification is specific to the operation and the aeroplane type.

BCAR-OPS 1.455 Low visibility operations – operating procedures

(See Appendix 1 to BCAR-OPS 1.455)

(a) The Operator must establish procedures and instructions to be used for Low Visibility Take-Off and Category II and III operations. These procedures must be included in the Operations Manual and contain the duties of flight crew members during taxiing, take-off, approach, flare, landing, rollout, and missed approach as appropriate.

(b) The pilot in command shall satisfy himself that:

(1) The status of the visual and non-visual facilities is sufficient prior to commencing a Low Visibility Take-Off or a Category II or III approach;

(2) Appropriate LVPs are in force according to information received from ATS, before commencing a Low Visibility Take-off or a Category II or III approach; and

(3) The flight crew members are properly qualified prior to commencing a Low Visibility Take-off in an RVR of less than 150 m (Category A, B and C aeroplanes) or 200 m (Cat D aeroplanes) or a Category II or III approach.

BCAR-OPS 1.460 Low visibility operations – Minimum equipment

(a) The Operator must include, in the Operations Manual, the minimum equipment that has to be serviceable at the commencement of a Low Visibility Take-off or a Category II or III approach in accordance with the AFM or other approved document.

(b) The pilot in command shall satisfy himself that the status of the aeroplane and of the relevant airborne systems is appropriate for the specific operation to be conducted.

BCAR-OPS 1.465 VFR operating minima

(See Appendix 1 to BCAR-OPS 1.465)

(a) The Operator shall ensure that:

(1) VFR flights are conducted in accordance with the Visual Flight Rules and in accordance with the Table in Appendix 1 to BCAR-OPS 1.465.

(2) Special VFR flights are not commenced when the visibility is less than 3 km and are not otherwise conducted when the visibility is less than 1.5 km.

Appendix 1 to BCAR-OPS 1.430 Aerodrome operating minima

(See BCAR-OPS 1.430)
(See AMC of Appendix 1 to BCAR-OPS 1.430)

(a) *Take off minima*

(1) *General*

(i) Take-off minima established by the operator must be expressed as visibility or RVR limits, taking into account all relevant factors for each aerodrome planned to be used and the aeroplane characteristics. Where there is a specific need to see and avoid obstacles on departure and/or for a forced landing, additional conditions (e.g., ceiling) must be specified.

(ii) The pilot in command shall not commence take-off unless the weather conditions at the aerodrome of departure are equal to or better than applicable minima for landing at that aerodrome unless a suitable take-off alternate aerodrome is available.

(iii) When the reported meteorological visibility is below that required for take-off and RVR is not reported, a take-off may only be commenced if the pilot in command can determine that the RVR/visibility along the take-off runway is equal to or better than the required minimum.

(iv) When no reported meteorological visibility or RVR is available, a take-off may only be commenced if the pilot in command can determine that the RVR/visibility along the take-off runway is equal to or better than the required minimum.

(2) *Visual reference*. The take-off minima must be selected to ensure sufficient guidance to control the aeroplane in the event of both a discontinued take-off in adverse circumstances and a continued take-off after the failure of the critical power unit.

(3) *RVR/required visibility*.

(i) For multi-engine aeroplanes, whose performance is such that, in the event of a critical power unit failure at any point during take-off, the aeroplane can either stop or continue the take-off to a height of 1 500 ft. above the aerodrome while clearing obstacles by the required margins, the take-off minima established by The Operator must be expressed as RVR/Visibility values not lower than those given in Table 1 below except as provided in paragraph (4) below.

Table 1 - RVR/Visibility for take-off

RVR/Visibility for take-off	
Facilities	**RVR/Visibility** (See (a)(3)(i)(C) of this section)
Nil (day only)	500 m
Runway edge lighting and/or centreline marking	250/300 m (See(a)(3)(i)(A) and (B)of this section)
Runway edge and centreline lighting	200/250 m (See (a) (3)(i)(A) of this section)
Runway edge and centreline lighting and multiple RVR information	150/200 m (See (a)(3)(i)(A) and (D)of this section)

(A) The higher values apply to Category D aeroplanes.

(B) For night operations at least runway edge and runway end lights are required.

(C) The reported RVR/Visibility value representative of the initial part of the take-off run can be replaced by pilot assessment.

(D) The required RVR value must be achieved for all the relevant RVR reporting points with the exception given in (C) above.

(ii) For multi-engine–aeroplanes whose performance is such that they cannot comply with the performance conditions in subparagraph (a)(3)(i) above in the event of a critical power unit failure, there may be a need to re-land immediately and to see and avoid obstacles in the take-off area. Such aeroplanes may be operated to the following take-off minima provided they are able to comply with the applicable obstacle clearance criteria, assuming engine failure at the height specified. The take-off minima established by The Operator must be based upon the height from which the one engine inoperative net take-off flight path can be constructed. The RVR minima used may not be lower than either of the values given in Table 1 above or Table 2 below.

Table 2 - Assumed engine failure height above the runway versus RVR/Visibility

Take-off RVR/Visibility – flight path	
Assumed engine failure height above the take-off runway	**RVR/Visibility** (See (a)(3)(ii)(B) of this section)
< 50 feet	200 m
51 - 100 feet	300 m
101 – 150 feet	400 m
151 – 200 feet	500 m
201 – 300 feet	1.000 m
> 300 feet	1.500 m (See (a)(3)(ii)(A) of this section)

(A) 1 500 m is also applicable if no positive take-off flight path can be constructed.

(B) The reported RVR/Visibility value representative of the initial part of the take-off run can be replaced by pilot assessment.

(iii) When reported RVR, or meteorological visibility is not available, the pilot in command shall not commence take-off unless he/she can determine that the actual conditions satisfy the applicable take-off minima.

(4) *Exception to paragraph (a) (3) (i) above*:

(i) Subject to the approval of the BDCA, and provided the requirements in paragraphs (A) to (E) below have been satisfied, The Operator may reduce the take-off minima to 125 m RVR (Category A, B and C aeroplanes) or 150 m RVR (Category D aeroplanes) when:

(A) Low visibility procedures are in force;

(B) High intensity runway centreline lights spaced 15 m or less and high intensity edge lights spaced 60 m or less are in operation;

(C) Flight crew members have satisfactorily completed training in a Flight Simulator; or

(D) A 90 m visual segment is available from the cockpit at the start of the take-off run; and

(E) The required RVR value has been achieved for all the relevant RVR reporting points.

(ii) Subject to the approval of the BDCA, The Operator of an aeroplane using an approved lateral guidance system for take-off may reduce the take-off minima to an RVR less than 125 m (Category A, B and C aeroplanes) or 150 m (Category D aeroplanes) but not lower than 75 m provided runway protection and facilities equivalent to Category III landing operations are available.

(b) *Non-precision approach*

(1) *System minima*

(i) The Operator must ensure that system minima for non-precision approach procedures, which are based upon the use of ILS without glidepath (LLZ only), VOR, NDB, SRA and VDF are not lower than the MDH values given in **Table 3** below.

Table 3 - System minima for non-precision approach aids

System minima	
Aids	**Minimum MDH**
ILS (no glide path - LLZ)	250 ft.
SRA (terminating at 0.5 MN)	250 ft.
SRA (terminating at 1 MN)	300 ft.
SRA (terminating at 2 MN)	350 ft.

VOR	300 ft.
VOR/DME	250 ft.
NDB	300 ft.
VDF (QDM and QGH)	300 ft.

(2) *Minimum descent height*. The Operator must ensure that the minimum descent height for a non-precision approach is not lower than either:

(i) The OCH/OCL for the category of aeroplane; or

(ii) The system minimum.

(3) *Visual reference*. A pilot may not continue an approach below MDA/MDH unless at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) Elements of the approach light system;

(ii) The threshold;

(iii) The threshold markings;

(iv) The threshold lights;

(v) The threshold identification lights;

(vi) The visual glide slope indicator;

(vii) The touchdown zone or touchdown zone markings;

(viii) The touchdown zone lights;

(ix) Runway edge lights; or

(x) Other visual references accepted by the BDCA.

(4) *Required RVR*. The lowest minima to be used by The Operator for non-precision approaches are:

Table 4a - RVR for non-precision approach – full facilities

Non-precision approach minima Full facilities (See (b)(4)(i), (v), (vi) and (vii) of this section)				
MDH	**RVR/ aeroplane category**			
	A	**B**	**C**	**D**
250-299 ft.	800 m	800 m	800 m	1200 m
300-449 ft.	900 m	1000 m	1000 m	1400 m
450-649 ft.	1000 m	1200 m	1200 m	1600 m
650 ft. and above	1200 m	1400 m	1400 m	1800 m

Table 4b- RVR for non-precision approach –intermediate facilities

Non-precision approach minima intermediate facilities (See (b)(4)(ii), (v), (vi) (vii) of this section)				
MDH	**RVR/ aeroplane category**			
	A	**B**	**C**	**D**
250-299 ft.	1000 m	1100 m	1200 m	1400 m
300-449 ft.	1200 m	1300 m	1400 m	1600 m
450-649 ft.	1400 m	1500 m	1600 m	1800 m
650 ft. and above	1500 m	1500 m	1800 m	2000 m

Table 4c- RVR for non-precision approach – basic facilities

Non-precision approach minima Basic facilities (See (b)(4)(iii),(v),(vi) and (vii) of this section)				
MDH	**RVR/aeroplane category**			
	A	**B**	**C**	**D**
250-299 ft.	1200 m	1300 m	1400 m	1600 m
300-449 ft.	1300 m	1400 m	1600 m	1800 m
450-649 ft.	1500 m	1500 m	1800 m	2000 m
650 ft. and above	1500 m	1500 m	2000 m	2000 m

Table 4d- RVR for non-precision approach – Nil approach light facilities

Non-precision approach minima Nil approach light facilities (See (b)(4)(iv), (v), (vi) and (vii) of this section)				
MDH	**RVR/ aeroplane category**			
	A	**B**	**C**	**D**
250-299 ft.	1500 m	1500 m	1600 m	1800 m
300-449 ft.	1500 m	1500 m	1800 m	2000 m
450-649 ft.	1500 m	1500 m	2000 m	2000 m
650 ft. and above	1500 m	1500 m	2000 m	2000 m

(i) Full facilities comprise runway markings, 720 m or more of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

(ii) Intermediate facilities comprise runway markings, 420–719 m of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

(iii) Basic facilities comprise runway markings, <420 m of HI/MI approach lights, any length of LI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

(iv) Nil approach light facilities comprise runway markings, runway edge lights, threshold lights, runway end lights or no lights at all.

(v) The tables are only applicable to conventional approaches with a nominal descent slope of not greater than 4°. Greater descent slopes will usually require that visual glide slope guidance (e.g., VASI, PAPI, others) is also visible at the Minimum Descent Height.

(vi) The above figures are either reported RVR or meteorological visibility converted to RVR as in subparagraph (h) below.

(vii) The MDH mentioned in Table 4a, 4b, 4c and 4d refers to the initial calculation of MDH. When selecting the associated RVR, there is no need to consider rounding up to the nearest ten feet, which may be done for operational purposes, e.g., conversion to MDA.

(5) *Night operations*. For night operations, at least runway edge, threshold and runway end lights must be on.

(c) *Precision approach – Category I operations*

(1) *General*. A Category I operation is a precision instrument approach and landing using ILS, MLS, or PAR with a decision height not lower than 200 ft. and with a runway visual range not less than 550 m.

(2) *Decision height*. The Operator must ensure that the decision height to be used for a Category I precision approach is not lower than:

(i) The minimum decision height specified in the AFM if stated;

(ii) The minimum height to which the precision approach aid can be used without the required visual reference;

(iii) The OCH/OCL for the category of an aeroplane; or

(iv) 200 feet.

(3) *Visual reference*. A pilot may not continue an approach below the Category I decision height, determined in accordance with subparagraph (c)(2) above, unless at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) Elements of the approach light system;

(ii) The threshold;

(iii) The threshold markings;

(iv) The threshold lights;

(v) The threshold identification lights;

(vi) The visual glide slope indicator;

(vii) The touchdown zone or touchdown zone markings;

(viii) The touchdown zone lights; or

(ix) Runway edge lights.

(4) *Required RVR*. The lowest minima to be used by The Operator for Category I operations are:

Table 5 - RVR for Cat I approach vs. Facilities and DH

Category I minima				
Decision Height (See(c)(4)(vii))	**Facilities/RVR** (See (c)(4)(v))			
	Full (See (c)(4)(i) and (vi))	Intermediate (See (c)(4)(ii) and (vi))	Basic (See (c)(4)(iii) and (vi))	Nil (See (c)(4)(iv) y (vi))
200 ft.	550 m	700 m	800 m	1000 m
201-250 ft.	600 m	700 m	800 m	1000 m
251-300 ft.	650 m	800 m	900 m	1200 m
301 ft. and above	800 m	900 m	1000 m	1200 m

(i) Full facilities comprise runway markings, 720 m or more of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

(ii) Intermediate facilities comprise runway markings, 420–719 m of HI/MI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

(iii) Basic facilities comprise runway markings, <420 m of HI/MI approach lights, any length of LI approach lights, runway edge lights, threshold lights and runway end lights. Lights must be on.

(iv) Nil approach light facilities comprise runway markings, runway edge lights, threshold lights, runway end lights or no lights at all.

(v) The above figures are either the reported RVR or meteorological visibility converted to RVR in accordance with paragraph (h).

(vi) The Table is applicable to conventional approaches with a glide slope angle up to and including 4^{0}.

(vii) The DH mentioned in Table 5 refers to the initial calculation of DH. When selecting the associated RVR, there is no need to consider rounding up to the nearest ten feet, which may be done for operational purposes, (e.g., conversion to DA).

(5) *Single pilot operation*. For single pilot operations, The Operator must calculate the minimum RVR for all approaches in accordance with BCAR-OPS 1.430 and this appendix. An RVR of less than 800 m is not permitted except when using a suitable autopilot coupled to an ILS or MLS, in which case normal minima apply. The Decision Height applied must not be less than 1.25 x the minimum use height for the autopilot.

(6) *Night operations*. For night operations, at least runway edge, threshold and runway end lights must be on.

(d) *Precision approach – Category II operations*

(1) *General*. A Category II operation is a precision instrument approach and landing using ILS or MLS with:

(i) A decision height below 200 ft. (61 m) but not lower than 100 ft. (31 m); and

(ii) A runway visual range of not less than 300 m (984 ft.).

(2) *Decision height*. The Operator must ensure that the decision height for a Category II operation is not lower than:

(i) The minimum decision height specified in the AFM, if stated;

(ii) The minimum height to which the precision approach aid can be used without the required visual reference;

(iii) The OCH/OCL for the category of an aeroplane;

(iv) The decision height to which the flight crew is authorised to operate; or

(v) 100 feet.

(3) *Visual reference*. A pilot may not continue an approach below the Category II decision height determined in accordance with subparagraph (d)(2) above unless visual reference containing a segment of at least 3 consecutive lights being the centre line of the approach lights, or touchdown zone lights, or runway centre line lights, or runway edge lights, or a combination of these is attained and can be maintained. This visual reference must include a lateral element of the ground pattern, i.e., an approach lighting crossbar or the landing threshold or a barrette of the touchdown zone lighting.

(4) *Required RVR*. The lowest minima to be used by The Operator for Category II operations are:

Table 6 - RVR for Cat II approach vs DH

Category II minima		
Decision height	**Auto-coupled to below DH** (See (d)(4)(i))	
	RVR/aeroplane categories A,B,C	RVR/aeroplane category D
100-120 ft.	300 m	300 m (See (d)(4)(ii))/350 m
121-140 ft.	400 m	400 m
141 ft. and above	450 m	450 m

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

(ii) 300 m may be used for a Category D Aeroplane conducting an autoland. (See AMC to Appendix 1 of BCAR-OPS 1.430, sections (d) and (e))

(e) *Precision approach - Category III operations*

(1) *General*. Category III operations are subdivided as follows:

(i) *Category III A operations*. A precision instrument approach and landing using ILS or MLS with:

(A) A decision height lower than 100 ft.; and

(B) A runway visual range not less than 200 m (656 feet).

(ii) *Category III B operations*. A precision instrument approach and landing using ILS or MLS with:

(A) A decision height lower than 15 m (50 ft.), or no decision height; and

(B) A runway visual range lower than 200 m (656 ft.) but not less than 75 m (246 ft.).

(C) Where the decision height (DH) and runway visual range (RVR) do not fall within the same Category, the RVR will determine in which Category the operation is to be considered

(2) *Decision height*. For operations in which a decision height is used, The Operator must ensure that the decision height is not lower than:

(i) The minimum decision height specified in the AFM, if stated;

(ii) The minimum height to which the precision approach aid can be used without the required visual reference; or

(iii) The decision height to which the flight crew is authorised to operate.

(3) *No decision height operations*. Operations with no decision height may only be conducted if:

(i) The operation with no decision height is authorised in the AFM;

(ii) The approach aid and the aerodrome facilities can support operations with no decision height; and

(iii) The operator has an approval for CAT III operations with no decision height.

(iv) In the case of a CAT III runway, it may be assumed that operations with no decision height can be supported unless specifically restricted as published in the AIP or NOTAM.

(4) *Visual reference*

(i) For Category IIIA operations, and for Category IIIB operations with fail passive flight control systems, a pilot may not continue an approach below the decision height determined in accordance with subparagraph (e)(2) above unless a visual reference containing a segment of at least 3 consecutive lights being the centreline of the approach lights, or touchdown zone lights, or runway centreline lights, or runway edge lights, or a combination of these is attained and can be maintained.

(ii) For Category IIIB operations with fail-operational flight control systems using a decision height a pilot may not continue an approach below the decision height, determined in accordance with subparagraph (e)(2) above, unless a visual reference containing at least one centreline light is attained and can be maintained.

(iii) For Category III operations with no decision height there is no requirement for visual contact with the runway prior to touchdown.

(5) *Required RVR*. The lowest minima to be used by The Operator for Category III operations are:

Table 7 - RVR for Cat III approach vs. DH and roll-out control/guidance system
(See AMC of Appendix 1 to BCAR-OPS 1.430, section (e) (5))

Category III minima			
Approach category	**Decision height (ft.) (See (e)(5)(iii))**	**Roll-out control/ guidance system**	**RVR (m)**
III A	Less than 100 ft.	Not required	200 m (See (e)(5)(i))
III B	Less than 100 ft.	Fail-passive	150 m (See (e)(5)(i) y (ii))
III B	Less than 50 ft.	Fail-passive	125 m
III B	Less than 50 ft. or without DH	Fail operational	75 m

(i) For fail-passive operations see AMC of Appendix 1 to BCAR-OPS 1.430, paragraph (e) (5) Crew actions in case of autopilot failure at or below decision height in fail-passive Category III operations.

(ii) For aeroplanes certificated in accordance with the corresponding AWO regulation.

(iii) Flight control system redundancy is determined under Annex 2 to BCAR OPS 1 Section 2 by the minimum certificated decision height. (See AMC to Appendix 1 to BCAR-OPS 1.430(d) & (e))

(f) *Circling*

(1) The lowest minima to be used by The Operator for circling are:

Table 8 - Visibility and MDH for circling vs. aeroplane category

Aeroplane category				
	A	**B**	**C**	**D**
MDH	400 ft.	500 ft.	600 ft.	700 ft.
Minimum meteorological visibility	1500 m	1600 m	2400 m	3600 m

(2) Circling with prescribed tracks is an accepted procedure within the meaning of this paragraph (See AMC to Appendix 1 of BCAR-OPS 1.430 (f))

(g) *Visual approach*. The Operator shall not use an RVR of less than 800 m for a visual approach.

(h) *Conversion of reported meteorological visibility to RVR.*

(1) The Operator must ensure that a meteorological visibility to RVR conversion is not used for calculating take-off minima, Category II or III minima or when a reported RVR is available. If the RVR is reported as being above the maximum value assessed by the aerodrome operator, e.g., 'RVR more than 1 500 metres', it is not considered to be a reported RVR in this context and the Conversion Table may be used.

(2) When converting meteorological visibility to RVR in all other circumstances than those in subparagraph (h)(1) above, The Operator must ensure that the following table is used:

Table 9 - Conversion of visibility to RVR

Lighting elements in operation	**RVR= Reported Met. Visibility x**	
	Day	Night
HI approach and runway lighting	1.5	2.0
Any type of lighting installation other than above	1.0	1.5
No lighting	1.0	Not applicable

Appendix 2 to BCAR-OPS 1.430 (c) Aeroplane categories – All weather operations
(See BCAR-OPS 1.430)

(a) Aeroplane classification

The criteria taken into consideration for the classification of aeroplanes by categories is the indicated airspeed at threshold (V_{AT}) which is equal to the stalling speed (V_{SO}) multiplied by 1.3 or V_{S1G} multiplied by 1.23 in the landing configuration at the maximum certificated landing weight. If both V_{SO} and V_{S1G} are available, the higher resulting V_{AT} shall be used. The aeroplane categories corresponding to V_{AT} values are in the table below:

Aeroplane category	V_{AT}
A	Less than 91 kt
B	From 9l to l20 kt
C	From l2l to l40 kt
D	From l4l to l65 kt
E	From 166 to 2l0 kt

The landing configuration which is to be taken into consideration shall be defined by the operator or by the aeroplane manufacturer.

(b) *Permanent change of category (maximum landing weight)*

(1) The Operator may impose a permanent, lower, landing weight, and use this weight for determining the V_{AT} if approved by the BDCA.

(2) The category defined for a given aeroplane shall be a permanent value and thus independent of the changing conditions of day-to-day operations.

Appendix 1 to BCAR-OPS 1.440 Low visibility operations – General operating rules
(See BCAR-OPS 1.440)

(a) *General.* The following procedures apply to the introduction and approval of low-visibility operations.

(b) *Operational demonstration.* The purpose of the operational demonstration is to determine or validate the use and effectiveness of the applicable aeroplane flight guidance systems, training, flight crew procedures, maintenance programme, and manuals applicable to the Category II/III programme being approved.

(1) At least 30 approaches and landings must be accomplished in operations using the Category II/III systems installed in each aeroplane type if the requested DH is 50 ft. or higher. If the DH is less than 50 ft., at least 100 approaches and landings will need to be accomplished unless otherwise approved by the BDCA.

(2) If The Operator has different variants of the same type of aeroplane utilising the same basic flight control and display systems, or different basic flight control and display systems on the same type of aeroplane, the operator must show that the various variants have satisfactory performance, but the operator need not conduct a

operational demonstration for variant. The BDCA may also accept a reduction of the number of approaches and landings based on credit given for the experience gained by another operator with an AOC issued in accordance with BCAR-OPS 1 using the same aeroplane type or variant and procedures.

(3) If the number of unsuccessful approaches exceeds 5% of the total (e.g., unsatisfactory landings, system disconnects) the evaluation programme must be extended in steps of at least 10 approaches and landings until the overall failure rate does not exceed 5 %.

(c) *Data collection for operational demonstrations*. Each applicant must develop a data collection method (e.g., a form to be used by the flight crew) to record the approach and landing performance. The resulting data and a summary of the demonstration data shall be made available to the BDCA for evaluation.

(d) *Data analysis*. Unsatisfactory approaches and/or automatic landings shall be documented and analysed.

(e) *Continuous surveillance*

(1) After obtaining the initial authorisation, the operations must be continuously monitored by the operator to detect any undesirable trends before they become hazardous. Flight crew reports may be used to achieve this.

(2) The following information must be retained for a period of 12 months:

(i) The total number of approaches, by aeroplane type, where the airborne Category II or III equipment was utilised to make satisfactory, actual or practice, approaches to the applicable Category II or III minima; and

(ii) Reports of unsatisfactory approaches and/or automatic landings, by aerodrome and aeroplane registration, in the following categories:

(A) Airborne equipment faults;

(B) Ground facility difficulties;

(C) Missed approaches because of ATC instructions; or

(D) Other reasons.

(3) The Operator must establish a procedure to monitor the performance of the automatic landing system of each aeroplane.

(f) *Transitional period*

(1) *Operators with no previous Category II or III experience*.

(i) The Operator without previous Category II or III operational experience may be approved for Category II or IIIA operations, having gained a minimum experience of 6 months of Category I operations on the aeroplane type.

(ii) On completing 6 months of Category II or IIIA operations on the aeroplane type, the operator may be approved for Category IIIB operations. When granting such an approval, the BDCA may impose higher minima than the lowest applicable for an additional period. The increase in minima will normally only refer to RVR and/or a restriction against operations with no decision height and must be selected such that they will not require any change of the operational procedures.

(2) *Operators with previous Category II or III experience*. The Operator with previous Category II or III experience may obtain authorisation for a reduced transition period by application to the BDCA.

(g) *Maintenance of Category II, Category III and LVTO equipment.* Maintenance instructions for the on-board guidance systems must be established by the operator, in liaison with the manufacturer, and included in the operator's aeroplane maintenance programme prescribed in BCAR-OPS 1.910, which must be approved by the BDCA.

(h) Eligible aerodromes and runways

(1) Each aeroplane type/on-board equipment/runway combination must be verified by the successful completion of at least one approach and landing in Category II or better conditions, prior to commencing Category III operations.

(2) For runways with irregular pre-threshold terrain or other foreseeable or known deficiencies, each aeroplane type/on-board equipment/runway combination must be verified by operations in Category I or better conditions, prior to commencing Category II or III operations.

(3) If The Operator has different variants of the same type of aeroplane utilising the same basic flight control and display systems, or different basic flight control and display systems on the same type of aeroplane, the operator must show that the various variants have satisfactory performance, but the operator need not conduct a operational demonstration for each variant/runway combination.

(4) Operators using the same aeroplane type/variant and on-board equipment combination and procedures may take credit from each other's experience and records in complying with this paragraph.

Appendix 1 to BCAR-OPS 1.450 Low visibility operations – Training and qualifications

(See BCAR OPS 1.450)

(a) *General.* The Operator must ensure that flight crew member training programmes for Low Visibility Operations include structured courses of ground, Flight Simulator and/or flight training. The operator may abbreviate the course content as prescribed by subparagraphs (2) and (3) below provided the content of the abbreviated course is acceptable to the BDCA.

(1) Flight crew members with no Category II or Category III experience must complete the full training programme prescribed in subparagraphs (b), (c) and (d) below.

(2) Flight crew members with Category II or Category III experience with another BCAR-OPS operator may undertake an abbreviated ground training course.

(3) Flight crew members with Category II or Category III experience with the operator may undertake an abbreviated ground, flight simulator and/or flight training course. The abbreviated course is to include at least the requirements of subparagraphs (d)(1), (d)(2)(i) or (d)(2)(ii) as appropriate and (d)(3)(i).

(b) *Ground training*. The Operator must ensure that the initial ground training course for Low Visibility Operations covers at least:

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

(2) The characteristics of the visual aids;

(3) The characteristics of fog;

(4) The operational capabilities and limitations of the particular airborne system;

(5) The effects of precipitation, ice accretion, low-level wind shear and turbulence;

(6) The effect of specific aeroplane malfunctions;

(7) The use and limitations of RVR assessment systems;

(8) The principles of obstacle clearance requirements;

(9) Recognition of and action to be taken in the event of failure of ground equipment;

(10) The procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m (200 m for Category D aeroplanes);

(11) The significance of decision heights based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems;

(12) The importance and significance of alert height if applicable and the action in the event of any failure above and below the alert height.

(13) The qualification requirements for pilots to obtain and retain approval to conduct low visibility take-offs and Category II or III operations; and

(14) The importance of correct seating and eye position.

(c) *Flight Simulator training and/or flight training*

(1) The Operator must ensure that flight simulator and/or flight training for low visibility operations includes:

(i) Checks of satisfactory functioning of equipment, both on the ground and in flight;

(ii) Effect on minima caused by changes in the status of ground installations;

(iii) Monitoring of automatic flight control systems and Autoland status annunciators with emphasis on the action to be taken in the event of failures of such systems;

(iv) Actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems;

(v) The effect of known unserviceability and use of minimum equipment lists;

(vi) Operating limitations resulting from airworthiness certification;

(vii) Guidance on the visual cues required at decision height together with information on maximum deviation allowed from glidepath or localiser; and

(viii) The importance and significance of alert height, if applicable, and the action in the event of any failure above and below the alert height.

(2) The Operator must ensure that each flight crew member is trained to carry out his/her duties and instructed on the coordination required with other crew members. Maximum use should be made of flight simulators.

(3) Training must be divided into phases covering normal operation with no aeroplane or equipment failures but including all weather conditions, which may be encountered and detailed scenarios of aeroplane and equipment failure, which could affect Category II or III operations. If the aeroplane system involves the use of hybrid or other special systems (such as head up displays or enhanced vision equipment) then flight crew

members must practise the use of these systems in normal and abnormal modes during the flight simulator phase of training.

(4) Incapacitation procedures appropriate to Low Visibility Take-offs and Category II and III operations shall be practised.

(5) For aeroplanes with no flight simulator available to represent that specific aeroplane operators must ensure that the flight training phase specific to the visual scenarios of Category II operations is conducted in a specifically approved Flight Simulator. Such training must include a minimum of 4 approaches. The training and procedures that are type specific shall be practised in the aeroplane.

(6) Initial Category II and III training shall include at least the following exercises:

(i) Approach using the appropriate flight guidance, autopilots and control systems installed in the aeroplane, to the appropriate decision height and to include transition to visual flight and landing;

(ii) Approach with all engines operating using the appropriate flight guidance systems, autopilots and control systems installed in the aeroplane down to the appropriate decision height followed by missed approach; all without external visual reference;

(iii) Where appropriate, approaches utilising automatic flight systems to provide automatic flare, landing and roll-out; and

(iv) Normal operation of the applicable system both with and without acquisition of visual cues at decision height.

(7) Subsequent phases of training must include at least:

(i) Approaches with engine failure at various stages on the approach;

(ii) Approaches with critical equipment failures (e.g., electrical systems, autoflight systems, ground and/or airborne ILS/MLS systems and status monitors);

(iii) Approaches where failures of autoflight equipment at low level require either;

(A) Reversion to manual flight to control flare, landing and roll out or missed approach; or

(B) Reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below decision height including those which may result in a touchdown on the runway;

(iv) Failures of the systems, which will result in excessive localiser and/or glideslope deviation, both above and below decision height, in the minimum visual conditions

authorised for the operation. In addition, a continuation to a manual landing must be practised if a head-up display forms a downgraded mode of the automatic system or the head-up display forms the only flare mode; and

(v) Failures and procedures specific to aeroplane type or variant.

(8) The training programme must provide practice in handling faults which require a reversion to higher minima.

(9) The training programme must include the handling of the aeroplane when, during a fail passive Category III approach, the fault causes the autopilot to disconnect at or below decision height when the last reported RVR is 300 m or less.

(10) Where take-offs are conducted in RVRs of 400 m and below, training must be established to cover systems failures and engine failures resulting in continued as well as rejected take-offs.

(d) *Conversion training requirements to conduct low visibility take-off and category II and III operations*. The Operator shall ensure that each flight crew member completes the following low visibility procedures training if converting to a new type or variant of aeroplane in which Low Visibility Take-off and Category II and III Operations will be conducted. The flight crew member experience requirements to undertake an abbreviated course are prescribed in subparagraphs (a)(2) and (a)(3), above:

(1) *Ground training.* The appropriate requirements prescribed in subparagraph (b) above, considering the flight crew member's Category II and Category III training and experience.

(2) *Flight simulator training and/or flight training.*

(i) A minimum of 8 approaches and/or landings in a flight simulator.

(ii) Where no flight simulator is available to represent that specific aeroplane, a minimum of 3 approaches including at least 1 go-around is required on the aeroplane.

(iii) Appropriate additional training if any special equipment is required such as head-up displays or enhanced vision equipment.

(3) **Flight crew qualification.** The flight crew qualification requirements are specific to the operator and the type of aeroplane operated.

(i) The operator must ensure that each flight crew member completes a check before conducting Category II or III operations.

(ii) The check prescribed in subparagraph (i) above may be replaced by successful completion of the Flight Simulator and/or flight training prescribed in subparagraph (d)(2) above.

(4) **Line flying under supervision**. The Operator must ensure that each flight crew member undergoes the following line flying under supervision.

(i) For Category II, when a manual landing is required, a minimum of 3 landings from autopilot disconnect;

(ii) For Category III, a minimum of 3 autoland except that only 1 autoland is required when the training required in subparagraph (d)(2) above has been carried out in a Flight Simulator usable for zero flight time conversion.

(e) **Type and command experience**. Before commencing Category II/III operations, the following additional requirements are applicable to pilots in commands, or pilots to whom conduct of the flight may be delegated, who are new to the aeroplane type:

(1) 50 hours or 20 sectors on the type, including line flying under supervision; and

(2) 100 m must be added to the applicable Category II or Category III RVR minima unless he/she has previously qualified for Category II or III operations with an BCAR-OPS operator, until a total of 100 hours or 40 sectors, including line flying under supervision has been achieved on the type.

(3) The BDCA may authorise a reduction in the above command experience requirements for flight crew members who have Category II or Category III command experience.

(f) Low visibility take-off with RVR less than 150/200 m

(1) The Operator must ensure that the following training is given prior to authorisation to conduct take-offs in RVRs below 150 m (below 200 m for Category D aeroplanes):

(i) Normal take-off in minimum authorised RVR conditions;

(ii) Take-off in minimum authorised RVR conditions with an engine failure between V1 and V2, or as soon as safety considerations permit;

(iii) Take-off in minimum authorised RVR conditions with an engine failure before V1 resulting in a rejected take- off.

(2) The Operator must ensure that the training required by subparagraph (1) above is carried out in a Flight Simulator. This training must include the use of any special procedures and equipment. Where no Flight Simulator is available to represent that specific aeroplane, the BDCA may approve such training in an aeroplane without the requirement for minimum RVR conditions. (See Appendix 1 to BCAR-OPS 1.965).

(3) The Operator must ensure that a flight crew member has completed a check before conducting low visibility take-offs in RVRs of less than 150 m (less than 200 m for Category D aeroplanes) if applicable. The check may only be replaced by successful completion of the Flight Simulator and/or flight training prescribed in subparagraph (f)(1) on conversion to an aeroplane type.

(g) *Recurrent training and checking – low visibility operations.*

(1) The Operator must ensure that, in conjunction with the normal recurrent training and operator proficiency checks, a pilot's knowledge and ability to perform the tasks associated with the category of operation for which he/she is authorised is checked. The required number of approaches within the validity period of the operator proficiency check (as prescribed in BCAR-OPS 1.965 (b)), is to be a minimum of three, one of which may be substituted by an approach and landing in the aeroplane using approved Category II or III procedures. One missed approach shall be flown during the conduct of the operator proficiency check. If the operator is authorised to conduct take-off with RVR less than 150/200 m, at least one LVTO to the lowest applicable minima shall be flown during the conduct of the operator proficiency check (See AMC OPS 1.450 (g) (1)).

(2) For Category III operations The Operator must use a Flight Simulator.

(3) The Operator must ensure that, for Category III operations on aeroplanes with a failed passive flight control system, a missed approach is completed at least once over the period of three consecutive operator proficiency checks as the result of an autopilot failure at or below decision height when the last reported RVR was 300 m or less.

(4) The BDCA may authorise recurrent training and checking for Category II and LVTO operations in an aeroplane type where no Flight Simulator to represent that specific aeroplane or an acceptable alternate is available. Recency for LVTO and Category II/III based upon automatic approaches and/or auto-lands is maintained by the recurrent training and checking as prescribed in this paragraph.

Appendix 1 to BCAR-OPS 1.455 Low visibility operations - Operating procedures
(See BCAR OPS 1.455)

(a) *General.* Low Visibility Operations include:

(1) Manual take-off (with or without electronic guidance systems);

(2) Auto-coupled approach to below DH, with manual flare, landing and roll-out;

(3) Auto-coupled approach followed by auto-flare, autoland, and manual roll-out;

(4) Auto-coupled approach followed by auto-flare, autoland, and auto-roll-out, when the applicable RVR is less than 400 m;

(5) A hybrid system may be used with any of these modes of operations; and

(6) Other forms of guidance systems or displays may be certificated and approved.

(b) *Procedures and operating instructions*

(1) The precise nature and scope of procedures and instructions given depend upon the airborne equipment used and the flight deck procedures followed. The Operator must clearly define flight crew member duties during take-off, approach, flare, rollout and missed approach in the Operations Manual. Emphasis must be placed on flight crew responsibilities during the transition from non-visual conditions to visual conditions, and on the procedures to be used in deteriorating visibility or when failures occur. Special attention must be paid to the distribution of flight deck duties to ensure that the workload of the pilot making the decision to land or execute a missed approach enables him/her to devote himself to supervision and the decision-making process.

(2) The Operator must specify the detailed operating procedures and instructions in the Operations Manual. The instructions must be compatible with the limitations and mandatory procedures contained in the AFM and cover the following items in particular:

(i) Checks for the satisfactory functioning of the aeroplane equipment, both before departure and in flight;

(ii) Effect on minima caused by changes in the status of the ground installations and airborne equipment;

(iii) Procedures for the take-off, approach, flare, landing, roll-out and missed approach;

(iv) Procedures to be followed in the event of failures, warnings and other non-normal situations;

(v) The minimum visual reference required;

(vi) The importance of correct seating and eye position;

(vii) Action which may be necessary arising from a deterioration of the visual reference;

(viii) Allocation of crew duties in the carrying out of the procedures according to subparagraphs (i) to (iv) and (vi) above to allow the Pilot in command to devote himself mainly to supervision and decision making;

(ix) The requirement for all height calls below 200 ft. to be based on the radio altimeter and for one pilot to continue to monitor the aeroplane instruments until the landing is completed;

(x) The requirement for the Localiser Sensitive Area to be protected;

(xi) The use of information relating to wind velocity, windshear, turbulence, runway contamination and use of multiple RVR assessments;

(xii) Procedures to be used for practice approaches and landing on runways at which the full Category II or Category III aerodrome procedures are not in force;

(xiii) Operating limitations resulting from airworthiness certification; and

(xiv) Information on the maximum deviation allowed from the ILS glide path and/or localiser.

Appendix 1 to BCAR-OPS 1.465 Minimum visibility for VFR operations

Airspace category	**B**	**C D E**	**F**	**G**
			Above 900 m (3 000 ft.) AMSL or above 300 m (1 000 ft.) above terrain, whichever is the higher.	At and below 900 m (3 000 ft.) AMSL or 300 m (1 000 ft.) above terrain, whichever is the higher.
Distance from cloud	No clouds	1 500 m horizontally 300 m (1 000 ft.) vertically		Clear of cloud and in sight of the surface
Flight visibility	8 km at and above 3 050 m (10 000 ft.) AMSL (See (a) of this appendix) 5 km below 3 050 m (10 000 ft.) AMSL			5 Km (See (b) of this Appendix)

(a) When the height of the transition altitude is lower than 3 050 m (10 000 ft.) AMSL, FL 100 should be used in lieu of 10 000ft.

(b) Cat A and B aeroplanes may be operated in flight visibilities down to 3 000 m, provided the appropriate ATS authority permits use of a flight visibility less than 5 km, and the

circumstances are such, that the probability of encounters with other traffic is low, and the IAS is 140 kt or less.

SUBPART F – PERFORMANCE. GENERAL

BCAR-OPS 1.470 Applicability

(a) The Operator shall ensure that multi-engine aeroplanes powered by turboprop engines with a maximum approved passenger seating configuration of more than 9 or a maximum take-off weight exceeding 5 700 kg, and all multi-engine turbojet-powered aeroplanes are operated in accordance with Subpart G (Performance Class A)).

(b) The Operator shall ensure that propeller driven aeroplanes with a maximum approved passenger seating configuration of 9 or less, and a maximum take-off weight of 5 700 kg or less are operated in accordance with Subpart H (Performance Class B).

(c) The Operator shall ensure that aeroplanes powered by reciprocating engines with a maximum approved passenger seating configuration of more than 9 or a maximum take-off weight exceeding 5 700 kg are operated in accordance with Subpart I (Performance Class C).

(d) Where full compliance with the requirements of the appropriate Subpart cannot be shown due to specific design characteristics (e.g. supersonic aeroplanes or seaplanes), the operator shall apply approved performance standards that ensure a level of safety equivalent to that of the appropriate Subpart.

(e) Multi-engine aeroplanes powered by turboprop engines with a maximum approved passenger seating configuration of more than 9 and with a maximum take-off weight of 5 700 kg or less may be permitted by the Authority to operate under alternative operating limitations to those of Performance Class A which shall not be less restrictive than those of the relevant requirements of Subpart H;

BCAR-OPS 1.475 General

(See AMC OPS 1.475(b))
(See AMC OPS 1.475(b))

(a) The Operator shall ensure that the weight of the aeroplane:

(1) At the start of the take-off or in the event of in-flight replanning;

(2) At the point from which the revised operational flight plan applies, is not greater than the weight at which the requirements of the appropriate Subpart can be complied with for the flight to be undertaken, allowing for expected reductions in weight as the flight proceeds and for such fuel, if necessary.

(b) A flight shall not commence unless the operator ensures that the approved performance data contained in the AFM are used to determine compliance with the requirements of the appropriate Subpart, supplemented, when such information is insufficient, or as necessary with other data acceptable to the Authority as prescribed in the relevant Subparts. When applying the factors prescribed in the appropriate Subpart, account may be taken of any operational factors already incorporated in the AFM performance data to avoid double application of factors. (See AMC 1 of BCAR OPS 1.475(b) and AMC 2 of BCAR OPS 1.475(b)).

(c) In applying the Standards of this Subpart, account shall be taken of all factors that significantly affect the performance of the aeroplane, including but not limited to: the mass of the aeroplane, the operating procedures, the pressure-altitude appropriate to the elevation of the aerodrome, the ambient temperature, the wind, the runway slope, and surface conditions of the runway i.e., presence of snow, slush, water, and/or ice for landplanes, water surface condition for seaplanes. Such factors shall be considered directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aeroplane is being registered.

(d) The Operator shall take account of the accuracy of runway analysis, at both take-off and landing, when assessing compliance with the take-off or landing requirements of the applicable subpart.

(e) In addition, The Operator shall ensure that an aeroplane is operated in compliance with the terms of its certificate of airworthiness and within the approved use limitations stated in the flight manual (AFM, POH).

(f) Both the BDCA and the State of Registry shall take such precautions as are reasonably possible to ensure that the general level of safety contemplated by these provisions is maintained under all expected operating conditions, including those specifically addressed in Subpart F, or the relevant Subpart, in accordance with the aeroplane performance class concerned.

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

(h) The operator shall ensure that in no case shall the weight at the start of take-off, or at the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, exceed the relevant maximum masses at which compliance has been demonstrated with the applicable noise certification standards contained in the relevant noise certification regulation, unless otherwise

authorised in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem.

SUBPART G – PERFORMANCE CLASS A

BCAR-OPS 1.485 General

(See AMC OPS 1.485(b))

(a) The Operator shall ensure that, for determining compliance with the requirements of this Subpart, the approved performance data in the AFM is supplemented as necessary with other data acceptable to the BDCA regarding:

(1) Accounting for reasonably expected adverse operating conditions such as take-off and landing on contaminated runways; and

(2) Consideration of engine failure in all flight phases.

(b) The Operator shall ensure that, for the wet and contaminated runway case, performance data determined in accordance with the certification regulation or equivalent acceptable to the BDCA is used. (See AMC OPS 1.485(b)).

BCAR-OPS 1.490 Take-off

(See AMC OPS 1.490(c) (3))
(See AMC OPS 1.490(c) (6))

(a) The Operator shall ensure that the take-off weight does not exceed the maximum take-off weight specified in the Aeroplane Flight Manual for the pressure altitude and the ambient temperature at the aerodrome at which the take-off is to be made.

(b) The Operator must meet the following requirements when determining the maximum permitted take-off weight:

(1) The accelerate-stop distance must not exceed the accelerate-stop distance available;

(2) The take-off distance must not exceed the take-off distance available with a clearway distance not exceeding half of the take-off run available;

(3) The take-off run must not exceed the take-off run available;

(4) Compliance with this paragraph must be shown using a single value of V_1 for the rejected and continued take-off; and

(5) On a wet or contaminated runway, the take-off weight must not exceed that permitted for a take-off on a dry runway under the same conditions.

(c) When showing compliance with subparagraph (b) above, The Operator must take account of the following:

(1) The pressure altitude at the aerodrome;

(2) The ambient temperature at the aerodrome;

(3) The runway surface condition and the type of runway surface (AMC OPS 1.490(c) (3));

(4) The runway slope in the direction of take-off;

(5) Not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component; and

(6) The loss, if any, of runway length due to alignment of the aeroplane prior to take-off (See AMC OPS 1.490(c) (6)).

BCAR-OPS 1.495 Take-off obstacle clearance

(See AMC OPS 1.495(a))
(See AMC OPS 1.495(c) (4))
(See AMC OPS 1.495(d) (1) and (e)(1))
(See AMC OPS 1.495(f))

(a) The Operator shall ensure that the net take-off flight path clears all obstacles by a vertical distance of at least 35 ft. or by a horizontal distance of at least 90 m plus 0.125 x D, where D is the horizontal distance the aeroplane has travelled from the end of the take-off distance available or the end of the take-off distance if a turn is scheduled before the end of the take-off distance available. For aeroplanes with a wingspan of less than 60 m a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m, plus 0.125 x D may be used (See AMC OPS 1.495(a)).

(b) When showing compliance with subparagraph (a) above, The Operator must take account of the following:

(1) The weight of the aeroplane at the commencement of the take-off run;

(2) The pressure altitude at the aerodrome;

(3) The ambient temperature at the aerodrome; and

(4) Not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component;

(5) The accuracy of obstacle data provided by the states of operation.

(c) When showing compliance with subparagraph (a) above:

(1) Track changes shall not be allowed up to the point at which the net take-off flight path has achieved a height equal to one-half the wingspan but not less than 50 ft. above the elevation of the end of the take-off run available. Thereafter, up to a height of 400 ft., it is assumed that the aeroplane is banked by no more than 15°. Above 400 ft. height bank angles greater than 15°, but not more than 25° may be scheduled;

(2) Any part of the net take-off flight path in which the aeroplane is banked by more than 15° must clear all obstacles within the horizontal distances specified in subparagraphs (a), (d), and (e) of this paragraph by a vertical distance of at least 50 ft.;

(3) The Operator must use special procedures, subject to the approval of the BDCA, to apply increased bank angles of not more than 20º between 200 ft. and 400 ft., or not more than 30º above 400 ft. (See Appendix 1 to BCAR-OPS 1.495(c) (3))

(4) Adequate allowance must be made for the effect of bank angle on operating speeds and flight path including the distance increments resulting from increased operating speeds (See AMC OPS 1.495(c) (4)).

(d) When showing compliance with subparagraph (a) above for those cases where the intended flight path does not require track changes of more than 15°, The Operator need not consider those obstacles which have a lateral distance greater than:

(1) 300 m, if the pilot can maintain the required navigational accuracy through the obstacle accountability area (See AMC OPS 1.495(d) (1) and (e) (1)); or

(2) 600 m, for flights under all other conditions.

(e) When showing compliance with subparagraph (a) above for those cases where the intended flight path does require track changes of more than 15°, The Operator need not consider those obstacles which have a lateral distance greater than:

(1) 600 m, if the pilot can maintain the required navigational accuracy through the obstacle accountability area (See AMC OPS 1.495(d) (1) and (e) (1)); or

(2) 900 m for flights under all other conditions.

(f) The Operator shall establish contingency procedures to satisfy the requirements of BCAR-OPS 1.495 and to provide a safe route, avoiding obstacles, to enable the aeroplane to either comply with the enroute requirements of BCAR-OPS 1.500 or land at either the aerodrome of departure or at a take-off alternate aerodrome (See AMC OPS 1.495(f)).

BCAR-OPS 1.500 En-route One engine inoperative

(See AMC OPS 1.500)

(a) The Operator shall ensure that the one engine inoperative en-route net flight path data shown in the AFM, appropriate to the meteorological conditions expected for the flight, complies with either subparagraph (b) or (c) at all points along the route. The net flight path must have a positive gradient at 1 500 ft. above the aerodrome where the landing is assumed to be made after engine failure. In meteorological conditions requiring the operation of ice protection systems, the effect of their use on the net flight path must be taken into account.

(b) The gradient of the net flight path must be positive at least 1 000 ft. above all terrain and obstructions along the route within 9.3 km (5 nm) on either side of the intended track.

(c) The net flight path must permit the aeroplane to continue flight from the cruising altitude to an aerodrome where a landing can be made in accordance with BCAR-OPS 1.515 or 1.520, as appropriate, the net flight path clearing vertically, by at least 2 000 ft., all terrain and obstructions along the route within 9.3 km (5 nm) on either side of the intended track in accordance with subparagraphs (1) to (4) below:

(1) The engine is assumed to fail at the most critical point along the route;

(2) Account is taken of the effects of winds on the flight path;

(3) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used; and

(4) The aerodrome where the aeroplane is assumed to land after engine failure must meet the following criteria:

(i) The performance requirements at the expected landing weight are met; and

(ii) Weather reports or forecasts, or any combination thereof, and field condition reports indicate that a safe landing can be accomplished at the estimated time of landing.

(d) When showing compliance with BCAR-OPS 1 500, The Operator must increase the width margins of subparagraphs (b) and (c) above to 18.5 km (10 nm) if the navigational accuracy does not meet the 95% containment level.

BCAR-OPS 1.505 En route Aeroplanes with three or more engines, two engines inoperative

(a) The Operator shall ensure that at no point along the intended track will an aeroplane having three or more engines be more than 90 minutes, at the all-engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing weight are met unless it complies with subparagraphs (b) to (f) below.

(b) The two engines inoperative en-route net flight path data must permit the aeroplane to continue the flight, in the expected meteorological conditions, from the point where two engines are assumed to fail simultaneously, to an aerodrome at which it is possible to land and come to a complete stop when using the prescribed procedure for a landing with two engines inoperative. The net flight path must clear vertically, by at least 2 000 ft. all terrain and obstructions along the route within 9.3 km (5 nm) on either side of the intended track. At altitudes and in meteorological conditions requiring ice protection systems to be operable, the effect of their use on the net flight path data must be take into account. If the navigational accuracy does not meet the 95% containment level, The Operator must increase the width margin given above to 18.5 km (10 nm).

(c) The two engines are assumed to fail at the most critical point of that portion of the route where the aeroplane is more than 90 minutes, at all engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing weight are met.

(d) The net flight path must have a positive gradient at 1500 ft. above the aerodrome where the landing is assumed to be made after the failure of two engines.

(e) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.

(f) The expected weight of the aeroplane at the point where the two engines are assumed to fail must not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at least 1 500 ft. directly over the landing area and thereafter to fly level for 15 minutes.

BCAR-OPS 1.510 Landing Destination and alternate aerodromes

(See AMC OPS 1.510(b) and (c))
(See AMC OPS 1.510 and 1.515)

The Operator shall ensure that the landing weight of the aeroplane determined in accordance with BCAR-OPS 1.475(a) does not exceed the maximum landing weight specified for the altitude and the ambient temperature expected for the estimated time of landing at the destination and alternate aerodrome.

(a) The operator shall ensure that the aeroplane is able to land at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, with assurance that it can come to a stop or, for a seaplane, to a

satisfactorily low speed, within the landing distance available. Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

(b) For instrument approaches with a missed approach gradient greater than 2.5% The Operator shall verify that the expected landing weight of the aeroplane allows a missed approach with a climb gradient equal to or greater than the applicable missed approach gradient in the one-engine inoperative missed approach configuration and speed. The use of an alternative method must be approved by the BDCA (See AMC OPS 1.510 (b) and (c)).

(c) For instrument approaches with decision heights below 200 ft., The Operator must verify that the expected landing weight of the aeroplane allows a missed approach gradient of climb, with the critical engine failed and with the speed and configuration used for go-around of at least 2.5%, or the published gradient, whichever is the greater. The use of an alternative method must be approved by the BDCA (See AMC OPS 1.510 (b) and (c)).

BCAR-OPS 1.515 Landing Dry runways

(See AMC OPS 1.515(c))
(See AMC OPS 1.510 and 1.515)

(a) The Operator shall ensure that the landing weight of the aeroplane determined in accordance with BCAR-OPS 1.475(a) for the estimated time of landing at the destination aerodrome and at any alternate aerodrome allows a full stop landing from 50 ft. above the threshold:

(1) For turbo-jet powered aeroplanes, within 60% of the landing distance available; or

(2) For turbo-propeller powered aeroplanes, within 70% of the landing distance available;

(3) For Steep Approach procedures the BDCA may approve the use of landing distance Data factored in accordance with subparagraphs (a)(1) and (a)(2) above as appropriate, based on a screen height of less than 50 ft., but not less than 35 ft. (See Appendix 1 to BCAR-OPS 1.515(a) (3).

(4) When showing compliance with subparagraphs (a)(1) and (a)(2) above, the BDCA may exceptionally approve, when satisfied that there is a need (see Appendix 1), the use of Short Landing Operations in accordance with Appendices 1 and 2 together with any other supplementary conditions that the BDCA considers necessary to ensure an acceptable level of safety in the particular case.

(b) When showing compliance with subparagraph (a) above, The Operator must take account of the following:

(1) The altitude at the aerodrome;

(2) Not more than 50% of the headwind component or not less than 150% of the tailwind component; and

(3) The runway slope in the direction of landing if greater than +/-2%.

(c) When showing compliance with subparagraph(a) above, it must be assumed that:

(1) The aeroplane will land on the most favourable runway, in still air; and

(2) The aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction and the ground handling characteristics of the aeroplane, and considering other conditions such as landing aids and terrain (See AMC OPS 1.515 (c)).

(d) If The Operator is unable to comply with subparagraph (c)(1) above for a destination aerodrome having a single runway where a landing depends upon a specified wind component, an aeroplane may be despatched if 2 alternate aerodromes are designated which permit full compliance with subparagraphs (a), (b) and (c). Before commencing an approach to land at the destination aerodrome the pilot in command must satisfy himself/herself that a landing can be made in full compliance with BCAR-OPS 1.510 and subparagraphs (a) and (b) above.

(e) If The Operator is unable to comply with subparagraph (c)(2) above for the destination aerodrome, the aeroplane may be despatched if an alternate aerodrome is designated which permits full compliance with subparagraphs (a), (b) and (c).

BCAR-OPS 1.520 Landing Wet and contaminated runways

(a) The Operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be wet, the landing, distance available is at least 115% of the required landing distance, determined in accordance with BCAR-OPS 1.515.

(b) The Operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be contaminated, the landing distance available must be at least the landing distance determined in accordance with subparagraph (a) above, or at least 115% of the landing distance determined in accordance with approved contaminated landing distance data or equivalent, accepted by the BDCA, whichever is greater.

(c) A landing distance on a wet runway shorter than that required by subparagraph (a) above, but not less than that required by BCAR-OPS 1.515(a) may be used if the AFM includes specific additional information about landing distances on wet runways.

(d) A landing distance on a specially prepared contaminated runway shorter than that required by subparagraph (b) above, but not less than that required by BCAR-OPS 1.515(a) may be used if the AFM includes specific additional information about landing distances on contaminated runways.

(e) When showing compliance with subparagraphs (b), (c) and (d) above, the criteria of BCAR-OPS 1.515 shall be applied accordingly except that BCAR-OPS 1.515(a) (1) and (2) shall not be applied to subparagraph (b) above.

Appendix 1 to BCAR-OPS 1.495(c) (3) Approval of increased bank angles

(a) For the use of increased bank angles requiring special approval, the following criteria shall be met:

(1) The AFM must contain approved data for the required increase of operating speed and data to allow the construction of the flight path considering the increased bank angles and speeds;

(2) Visual guidance must be available for navigation accuracy;

(3) Weather minima and wind limitations must be specified for each runway and approved by the BDCA;

(4) Training in accordance with BCAR-OPS 1.975.

Appendix 1 to BCAR-OPS 1.515(a) (3) Steep approach procedures

(a) The BDCA may approve the application of Steep Approach procedures using glideslope angles of 4-5° or more and with screen heights of less than 50 ft. but not less than 35 ft., provided that the following criteria are met:

(1) The AFM must state the maximum approved glideslope angle, any other limitations, normal, abnormal or emergency procedures for the steep approach as well as amendments to the field length data when using steep approach criteria;

(2) A suitable glidepath reference system comprising at least a visual glidepath indicating system must be available at each aerodrome at which steep approach procedures are to be conducted; and

(3) Weather minima must be specified and approved for each runway to be used with a steep approach. Consideration must be given to the following:

(i) The obstacle situation;

(ii) The type of glidepath reference and runway guidance such as visual aids, MLS, 3D–NAV, ILS, LLZ, VOR, NDB;

(iii) The minimum visual reference to be required at DH and MDA;

(iv) Available airborne equipment;

(v) Pilot qualification and special aerodrome familiarization;

(vi) AFM limitations and procedures; and

(vii) Missed approach criteria.

Appendix 1 to BCAR-OPS 1.515 (a) (4) Short landing operations

(a) For BCAR-OPS 1.515 (a) (4), the distance used for the calculation of the permitted landing weight may consist of the usable length of the declared safe area plus the declared landing distance available. The BDCA may approve such operations in accordance with the following criteria:

(1) *Demonstration of the need for Short Landing Operations*. There must be a clear public interest and operational necessity for the operation, either due to the remoteness of the airport or to physical limitations relating to extending the runway.

(2) *Aeroplane and operational criteria*.

(i) Short landing operation will only be approved for aeroplanes where the vertical distance between the path of the pilot's eye and the path of the lowest part of the wheels, with the aeroplane established on the normal glide path, does not exceed 3 metres.

(ii) When establishing aerodrome operating minima, the visibility/RVR must not be less than 1.5 km. In addition, wind limitations must be specified in the Operation Manual, and

(iii) Minimum pilot experience, training requirements and special aerodrome familiarisation must be specified for such operations in the Operations Manual.

(3) It is assumed that the crossing height over the beginning of the usable length of the declared safe area is 50 ft.

(4) Additional criteria. The BDCA may impose such additional conditions as are deemed necessary for a safe operation take into account the aeroplane type characteristics, orographic characteristics in the approach area, available approach aids and missed approach/baulked landing considerations. Such additional conditions may be, for instance, the requirement for VASI/PAPI – type visual slope indicator system.

Appendix 2 to BCAR-OPS 1.515 (a) (4) Airfield criteria for short landing operations

(a) The use of the safe area must be approved by the airport authority.

(b) The useable length of the declared safe area under the provisions of BCAR-OPS 1.515 (a) (4) and this Appendix, must not exceed 90 metres.

(c) The width of the declared safe area shall not be less than twice the runway width or twice the wingspan, whichever is the greater, centred on the extended runway centre line.

(d) The declared safe area must be clear of obstructions or depressions which would endanger an aeroplane undershooting the runway and no mobile object shall be permitted on the declared safety area while the runway is being used for short landing operations.

(e) The slope of the declared safe area must not exceed 5% upward nor 2% downward in the direction of landing.

(f) For this operation, the bearing strength requirement of BCAR-OPS 1.480(a) (5) need not apply to the declared safe area.

SUBPART H PERFORMANCE CLASS B

BCAR-OPS 1.525 General

(a) The Operator shall not operate a single engine aeroplane:

(1) At night; or

(2) In Instrument Meteorological Conditions, excepting aeroplanes equipped with turbine engine and when it satisfies the requirements established by the BDCA. (See BCAR OPS 1.240(a)(6))

(b) The Operator shall treat two-engine aeroplanes which do not meet the climb requirements of Appendix 1 to BCAR-OPS 1.525(b) as single-engine aeroplanes.

BCAR-OPS 1.527 Additional requirements for operations of single-engine turbine-powered aeroplanes at night and/or in instrument meteorological conditions (IMC)

(See Appendix 1 to BCAR-OPS 1.527)
(See AMC OPS 1.527)

(a) In approving operations by single-engine turbine-powered aeroplanes at night and/or in IMC, the BDCA shall ensure that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety intended by the provisions of BCARs is provided by:

(1) the reliability of the turbine engine;

(2) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programmes; and

(3) equipment and other requirements provided in accordance with Subpart K and L.

(b) All single-engine turbine-powered aeroplanes operated at night and/or in IMC shall have an engine trend monitoring system, and those aeroplanes for which the individual certificate of airworthiness was first issued on or after 1 January 2005 shall have an automatic trend monitoring system.

BCAR-OPS 1.530 Take-off

(See AMC OPS 1.530(c) (4))
(See AMC OPS 1.530(c) (4))
(See AMC OPS 1.530(c) (5)

(a) The Operator shall ensure that the take-off weight does not exceed the maximum take-off weight specified in the AFM for the pressure altitude and the ambient temperature at the aerodrome at which the take-off is to be made.

(b) The Operator shall ensure that the unfactored take-off distance, as specified in the AFM does not exceed:
(1) When multiplied by a factor of 1.25, the take-off run available; or

(2) When stop way and/or clearway is available, the following*:*

(i) The take-off run available;

(ii) When multiplied by a factor of 1.15, the take-off distance available; and

(iii) When multiplied by a factor of 1.3, the accelerate-stop distance available.

(c) When showing compliance with subparagraph (b) above, The Operator shall take account of the following:

(1) The weight of the aeroplane at the commencement of the take-off run;

(2) The pressure altitude at the aerodrome;

(3) The ambient temperature at the aerodrome;

(4) The runway surface condition and the type of runway surface (See AMC OPS 1.530(c) (4)(AMC) and AMC OPS 1.530 (c) (4)(AMC));

(5) The runway slope in the direction of take-off (See AMC OPS 1.530(C) (5)); and

(6) Not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

BCAR-OPS 1.535 Take-off obstacle clearance – Multi-engine aeroplanes

(See AMC OPS 1.535)
(See AMC OPS 1.535(a))
(See AMC OPS 1.535(a) ()

(a) The Operator shall ensure that the take-off flight path of aeroplanes with two or more engines, determined in accordance with this subparagraph, clears all obstacles by a vertical margin of at least 50 ft., or by a horizontal distance of at least 90 m plus 0.125 x D, where D is the horizontal distance travelled by the aeroplane from the end of the take-off distance available or the end of the take-off distance if a turn is scheduled before the end of the take-off distance available except as provided in subparagraphs (b) and (c) below. For

aeroplanes with a wingspan of less than 60 m, a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m, plus 0.125 x D may be used. When showing compliance with this subparagraph (See AMC OPS 1.535 (a)(AMC) and AMC OPS 1.535(a)(AMC)) it must be assumed that:

(1) The take-off flight path begins at a height of 50 ft. above the surface at the end of the take-off distance required by BCAR-OPS 1.530(b) and ends at a height of 1500 ft. above the surface;

(2) The aeroplane is not banked before the aeroplane has reached a height of 50 ft. above the surface, and that thereafter the angle of bank does not exceed 15°,

(3) Failure of the critical engine occurs at the point on the all-engine take-off flight path where visual reference to avoid obstacles is expected to be lost;

(4) The gradient of the take-off flight path from 50 ft. to the assumed engine failure height is equal to the average all-engine gradient during the climb and transition to the enroute configuration, multiplied by a factor of 0.77; and

(5) The gradient of the take-off flight path from the height reached following in accordance with subparagraph (4) above to the end of the take-off flight path is equal to the one engine inoperative en-route climb gradient shown in the AFM.

(b) When showing compliance with subparagraph (a) above for those cases where the intended flight path does not require track changes of more than 15°, The Operator need not consider those obstacles which have a lateral distance greater than:

(1) 300 m, if the flight is conducted under conditions allowing visual course guidance navigation, or if navigational aids are available enabling the pilot to maintain the intended flight path with the same accuracy (See Appendix 1 to BCAR-OPS 1.535(b)(1) and (c)(1)); or

(2) 600 m, for flights under all other conditions.

(c) When showing compliance with subparagraph (a) above for those cases where the intended flight path requires track changes of more than 15°, The Operator need not consider those obstacles which have a lateral distance greater than:

(1) 600 m for flights under conditions allowing visual course guidance navigation (See Appendix 1 to BCAR-OPS 1.535(b) (1) and (c) (1));

(2) 900 m for flights under all other conditions.

(d) When showing compliance with subparagraphs (a), (b), and (c) above, The Operator must take account of the following:

(1) The weight of the aeroplane at the commencement of the take-off run;

(2) The pressure altitude at the aerodrome;

(3) The ambient temperature at the aerodrome; and

(4) Not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

BCAR-OPS 1.540 En route – Multi-engine aeroplanes

(See AMC OPS 1.540)

(a) The Operator shall ensure that the aeroplane, in the meteorological conditions expected for the flight, and in the event of the failure of one engine, with the remaining engines operating within the maximum continuous power conditions specified, is capable of continuing flight at or above the relevant minimum altitudes for safe flight stated in the Operations Manual to a point 1000 ft. above an aerodrome at which the performance requirements can be met.

(b) When showing compliance with subparagraph (a) above:

(1) The aeroplane must not be assumed to be flying at an altitude exceeding that at which the rate of climb equals 300 ft. per minute with all engines operating within the maximum continuous power conditions specified; and

(2) The assumed en-route gradient with one engine inoperative shall be the gross gradient of descent or climb, as appropriate, respectively increased by a gradient of 0.5%, or decreased by a gradient of 0.5%.

BCAR-OPS 1.542 En-route–single-engine aeroplanes

(See AMC OPS 1.542)
(See AMC OPS 1.542(a))

(a) The Operator shall ensure that the aeroplane, in the meteorological conditions expected for the flight, and in the event of engine failure, can reach a place at which a safe forced landing can be made. For landplanes, a place on land is required, unless otherwise approved by the BDCA. (See AMC OPS 1.542(a)).

(b) When showing compliance with subparagraph (a) above:

(1) The aeroplane must not be assumed to be flying, with the engine operating within the maximum continuous power conditions specified, at an altitude exceeding that at which the rate of climb equals 300 ft. per minute; and

(2) The assumed en-route gradient shall be the gross gradient of descent increased by a gradient of 0.5%.

BCAR-OPS 1.545 Landing – Destination and alternate aerodromes

(See AMC OPS 1.545 and 1.550)

(a) The Operator shall ensure that the landing weight of the aeroplane determined in accordance with BCAR-OPS 1.475(a) does not exceed the maximum landing weight specified for the altitude and the ambient temperature expected for the estimated time of landing at the destination and alternate aerodrome.

(b) The aeroplane shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available. Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

BCAR-OPS 1.550 Landing – Dry runway

(See AMC OPS 1.550(b) (3))
(See AMC OPS 1.550(b) (4))
(See AMC OPS 1.550(c))
(See AMC OPS 1.545 and 1.550)

(a) The Operator shall ensure that the landing weight of the aeroplane determined in accordance with BCAR-OPS 1.475(a) for the estimated time of landing allows a full stop landing from 50 ft. above the threshold within 70% of the landing distance available at the destination aerodrome and at any alternate aerodrome:

(1) The BDCA may approve the use of landing distance data factored in accordance with this paragraph based on a screen height of less than 50 ft., but not less than 35 ft. (See Appendix 1 to BCAR-OPS 1.550(a)).

(2) The BDCA may approve Short Landing Operations in accordance with the criteria in Appendix 2 to BCAR-OPS 1.550 (a).

(b) When showing compliance with subparagraph (a) above, The Operator shall take account of the following:

(1) The altitude at the aerodrome;

(2) Not more than 50% of the headwind component or not less than 150% of the tailwind component;

(3) The runway surface condition and the type of runway surface (See AMC OPS 1.550(b) (3));

(4) The runway slope in the direction of landing (See AMC OPS 1.550(b) (4));

(c) For dispatching an aeroplane in accordance with subparagraph (a) above, it must be assumed that:

(1) The aeroplane will land on the most favourable runway, in still air; and

(2) The aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction and the ground handling characteristics of the aeroplane~~,~~ and considering other conditions such as landing aids and terrain (See AMC OPS 1.550(c)).

(d) If The Operator is unable to comply with subparagraph (c)(2) above for the destination aerodrome, the aeroplane may be despatched if an alternate aerodrome is designated which permits full compliance with subparagraphs (a), (b) and (c) above.

BCAR-OPS 1.555 Landing – Wet and contaminated runways

(See AMC OPS 1.555(a))

(a) The Operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be wet, the landing distance available is equal to or exceeds the required landing distance, determined in accordance with BCAR-OPS 1.550, multiplied by a factor of 1.15 (See AMC OPS 1.555(a)).

(b) The Operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be contaminated, the landing distance, determined by using data acceptable to the BDCA for these conditions, does not exceed the landing distance available.

(c) A landing distance on a wet runway shorter than that required by subparagraph (a) above, but not less than that required by BCAR-OPS 1.550(a), may be used if the AFM includes specific additional information about landing distances on wet runways.

Appendix 1 to BCAR-OPS 1.525(b) General Take-off and landing climb

(a) *Take-off climb*

(1) *All engines operating*

(i) The steady gradient of climb after take-off must be at least 4% with:

(A) Take-off power on each engine;

(B) The landing gear extended except that if the landing gear can be retracted in not more than 7 seconds, it may be assumed to be retracted;

(C) The wing flaps in the take-off position(s); and

(D) A climb speed not less than the greater of 1.1 V_{MC} and 1.2 V_{S1}.

(2) *One engine inoperative*

(i) The steady gradient of climb at an altitude of 400 ft. above the take-off surface must be measurably positive with:

(A) The critical engine inoperative and its propeller in the minimum drag position;

(B) The remaining engine at take-off power;

(C) The landing gear retracted;

(D) The wing flaps in the take-off position(s); and

(E) A climb speed equal to that achieved at 50 ft.

(ii) The steady gradient of climb must be not less than 0.75% at an altitude of 1500 ft. above the take-off surface with:

(A) The critical engine inoperative and its propeller in the minimum drag position;

(B) The remaining engine at not more than maximum continuous power;

(C) The landing gear retracted;

(D) The wing flaps retracted; and

(E) A climb speed not less than 1.2 V_{S1}.

(b) *Landing climb*

(1) *All engines operating*

(i) The steady gradient of climb must be at least 2.5% with:

(A) Not more than the power or thrust that is available 8 seconds after initiation of movement of the power controls from the minimum flight idle position;

(B) The landing gear extended;

(C) The wing flaps in the landing position; and

(D) A climb speed equal to V_{REF}.

(2) *One engine inoperative*

(i) The steady gradient of climb must be not less than 0.75% at an altitude of 1500 ft. above the landing surface with:

(A) The critical engine inoperative and its propeller in the minimum drag position;

(B) The remaining engine at not more than maximum continuous power;

(C) The landing gear retracted;

(D) The wing flaps retracted; and

(E) A climb speed not less than 1.2 $V_{S\,1}$

Appendix 1 to BCAR-OPS 1.527 Additional requirements for approved operations by single-engine turbine-powered aeroplanes at night and/or in instrument meteorological conditions (IMC)
(See AMC of Appendix 1.527(f))
(See BCAR OPS 1.527)

Airworthiness and operational requirements, provided in accordance with BCAR OPS 1.527, shall satisfy the following:

(a)Turbine engine reliability;

(1) Turbine engine reliability shall be shown to have a power loss rate of less than 1 per 100 000 engine hours.

(2) The operator shall be responsible for engine trend monitoring.

(3) To minimise the probability of in-flight engine failure, the engine shall be equipped with:

(i) an ignition system that activates automatically, or is capable of being operated manually, for take-off and landing, and during flight, in visible moisture;
(ii) a magnetic particle detection or equivalent system that monitors the engine, accessories gearbox, and reduction gearbox, and which includes a flight deck caution indication; and

(iii) an emergency engine power control device that permits continuing operation of the engine through a sufficient power range to safely complete the flight in the event of any reasonably probable failure of the fuel control unit.

(b) Systems and equipment

Single-engine turbine-powered aeroplanes approved to operate at night and/or in IMC shall be equipped with the following systems and equipment intended to ensure continued safe flight and to assist in achieving a safe forced landing after an engine failure, under all allowable operating conditions:

(1) two separate electrical generating systems, each one capable of supplying all probable combinations of continuous in-flight electrical loads for instruments, equipment and systems required at night and/or in IMC;

(2) a radio altimeter;

(3) an emergency electrical supply system of sufficient capacity and endurance, following loss of all generated power, to as a minimum:

(i) maintain the operation of all essential flight instruments, communication and navigation systems during a descent from the maximum certificated altitude in a glide configuration to the completion of a landing;

(ii) lower the flaps and landing gear, if applicable;

(iii) provide power to one pitot heater, which must serve an air speed indicator clearly visible to the pilot;

(iv) provide for operation of the landing lights;

(v) provide for engine restart, if applicable; and

(vi) provide for the operation of the radio altimeter;

(4) two attitude indicators, powered from independent sources;

(5) a means to provide for at least one attempt at engine restart;

(6) airborne weather radar;

(7) a certified area navigation system capable of being programmed with the positions of aerodromes and safe forced landing areas, and providing instantly available track and distance information to those locations;

(8) for passenger operations, passenger seats and mounts which meet dynamically-tested performance standards and which are fitted with a shoulder harness or a safety belt with a diagonal shoulder strap for each passenger seat;

(9) in pressurised aeroplanes, sufficient supplemental oxygen for all occupants for descent following engine failure at the maximum glide performance from the maximum certificated altitude to an altitude at which supplemental oxygen is no longer required;

(10) a landing light that is independent of the landing gear and is capable of adequately illuminating the touchdown area in a night forced landing; and

(11) an engine fire warning system.

(c) Minimum equipment list

The BDCA shall require the minimum equipment list of the operator authorised in accordance with BCAR OPS 1.030 to specify the operating equipment required for night and/or IMC operations, and for day/VMC operations.

(d) Flight manual information

The flight manual shall include limitations, procedures, approval status and other information relevant to operations by single-engine turbine-powered aeroplanes at night and/or in IMC.

(e) Event reporting

(1) All operators approved for operations by single-engine turbine-powered aeroplanes at night and/or in IMC shall report all significant failures, malfunctions, or defects to the BDCA, who in turn will notify the State of Design.

(2) The BDCA shall review the safety data and monitor the reliability information ~~so as~~ to be able to take any actions necessary to ensure that the intended safety level is achieved. The BDCA will notify major events or trends of particular concern to the appropriate Type Certificate Holder and the State of Design.

(f) Operator planning

(1) Operator route planning shall take account of all relevant information in the assessment of intended routes or areas of operations, including the following:

(i) the nature of the terrain to be overflown, including the potential for carrying out a safe forced landing in the event of an engine failure or major malfunction;

(ii) weather information, including seasonal and other adverse meteorological influences that may affect the flight; and

(iii) other criteria and limitations as specified by the BDCA.

(2) The operator shall identify aerodromes or safe forced landing areas available for use in the event of engine failure, and the position of these shall be programmed into the area navigation system (See AMC OPS of Appendix 1.527(f)).

(g) Flight crew experience, training and checking.

(1) The Operator shall submit to the BDCA for approval the minimum flight crew experience required for night/IMC operations by single-engine turbine-powered aeroplanes.

(2) The operator's flight crew training and checking shall be appropriate to night and/or IMC operations by single-engine turbine-powered aeroplanes, covering normal, abnormal, and emergency procedures and engine failure, including descent to a forced landing in night and/or in IMC conditions.

(h) Route limitations over water

(1) The operator shall meet route limitation criteria established by the BDCA for single-engine turbine-powered aeroplanes operating at night and/or in IMC on over water operations if beyond gliding distance from an area suitable for a safe forced landing/ditching having regard to the characteristics of the aeroplane, seasonal weather influences, including likely sea state and temperature, and the availability of search and rescue services.

(i) Operator certification or validation

(1) The operator shall demonstrate the ability to conduct operations by single-engine turbine-powered aeroplanes at night and/or in IMC through a certification and approval process specified by the BDCA.

Appendix 1 to BCAR-OPS 1.535(b) (1) and (c) (1) Take-off flight path Visual course guidance navigation

To allow visual course guidance navigation, The Operator must ensure that the weather conditions prevailing at the time of operation including ceiling and visibility are such that the obstacle and/or ground reference points can be seen and identified. The Operations Manual must specify, for the aerodrome(s) concerned, the minimum weather conditions, which enable the flight crew to continuously determine and maintain the correct flight path with respect to ground reference points, ~~so as~~ to provide a safe clearance with respect to obstructions and terrain as follows:

(a) The procedure must be well defined with respect to ground reference points so that the track to be flown can be analysed for obstacle clearance requirements;

(b) The procedure must be within the capabilities of the aeroplane with respect to forward speed, bank angle and wind effects;

(c) A written and/or pictorial description of the procedure must be provided for crew use; and

(d) The limiting environmental conditions must be specified (e.g., wind, cloud, visibility, day/night, ambient lighting, obstruction lighting).

Appendix 1 to BCAR-OPS 1.550(a) Steep approach procedures

(a) The BDCA may approve the application of Steep Approach procedures using glideslope angles of 4.5° or more, and with screen heights of less than 50 ft. but not less than 35 ft., provided that the following criteria are met:

(1) The AFM must state the maximum approved glideslope angle, any other limitations, normal, abnormal or emergency procedures for the steep approach as well as amendments to the field length data when using steep approach criteria;

(2) A suitable glide path reference system, comprising at least a visual glidepath indicating system, must be available at each aerodrome at which steep approach procedures are to be conducted; and

(3) Weather minima must be specified and approved for each runway to be used with a steep approach. Consideration must be given to the following:

(i) The obstacle situation;

(ii) The type of glide path reference and runway guidance such as visual aids, MLS, 3D–NAV, ILS, LLZ, VOR, NDB;

(iii) The minimum visual reference to be required at DH and MDA;

(iv) Available airborne equipment;

(v) Pilot qualification and special aerodrome familiarization;

(vi) Aeroplane Flight Manual limitations and procedures; and

(vii) Missed approach criteria.

Appendix 2 to BCAR-OPS 1.550 (a) Short landing operations

(a) For BCAR-OPS 1.550 (a) (2) the distance used for the calculation of the permitted landing weight may consist of the usable length of the declared safe area plus the declared landing distance available. The BDCA may approve such operations in accordance with the following criteria:

(1) The use of the declared safe area must be approved by the aerodrome authority;

(2) The declared safe area must be clear of obstructions or depressions which would endanger an aeroplane undershooting the runway, and no mobile object shall be permitted on the declared safe area while the runway is being used for short landing operations;

(3) The slope of the declared safe area must not exceed 5% upward slope nor 2% downward slope in the direction of landing:

(4) The useable length of the declared safe area under the provisions of this Appendix shall not exceed 90 metres;

(5) The width of the declared safe area shall not be less than twice the runway width, centred on the extended runway centreline;

(6) It is assumed that the crossing height over the beginning of the usable length of the declared safe area shall not be less than 50ft;

(7) For the purpose of this operation, the bearing strength requirement of BCAR-OPS 1.480(a) (5) need not apply to the declared safe area;

(8) Weather minima must be specified and approved for each runway to be used and shall not be less than the greater of VFR or non-precision approach minima;

(9) Pilot requirements must be specified (See BCAR-OPS 1.975(a));

The BDCA may impose such additional conditions as are necessary for safe operation taking into account the aeroplane type characteristics, approach aids and missed approach/baulked landing considerations.

SUBPART I – PERFORMANCE CLASS C

BCAR-OPS 1.560 General

The Operator shall ensure that, for determining compliance with the requirements of this Subpart, the approved performance data in the AFM is supplemented, as necessary, with other data acceptable to the BDCA if the approved performance data in the AFM is insufficient.

BCAR-OPS 1.565 Take-off

(See AMC OPS 1.565(d) (3))
(See AMC OPS 1.565(d) (4))
(See AMC OPS 1.565(d) (6))

(a) The Operator shall ensure that the take-off weight does not exceed the maximum take-off weight specified in the AFM for the pressure altitude and the ambient temperature at the aerodrome at which the take-off is to be made.

(b) The Operator shall ensure that, for aeroplanes which have take-off field length data contained in their AFM that do not include engine failure accountability, the distance from the start of the take-off roll required by the aeroplane to reach a height of 50 ft. above the surface with all engines operating within the maximum take-off power conditions specified, when multiplied by a factor of either:

(1) 1.33 for aeroplanes having two engines;

(2) 1.25 for aeroplanes having three engines;

(3) 1.18 for aeroplanes having four engines;

does not exceed the take-off run available at the aerodrome at which the take-off is to be made.

(c) The Operator shall ensure that, for aeroplanes which have take-off field length data contained in their AFM which accounts for engine failure, the following requirements are met in accordance with the specifications in the AFM:

(1) The accelerate-stop distance must not exceed the accelerate-stop distance available;

(2) The take-off distance must not exceed the take-off distance available, with a clearway distance not exceeding half of the take-off run available;

(3) The take-off run must not exceed the take-off run available;

(4) Compliance with this paragraph must be shown using a single value of V_1 for the rejected and continued take-off; and

(5) On a wet or contaminated runway, the take-off weight must not exceed that permitted for a take-off on a dry runway under the same conditions.

(d) When showing compliance with subparagraphs (b) and (c) above, The Operator must take account of the following:

(1) The pressure altitude at the aerodrome;

(2) The ambient temperature at the aerodrome;

(3) The runway surface condition and the type of runway surface (See AMC OPS 1.565(d) (3));

(4) The runway slope in the direction of take-off (See AMC OPS 1.565(d) (4));

(5) Not more that 50% of the reported headwind component or not less than 150% of the reported tailwind component; and

(6) The loss, if any, of runway length due to alignment of the aeroplane prior to take-off (AMC OPS 1.565(d) (6)).

BCAR-OPS 1.570 Take-off obstacle clearance

(See AMC OPS 1.570(d)(e) (1) and (f) (1))

(a) The Operator shall ensure that the take-off flight path with one engine inoperative clears all obstacles by a vertical distance of at least 50 ft. plus 0.01 x D, or by a horizontal distance of at least 90 m plus 0.125 x D, where D is the horizontal distance, the aeroplane has travelled from the end of the take-off distance available. For aeroplanes with a wingspan of less than 60 m a horizontal obstacle clearance of half the aeroplane wingspan plus 60 m, plus 0.125 x D may be used.

(b) The take-off flight path must begin at a height of 50 ft. above the surface at the end of the take-off distance required by BCAR-OPS 1.565(b) or (c) as applicable, and end at a height of 1 500 ft. above the surface.

(c) When showing compliance with subparagraph (a) above, The Operator must take account of the following:

(1) The weight of the aeroplane at the commencement of the take-off run;

(2) The pressure altitude at the aerodrome;

(3) The ambient temperature at the aerodrome; and

(4) Not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

(5) The accuracy of obstacle data provided by the States of operation.

(d) When showing compliance with subparagraph (a) above, track changes shall not be allowed up to that point of the take-off flight path where a height of 50 ft. above the surface has been achieved. Thereafter, up to a height of 400 ft. it is assumed that the aeroplane is banked by no more than 15°. Above 400 ft. height bank angles greater than 15°, but not more than 25° may be scheduled. Adequate allowance must be made for the effect of bank angle on operating speeds and flight path including the distance increments resulting from increased operating speeds (See AMC OPS 1.570(d)).

(e) When showing compliance with subparagraph (a) above for those cases which do not require track changes of more than 15°, The Operator need not consider those obstacles which have a lateral distance greater than:

(1) 300 m, if the pilot can maintain the required navigational accuracy through the obstacle accountability area (See AMC OPS 1.570((e) (1) and (f) (1)); or

(2) 600 m, for flights under all other conditions.

(f) When showing compliance with subparagraph (a) above for those cases which do require track changes of more than 15°, The Operator need not consider those obstacles which have a lateral distance greater than:

(1) 600 m, if the pilot can maintain the required navigational accuracy through the obstacle accountability area (See AMC OPS 1.570((e) (1) and (f) (1)); or

(2) 900 m for flights under all other conditions.

(g) The Operator shall establish contingency procedures to satisfy the requirements of BCAR-OPS 1.570 and to provide a safe route, avoiding obstacles, to enable the aeroplane to either comply with the enroute requirements of BCAR-OPS 1.570 or land at either the aerodrome of departure or at a take-off alternate aerodrome.

BCAR-OPS 1.575 En-route All engines operating.

(a) The Operator shall ensure that the aeroplane will, in the meteorological conditions expected for the flight, at any point on its route or on any planned diversion therefrom, be capable of

a rate of climb of at least 300 ft. per minute with all engines operating within the maximum continuous power conditions specified at:

(1) The minimum altitudes for safe flight on each stage of the route to be flown or of any planned diversion therefrom specified in, or calculated from the information contained in, the Operations Manual relating to the aeroplane; and

(2) The minimum altitudes necessary for compliance with the conditions prescribed in BCAR-OPS 1.580 and 1.585 as appropriate.

BCAR-OPS 1.580 En-Route One engine inoperative

(See AMC OPS 1.580)

(a) The Operator shall ensure that the aeroplane will, in the meteorological conditions expected for the flight, in the event of any one engine becoming inoperative at any point on its route or ~~on~~ any planned diversion therefrom and with the other engine or engines operating within the maximum continuous power conditions specified, be capable of continuing the flight from the cruising altitude to an aerodrome where a landing can be made following BCAR-OPS 1.595 or BCAR-OPS 1.600, as appropriate, clearing obstacles within 9.3 km (5 nm) either side of the intended track by a vertical interval of at least:

(1) 1000 ft. when the rate of climb is zero or greater; or

(2) 2000 ft. when the rate of climb is zero or greater.

(b) The flight path shall have a positive slope at an altitude of 450 m (1 500 ft.) above the aerodrome where the landing is assumed to be made after the failure of one engine.

(c) For the purpose of this subparagraph, the available rate of climb of the aeroplane shall be taken to be 150 ft. per minute less than the gross rate of climb specified.

(d) When showing compliance with this paragraph, The Operator must increase the width margins of subparagraph (a) above to 18.5 km (10 nm) if the navigational accuracy does not meet the 95% containment level.

(e) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves if a safe procedure is used.

BCAR-OPS 1.585 En route Aeroplanes with three or more engines. Two engines inoperative

(a) The Operator shall ensure that, at no point along the intended track, will an aeroplane having three or more engines be more than 90 minutes at the all-engine long range

cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing weight are met unless it complies with subparagraphs (b) to (e) below.

(b) The two-engines inoperative flight path shown must permit the aeroplane to continue the flight, in the expected meteorological conditions, clearing all obstacles within 9.3 km (5 nm) either side of the intended track by a vertical interval of at least 2000 ft., to an aerodrome at which the performance requirements applicable at the expected landing weight are met.

(c) The two engines are assumed to fail at the most critical point of that portion of the route where the aeroplane is more than 90 minutes, at all engines long range cruising speed at standard temperature in still air, away from an aerodrome at which the performance requirements applicable at the expected landing weight are met.

(d) The expected weight of the aeroplane at the point where the two engines are assumed to fail must not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at an altitude of a least 450 m (1 500 ft.) directly over the landing area and thereafter to fly level for 15 minutes.

(e) For the purpose of this subparagraph, the available rate of climb of the aeroplane shall be taken to be 150 ft. per minute less than that specified.

(f) When showing compliance with this paragraph, The Operator must increase the width margins of subparagraph (a) above to 18.5 km (10 nm) if the navigational accuracy does not meet the 95% containment level.

(g) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves if a safe procedure is used.

BCAR-OPS 1.590 Landing Destination and alternate aerodromes

(See AMC OPS 1.590 and 1.595)

(a) The Operator shall ensure that the landing weight of the aeroplane determined in accordance with BCAR-OPS 1.475(a) does not exceed the maximum landing weight specified in the AFM for the altitude and, if accounted for in the AFM, the ambient temperature expected for the estimated time of landing at the destination and alternate aerodromes.

(b) The aeroplane shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available. Allowance shall be made for expected variations in the

approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

BCAR-OPS 1.595 Landing Dry runway

(See AMC OPS 1.595(b) (3))
(See AMC OPS 1.595(b) (4))
(See AMC OPS 1.595(c))
(See AMC OPS 1.590 and 1.595)

(a) The Operator shall ensure that the landing weight of the aeroplane determined in accordance with BCAR-OPS 1.475(a) for the estimated time of landing allows a full stop landing from 50 ft. above the threshold within 70% of the landing distance available at the destination and any alternate aerodrome.

(b) When showing compliance with subparagraph (a) above, The Operator must take account of the following:

(1) The altitude at the aerodrome;

(2) Not more than 50% of the headwind component or not less than 150% of the tailwind component;

(3) The type of runway surface (See AMC OPS 1.595(b) (3)), and

(4) The slope of the runway in the direction of landing (See AMC OPS 1.595(b) (4)).

(c) For dispatching an aeroplane in accordance with subparagraph (a) above it must be assumed that:

(1) The aeroplane will land on the most favourable runway in still air; and

(2) The aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction and the ground handling characteristics of the aeroplane, and considering other conditions such as landing aids and terrain (See AMC OPS 1.595(c)).

(d) If The Operator is unable to comply with subparagraph (c)(2) above for the destination aerodrome, the aeroplane may be despatched if an alternate aerodrome is designated which permits full compliance with subparagraphs (a), (b) and (c).

BCAR-OPS 1.600 Landing Wet and contaminated runways

(a) The Operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be wet, the landing distance available is equal to or exceeds the required landing distance, determined in accordance with BCAR-OPS 1.595, multiplied by a factor of 1.15.

(b) The Operator shall ensure that when the appropriate weather reports or forecasts, or a combination thereof, indicate that the runway at the estimated time of arrival may be contaminated, the landing distance determined by using data acceptable to the BDCA for these conditions, does not exceed the landing distance available.

SUBPART J WEIGHT AND BALANCE

BCAR-OPS 1.605 General

(See AMC OPS 1.605)
(See AMC OPS 1.605(j))
(See Appendix 1 to BCAR-OPS 1.605)

(a) Mass limitations

(1) The mass of the aeroplane at the start of take-off shall not exceed the mass at which BCAR OPS 1.605(b) is complied with, or the mass at which BCAR OPS 1.605(c), (d) and (e) are complied with, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is envisaged in applying BCAR OPS 1.605(c) and (d), and in respect of alternate aerodromes, as provided in BCAR OPS 1.605(a)(3) and 1.605(e).

(2) In no case shall the mass at the start of take-off exceed the maximum take-off mass specified in the flight manual for the pressure-altitude appropriate to the elevation of the aerodrome, and, if used as a parameter to determine the maximum take-off mass, any other local atmospheric condition.

(3) In no case shall the estimated mass for the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, exceed the maximum landing mass specified in the flight manual for the pressure-altitude appropriate to the elevation of those aerodromes, and if used as a parameter to determine the maximum landing mass, any other local atmospheric condition.

(4) In no case shall the mass at the start of take-off, or at the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, exceed the relevant maximum masses at which compliance has been demonstrated with the applicable noise certification Standards in Annex 16, Volume I, unless otherwise authorised in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.

(b) *Take-off.* The aeroplane shall be able, in the event of a critical engine failing, or for other reasons, at any point in the take-off, either to discontinue the take-off and stop within the accelerate-stop distance available, or to continue the take-off and clear all obstacles along the flight path by an adequate vertical or horizontal distance until the aeroplane is in a position to comply with BCAR OPS 1.605(c). When determining the resulting take-off obstacle accountability area, the flight operating conditions, such as the crosswind component and navigation accuracy, must be taken into account. (See AMC OPS 1.605(b)).

(1) In determining the length of the runway available, account shall be taken of the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

(c) *En route — one engine inoperativ*e. The aeroplane shall be able, in the event of the critical engine becoming inoperative at any point along the route or planned diversions therefrom, to continue the flight to an aerodrome at which BCAR OPS 1.605(e) can be met, without flying below the minimum flight altitude at any point.

(d) *En route — two engines inoperative.* In the case of aeroplanes having three or more engines, on any part of a route where the location of en-route alternate aerodromes and the total duration of the flight are such that the probability of a second engine becoming inoperative must be allowed for if the general level of safety implied by the standards of this section is to be maintained, the aeroplane shall be able, in the event of any two engines becoming inoperative, to continue the flight to an en-route alternate aerodrome and land.

(e) *Landing*. The aeroplane shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available. Allowance shall be made for expected variations in the approach and landing techniques if such allowance has not been made in the scheduling of performance data.

(f) The operator shall ensure that during any phase of operation, the loading, weight, and centre of gravity of the aeroplane comply with the limitations specified in the approved Aeroplane Flight Manual, or the Operations Manual if more restrictive.

(g) The Operator must establish the mass and the centre of gravity of any aeroplane by actual weighing prior to initial entry into service and thereafter at intervals of 4 years if individual aeroplane masses are used and 9 years if fleet masses are used. The accumulated effects of modifications and repairs on the weight and balance must be accounted for and properly documented. Furthermore, aeroplanes must be reweighed if the effect of modifications on the weight and balance is not accurately known.

(h) The operator must determine the weight of all operating items and crew members included in the aeroplane dry operating mass by weighing or by using standard masses. The influence of their position on the aeroplane centre of gravity must be determined.

(i) The operator must establish the weight of the traffic load, including any ballast, by actual weighing or determine the mass of the traffic load in accordance with standard passenger and baggage weights as specified in BCAR–OPS 1.620.

(j) The operator must determine the weight of the fuel load by using the actual density or, if not known, the density calculated in accordance with a method specified in the Operations Manual. (See AMC OPS 1.605(j)).

BCAR-OPS 1.607 Terminology

(a) Dry Operating Weight. The total weight of the aircraft ready for a specific type of operation, excluding all usable fuel and traffic load. This weight includes items such as:

(1) Crew and crew baggage;

(2) Catering and portable passenger service equipment;

(3) Drinking water and chemical liquids from toilets.

(b) Maximum Zero Fuel Weight. The maximum allowable weight of an aircraft with unusable fuel. The weight of fuel contained in specific tanks must be included in the zero fuel weight when explicitly mentioned in the AFM limitations.

(c) Maximum Structural Landing Weight. The maximum total aircraft weight allowed on landing under normal conditions.

(d) Maximum Structural Take-Off Weight. The maximum total aircraft weight allowed at the start of the take-off run.

(e) Passenger classification.

(1) They are defined as adults, male and female, persons 12 years of age or older.

(2) Children are defined as persons aged between 2 and 12 years.

(3) Infants are defined as persons under 2 years of age.

(f) Traffic Load. The total weight of passengers, baggage, and cargo, including any non-commercial cargo.

BCAR-OPS 1.610 Loading, weight, and balance

The Operator shall specify, in the Operations Manual, the principles and methods involved in the loading and in the weight and balance system that meet the requirements of BCAR-OPS 1.605. This system must cover all types of intended operations.

BCAR-OPS 1.615 Weight values for crew

(a) The Operator shall use the following weight values to determine the dry operating weight:

(1) Actual weight including any crew baggage; or

(2) Standard weight, including hand baggage, of 85 kg for flight crew members and 75 kg for cabin crew members; or

(3) Other standard weight acceptable to the BDCA.

(b) The Operator must correct the dry operating weight to account for any additional baggage. The position of this additional baggage must be accounted for when establishing the centre of gravity of the aeroplane.

BCAR-OPS 1.620 Weight values for passengers and baggage

(See AMC OPS 1.620(a))
(See AMC OPS 1.620(d) (2))
(See AMC OPS 1.620(g))
(See AMC OPS 1.620(h) e (i))

(a) The Operator shall compute the weight of passengers and checked baggage using both the actual weighed weight of each person and the actual weighed weight of baggage or the standard weight values specified in **Tables 1 to 3** below except where the number of passenger seats available is less than 10. In such cases passenger weight may be established by use of a verbal statement by or on behalf of each passenger and adding to it a predetermined constant to account for hand baggage and clothing (See AMC OPS 1.620(a)). The procedure specifying when to select actual or standard weight and the procedure to be followed when using verbal statements must be included in the Operations Manual.

(b) If determining the actual weight by weighing, The Operator must ensure that passengers' personal belongings and hand baggage are included. Such weighing must be conducted immediately prior to boarding and at an adjacent location.

(c) If determining the weight of passengers using standard weight values, the standard weight values in **Tables 1** and **2** below must be used. The standard weight includes hand baggage and the weight of any infant below 2 years of age carried by an adult on one passenger seat. Infants occupying separate passenger seats must be considered as children for the purpose of this subparagraph.

(d) *Weight values for passengers – 20 passenger seats or more*

(1) Where the total number of passenger seats available on an aeroplane is 20 or more, the standard weight of male and female in **Table 1** are applicable. As an alternative, in cases where the total number of passenger seats available is 30 or more, the 'All Adult' weight values in **Table 1** are applicable.

(2) For **Table 1**, holiday charter means a charter flight solely intended as an element of a holiday travel package. The holiday charter weight values apply provided that not more than 5% of passenger seats installed in the aeroplane are used for the non-revenue carriage of certain categories of passengers (See AMC-OPS 1.620(d) (2)).

Table 1

Passenger seats:	**20 and more**		**30 and more**
	Male	**Female**	**All adult**
All flights excepting holiday charters	88 kg	70 kg	84 kg
Holiday charter	83 kg	69 kg	76 kg
Children	35 Kg	35 Kg	35 Kg

(e) *Weight values for passengers – 19 passenger seats or less*

(1) Where the total number of passenger seats available on an aeroplane is 19 or less, the standard weight in **Table 2** is applicable.

(2) On flights where no hand baggage is carried in the cabin or where hand baggage is accounted for separately, 6 kg may be deducted from the above male and female weight. Articles such as an overcoat, an umbrella, a small handbag, or purse, reading material or a small camera are not considered as hand baggage for the purpose of this subparagraph.

Table 2

Passenger seats:	**1-5**	**6-9**	**10-19**
Male	104 Kg.	96 Kg.	92 Kg.
Female	86 Kg.	78 Kg.	74 Kg.
Children	35 kg	35 kg	35 kg

(f) *Weight values for baggage*

(1) Where the total number of passenger seats available on the aeroplane is 20 or more the standard weight values given in **Table 3** are applicable for each piece of checked baggage. For aeroplanes with 19 passenger seats or less, the actual weight of checked baggage, determined by weighing, must be used.

(2) For **Table 3**:

(i) Domestic flight means a flight with origin and destination within the borders of one State;

(ii) Flights within the Central American region means flights, other than domestic flights, whose origin and destination are within the area specified in **Appendix 1** to BCAR-OPS 1.620(f); and

(iii) International flights other than flights within the Central American region flights and local flights.

Table 3 - 20 or more seats

Type of flight	Baggage standard weight
Domestic	11 Kg.
International	15 Kg.

(g) If The Operator use standard weight values other than those contained in **Tables 1 to 3** above, the BDCA must be given a reason and approval granted prior. A detailed weighing survey plan must be submitted for approval; the statistical analysis method given in BCAR-OPS 1.620(g) must be applied. After verification and approval by the Authority of the results of the weighing survey, the revised standard weight values are only applicable to that operator. The revised standard weight values can only be used in circumstances consistent with those under which the survey was conducted. Where revised standard weight exceeds those in **Tables 1–3**, then such higher values must be used (See AMC OPS 1.620(g))

(h) On any flight identified as carrying a significant number of passengers whose weight including hand baggage, are expected to exceed the standard passenger weight, The Operator must determine the actual weight of such passengers by weighing or by adding an adequate weight increment (See AMC OPS 1.620 (h) and (i)).

(i) If standard weight values for checked baggage are used and a significant number of passengers check in baggage that is expected to exceed the standard baggage weight,

The Operator must determine the actual weight of such baggage by weighing or by adding an adequate weight increment (See AMC OPS 1.620(h) and (i)).

(j) The Operator shall ensure that a pilot in command is advised when a non-standard method has been used for determining the weight of the load and that this method is stated in the weight and balance documentation.

(k) Any equipment used for weighing passengers, equipment and cargo must be properly calibrated, adjusted to zero and used in accordance with the manufacturer's instructions. Each weighing scale must be calibrated annually, or within the period specified by the manufacturer, whichever is less. This calibration may be performed by the manufacturer, or a national metrology laboratory or a calibration laboratory authorised by the national accreditation body, or other international or regional accreditation body adhered to a calibration acceptance agreement with the national accreditation body.

BCAR-OPS 1.625 Weight and balance documentation

(See Appendix 1 to BCAR-OPS 1.625)

(a) The Operator shall establish weight and balance documentation prior to each flight specifying the load and its distribution balance. The weight and balance documentation must enable the pilot in command to determine that the load and its distribution is such that the weight and balance limits of the aeroplane are not exceeded. The person preparing the weight and balance documentation must be named on the document. The person supervising the loading of the aeroplane must confirm by signature that the load and its distribution are in accordance with the weight and balance documentation. This document must be acceptable to the pilot in command, his/her acceptance being indicated by countersignature or equivalent. (See also BCAR-OPS 1.1055 (a) (12)).

(b) The Operator must specify procedures for last minute changes to the load.

(c) Subject to the approval of the BDCA, The Operator may use an alternative to the procedures required by paragraphs (a) and (b) above.

Appendix 1 to BCAR-OPS 1.605 Weight and balance

General
(See BCAR-OPS 1.605)
(See AMC to Appendix 1 to BCAR OPS 1.605 (AMC))
(See AMC to Appendix 1 to BCAR OPS 1.605 (AMC))

(a) Determination of an operating empty/dry weight of an aeroplane.

(1) *Weighing of an aeroplane*

(i) New aeroplanes are normally weighed at the factory and are eligible to be placed into operation without reweighing if the weight and balance records have been adjusted for alterations or modifications to the aeroplane. Aeroplanes transferred from one BCAR OPS 1 operator with an approved weight control programme to another BCAR OPS 1 operator with an approved programme need not be weighed prior to use by the receiving operator unless more than 3 years have elapsed since the last weighing.

(ii) The individual weight and centre of gravity (CG) position of each aeroplane shall be re-established periodically. The maximum interval between two weightings must be defined by the operator and must meet the requirements of BCAR-OPS 1.605(b). In addition, the weight and the CG of each aeroplane shall be re-established either by:

(A) Weighing; or

(B) Calculation, if the operator can provide the necessary justification to prove the validity of the method of calculation chosen.

Whenever the cumulative changes to the dry operating weight exceed ± 0.5% of the maximum landing weight or the cumulative change in CG position exceeds 0.5% of the mean aerodynamic chord.

(2) *CG Fleet weight and CG position*

(i) For a fleet or group of aeroplanes of the same model and configuration, an average dry operating weight and CG position may be used as the fleet weight and CG position, provided that the dry operating weight and CG positions of the individual aeroplanes meet the tolerances specified in subparagraph (ii) below. Furthermore, the criteria specified in subparagraphs (iii), (iv) and (a)(3) below are applicable.

(ii) *Tolerances*

(A) If the dry operating weight of any aeroplane weighed, or the calculated dry operating weight of any aeroplane of a fleet, varies by more than ±0.5% of the maximum structural landing weight from the established dry operating fleet weight or the CG position varies by more than ±0.5 % of the mean aerodynamic chord from the fleet CG, that aeroplane shall be omitted from that fleet. Separate fleets may be established, each with differing fleet mean weight.

(B) In cases where the aeroplane weight is within the dry operating fleet weight tolerance but its CG position falls outside the permitted fleet tolerance, the aeroplane may still be operated under the applicable dry operating fleet weight but with an individual CG position.

(C) If an individual aeroplane has, when compared with other aeroplanes of the fleet, a physical, accurately accountable difference (e.g., galley or seat configuration) that causes exceedance of the fleet tolerances, this aeroplane may be maintained in the fleet provided that appropriate corrections are applied to the weight and/or CG position for that aeroplane.

(D) Aeroplanes for which no mean aerodynamic chord has been published must be operated with their individual weight and CG position values or must be subjected to a special study and approval.

(iii) *Use of fleet values*

(A) After the weighing of an aeroplane, or if any change occurs in the aeroplane equipment or configuration, the operator must verify that this aeroplane falls within the tolerances specified in subparagraph (2)(ii) above.

(B) Aeroplanes which have not been weighed since the last fleet weight evaluation can still be kept in a fleet operated with fleet values, provided that the individual values are revised by computation and stay within the tolerances defined in subparagraph (2)(ii) above. If these individual values no longer fall within the permitted tolerances, the operator must either determine new fleet values fulfilling the conditions of subparagraphs (2)(i) and (2)(ii) above, or operate the aeroplanes not falling within the limits with their individual values.

(C) To add an aeroplane to a fleet operated with fleet values, the operator must verify by weighing or computation that its actual values fall within the tolerances specified in subparagraph (2)(ii) above.

(D) To comply with subparagraph (2)(i) above, the fleet values must be updated at least at the end of each fleet weight evaluation.

(3) *Number of aeroplanes to be weighed to obtain fleet values*

(i) If ‘n’ is the number of aeroplanes in the fleet using fleet values, the operator must at least weigh, in the period between two fleet weight evaluations, a certain number of aeroplanes defined in the Table below:

Number of aeroplanes in the fleet	Minimum number of weightings
2 or 3	n
4 or 9	$\frac{n + 3}{2}$
10 or more	$\frac{n + 51}{10}$

(ii) In choosing the aeroplanes to be weighed, aeroplanes in the fleet which have not been weighed for the longest time shall be selected.

(iii) The interval between 2 fleet weight evaluations must not exceed 48 months.

(4) *Weighing procedure*

(i) The weighing must be accomplished either by the manufacturer or by a maintenance organisation approved by the BDCA for these purposes;

(ii) Normal precautions must be taken consistent with good practices such as:

(A) Checking for completeness of the aeroplane and equipment;

(B) Determining that fluids are properly accounted for;

(C) Ensuring that the aeroplane is clean; and

(D) Ensuring that weighing is accomplished in an enclosed building.

(iii) Any equipment used for weighing must be properly calibrated, zeroed, and used in accordance with the manufacturer's instructions. Each scale must be calibrated either by the manufacturer, by a civil department of weights and measures or by an appropriately authorised organisation within 2 years or within a time period defined by the manufacturer of the weighing equipment, whichever is less. The equipment must enable the weight of the aeroplane to be established accurately (See AMC to Appendix 1 to BCAR-OPS 1.605 section (a) (4) iii.

(b) *Special standard weight for the traffic load*. In addition to standard weight for passengers and checked baggage, The Operator can submit for approval to the BDCA standard weight for other load items

(c) *Aeroplane loading*

(1) The Operator must ensure that the loading of its aeroplanes is performed under the supervision of qualified personnel.

(2) The Operator must ensure that the loading of the freight is consistent with the data used for the calculation of the aeroplane weight and balance.

(3) The Operator must comply with additional structural limits such as the floor strength limitations, the maximum load per running metre, the maximum weight per cargo compartment, and/or the maximum seating limits.

(d) *Centre of gravity limits*

(1) *Operational CG envelope.* Unless seat allocation is applied and the effects of the number of passengers per seat row, of cargo in individual cargo compartments and of fuel in individual tanks is accounted for accurately in the balance calculation, operational margins must be applied to the certificated centre of gravity envelope. In determining the CG margins, possible deviations from the assumed load distribution must be considered. If free seating is applied, the operator must introduce procedures to ensure corrective action by flight or cabin crew if extreme longitudinal seat selection occurs. The CG margins and associated operational procedures, including assumptions regarding passenger seating, must be acceptable to the BDCA (See AMC to Appendix 1 to BCAR-OPS 1.605(d)).

(2) *In-flight centre of gravity*. - Further to subparagraph (d)(1) above, the operator must show that the procedures fully account for the extreme variation in CG travel during flight caused by passenger/crew movement and fuel consumption/transfer.

Appendix 1 to BCAR-OPS 1.620(f) Definition of the area for flights within the Central American Region

For the purposes of BCAR-OPS 1.620(f), flights within the Central American Region, other than domestic flights, are flights conducted within the area bounded by rhumb lines.

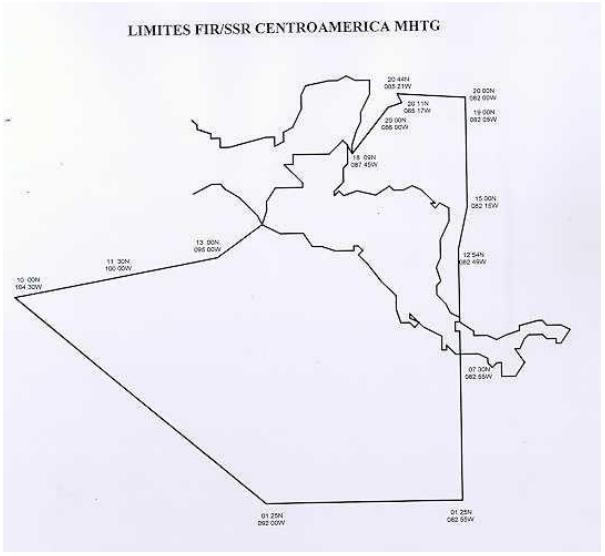


Figure 1 – Central American Region

Appendix 1 to BCAR-OPS 1.620(g) - Procedures for establishing standard weight values for passengers and baggage.
(See AMC to Appendix 1 to BCAR-OPS 1.620(g))
(See AMC to Appendix 1 to BCAR OPS 1.620(g))

(a) *Passengers*

(1) *Weight sampling method*. The average weight of passengers and their hand baggage must be determined by weighing, taking random samples. The selection of random samples must by nature and extent be representative of the passenger volume, considering the type of operation, the frequency of flights on various routes, in/outbound flights, applicable season, and seat capacity of the aeroplane.

(2) *Sample size*. The survey plan must cover the weighing of at least the greatest of:

(i) Several passengers calculated from a pilot sample, using normal statistical procedures and based on a relative confidence range (accuracy) of 1% for all adult and 2% for separate male and female average weight (the statistical procedure, complemented with a worked example for determining the minimum required sample size and the average weight, is included in AMC OPS 1.620 (g)); and

(ii) For aeroplanes:

(A) With a passenger seating capacity of 40 or more, a total of 200 passengers; or

(B) With a passenger seating capacity of less than 40, a total number of 50 x (the passenger seating capacity).

(3) *Passenger weight*. Passenger weight must include the weight of the passengers' belongings which are carried when entering the aeroplane. When taking random samples of passenger weight, infants shall be weighed together with the accompanying adult (See BCAR-OPS 1.607 (e) and BCAR-OPS 1.620 (c), (d) and (e)).

(4) *Weighing location*. The location for the weighing of passengers shall be selected as close as possible to the aeroplane, at a point where a change in the passenger weight by disposing of or by acquiring more personal belongings is unlikely to occur before the passengers aboard the aeroplane.

(5) *Weighing machine.* The weighing machine to be used for passenger weighing shall have a capacity of at least 150 kg. The weight shall be displayed at minimum graduations of 500 g. The weighing machine must be accurate to within 0.5% or 200 g whichever is the greater.

(6) *Recording of weight values*. For each flight included in the survey, the weight of the passengers, the corresponding passenger category (i.e., male/female/children) and the flight number must be recorded.

(b) *Hold baggage*. The statistical procedure for determining revised standard baggage weight values based on average baggage weight of the minimum required sample size is basically the same as for passengers and as specified in subparagraph (a)(1) (See also AMC OPS 1.620(g)). For baggage, the relative confidence range (accuracy) amounts to 1%. A minimum of 200 pieces of checked baggage must be weighed.

(c) *Determination of revised standard weight values for passengers and hold baggage.*

(1) To ensure that, in preference to the use of actual weight determined by weighing, the use of revised standard weight values for passengers and checked baggage does not adversely affect operational safety, a statistical analysis (See also AMC OPS 1.620(g)), must be carried out. Such an analysis will generate average weight values for passengers and baggage as well as other data.

(2) On aeroplanes with 20 or more passenger seats, these averages apply as revised standard male and female weight values.

(3) On smaller aeroplanes, the following increments must be added to the average passenger weight to obtain the revised standard weight values:

Number of passenger seats	Required weight increment
1-5 inclusive	16 kg
6-9 inclusive	8 kg
10-19 inclusive	4 kg

Alternatively, all adult revised standard (average) weight values may be applied on aeroplanes with 30 or more passenger seats. Revised standard (average) checked baggage weight values are applicable to aeroplanes with 20 or more passenger seats.

(4) Operators have the option to submit a detailed survey plan to the BDCA for approval and subsequently a deviation from the revised standard weight value provided this deviating value is determined by use of the procedure explained in this Appendix. Such deviations must be reviewed at intervals not exceeding 5 years (See AMC to **Appendix 1** of BCAR-OPS 1.620(g)), subparagraph (c) (4)).

(5) All adult revised standard weight values must be based on a male/female ratio of 80/20 in respect of all flights except holiday charters which are 50/50. If The Operator wishes to obtain approval for use of a different ratio on specific routes or flights, then data must be submitted to the BDCA showing that the alternative male/female ratio is conservative and covers at least 84% of the actual male/female ratios on a sample of at least 100 representative flights.

(6) The average weight values found are rounded to the nearest whole number in kg. Hold baggage weight values are rounded to the nearest 0.5 kg figure, as appropriate.

Appendix 1 to BCAR-OPS 1.625 Weight and balance documentation
(See AMC to Appendix 1 of BCAR OPS 1.625)

(a) *Weight and balance documentation*

(1) *Content*

(i) The weight and balance documentation must contain the following information:

(A) The aeroplane registration and type;

(B) The flight identification number and date;

(C) The identity of the pilot in command;

(D) The identity of the person who prepared the document;

(E) The dry operating weight and the corresponding CG of the aeroplane;

(F) The weight of the fuel at take-off and the weight of trip fuel;

(G) The weight of consumables other than fuel;

(H) The components of the load including passengers, baggage, freight and ballast;

(I) The take-off weight, landing weight and zero fuel weight;

(J) The load distribution;

(K) The applicable aeroplane CG positions; and

(L) The limiting weight and CG values;

(ii) Subject to the approval of the BDCA, The Operator may omit some of this data from the weight and balance documentation.

(2) ***Last minute change***. If any last-minute change occurs after the completion of the weight and balance documentation, this must be brought to the attention of the pilot in command and the last-minute change must be entered on the weight and balance documentation. The maximum allowed change in the number of passengers or hold load acceptable as a last-minute change must be specified in the Operations Manual. If this number is exceeded, new weight and balance documentation must be prepared.

(b) ***Computerised systems***. Where weight and balance documentation are generated by a computerised weight and balance system, the operator must verify the integrity of the output data. It must establish a system to check that amendments of its input data are incorporated properly in the system and that the system is operating correctly on a continuous basis by verifying the output data at intervals not exceeding 6 months. The computerized system shall be previously approved by the BDCA.

(c) ***Onboard weight and balance systems***. The Operator must obtain the approval of the BDCA if it wishes to use an onboard weight and balance computer system as a primary source for dispatch.

(d) ***Datalink***. When weight and balance documentation is sent to aeroplanes via datalink, a copy of the final weight and balance documentation as accepted by the pilot in command must be available on the ground.

SUBPART K – INSTRUMENTS AND EQUIPMENT

BCAR-OPS 1.630 Introduction

(See AMC OPS 1.630)

(a) The Operator shall ensure that a flight does not commence in an aircraft unless it is equipped with instruments, which will enable the flight crew to control the flight path of the aeroplane, carry out any required procedural manoeuvres and observe the operating limitations of the aeroplane. In addition, the following instruments and equipment under this Subpart are required to be:

(1) Approved, except as specified in subparagraph (c), and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements; and

(2) In operable condition for the kind of operation being conducted except as provided in the MEL (See BCAR-OPS 1.030).

(b) Instruments and equipment minimum performance standards are those prescribed in accordance with the aeroplane certification basis used unless different performance standards are prescribed in the operational or airworthiness codes.

(c) The following items shall not be required to have an equipment approval:

(1) Fuses referred to in BCAR-OPS 1.635.

(2) Electric torches referred to in BCAR-OPS 1.640(a) (4).

(3) An accurate time piece referred to in BCAR-OPS 1.650(a) (2) and 1.652(b);

(4) Chart holder referred to in BCAR-OPS 1.652(o).

(5) First-aid kits referred to in BCAR-OPS 1.745;

(6) Emergency medical kit referred to in BCAR-OPS 1.755;

(7) Megaphones referred to in BCAR-OPS 1.810;

(8) Survival and pyrotechnic signalling equipment referred to in BCAR-OPS 1.835(a) and (c); and

(9) Sea anchors and equipment for mooring, anchoring or manoeuvring seaplanes and amphibians on water referred to in BCAR-OPS 1.840.

(10) Child restraint devices referred in BCAR-OPS1.730(a)(3).

(d) If equipment is to be used by one flight crew member at his/her station during flight, it must be readily operable from his/her station. When a single item of equipment is required to be operated by more than one flight crew member it must be installed so

that the equipment is readily operable from any station at which the equipment is required to be operated.

(e) Those instruments that are used by any one flight crew member shall be so arranged as to permit the flight crew member to see the indications readily from his/her station, with the minimum practicable deviation from the position and line of vision which he/she normally assumes when looking forward along the flight path. Whenever a single instrument is required in an aeroplane operated by more than one flight crew member it must be installed so that the instrument is visible from each applicable flight crew station.

BCAR-OPS 1.635 Circuit protection devices

The Operator shall not operate an aeroplane in which fuses are used unless there are spare fuses available for use in flight equal to at least 10% of the number of fuses of each rating or three of each rating whichever is the greater.

BCAR-OPS 1.640 Aeroplane operating lights

The Operator shall not operate an aeroplane unless it is equipped with:

(a) For flight by day:

(1) Anti-collision light system;

(2) Navigation/position lights;

(3) Lighting supplied from the aeroplane's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the aeroplane;

(4) Lighting supplied from the aeroplane's electrical system to provide illumination in all passenger compartments; and

(5) An electric torch for each required crew member readily accessible to crew members when seated at their designated station.

(b) For flight by night, in addition to equipment specified in paragraph (a) above:

(1) Two landing lights or a single light having two separately energised filaments; and

(2) Lights to conform to the international standards for preventing collisions at sea if the aeroplane is a Seaplane or an Amphibian.

(3) (All the equipment specified in BCAR OPS 1 1.652.

(4) The lights required by BCAR 02, for aircraft in flight or operating in the movement area of an aerodrome.

BCAR-OPS 1.645 Windshield wipers

The Operator shall not operate an aeroplane with a maximum take-off weight of more than 5 700 Kg unless it is equipped at each pilot station with a windshield wiper or equivalent means to maintain a clear portion of the windshield during precipitation.

BCAR-OPS 1.650 Day VFR Operations – Flight and navigation instruments and associated equipment

(See AMC OPS 1.650/1.652**(**AMC**)**)
(See AMC OPS 1.650/1.652(AMC))
(See AMC OPS 1.650(a) (9) /1.652(j))
(See AMC OPS .650(a) (16) /1.652(t))

(a) The Operator shall not operate an aeroplane by day in accordance with Visual Flight Rules (VFR) unless it is equipped with the flight and navigational instruments and associated equipment and, where applicable, under the conditions stated in the following subparagraphs:

1. A magnetic compass;

(2) An accurate timepiece showing the time in hours, minutes, and seconds;

(3) A sensitive pressure altimeter calibrated in feet with a subscale setting, calibrated in hectopascals/millibars inches of mercury, adjustable for any barometric pressure likely to be set during flight;

(4) An airspeed indicator calibrated in knots;

(5) A vertical speed indicator;

(6) A turn and bank indicator, or a turn coordinator incorporating a slip indicator;

(7) An attitude indicator;

(8) A stabilised direction indicator;

(9) A means of indicating in the flight crew compartment the outside air temperature calibrated in degrees Celsius. (See AMC OPS 1.650 (a)(9) y 1.652 (j))

(10) For flights which do not exceed 60 minutes duration, which take off and land at the same aerodrome, and which remain within 50 nm of that aerodrome, the instruments prescribed in subparagraphs (6), (7), and (8) above, and subparagraphs (11) (iv), (11) (v), and (11) (vi) below, may all be replaced by either a turn and slip indicator, or a turn coordinator incorporating a slip indicator, or both an attitude indicator and a slip indicator.

(11) Whenever two pilots are required the second pilot's station shall have separate instruments as follows:

(i) A sensitive pressure altimeter calibrated in feet with a subscale setting calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight;

(ii) An airspeed indicator calibrated in knots;

(iii) A vertical speed indicator;

A turn and slip indicator, or a turn coordinator incorporating a slip indicator An attitude indicator; and

(iv) A stabilised direction indicator.

(12) Each airspeed indicating system must be equipped with a heated pitot tube or equivalent means for preventing malfunction due to either condensation or icing for:

(13) Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate;

(14) All aeroplanes must be equipped with means for indicating when power is not adequately supplied to the required flight instruments; and

(15) All aeroplanes with compressibility limitations not otherwise indicated by the required airspeed indicators shall be equipped with a Mach number indicator at each pilot's station.

(16) The Operator shall not conduct day VFR operations unless the aeroplane is equipped with a headset with boom microphone or equivalent for each flight crew member on flight deck duty. (See AMC OPS 1.650(a)(16)/1.652 (t)).

(b) VFR flights conducted as controlled flights shall be equipped in accordance with BCAR OPS 1.652.

BCAR-OPS 1.652 IFR or night operations – Flight and navigation instruments and associated equipment

(See AMC OPS 1.650/1.652(AMC)**)**
(See AMC OPS 1.650/1.652(AMC))
(See AMC OPS 1.650 (a) (9) /1.652(j))
(See AMC OPS 1.650(a) (16) /1.652(t))
(See AMC OPS 1.652(d) / (l) (2))

The Operator shall not operate an aeroplane in accordance with instrument flight rules (IFR) or by night in accordance with visual flight rules (VFR) unless it is equipped with the flight and navigational instruments and associated equipment and, where applicable, under the conditions stated in the following subparagraphs:

(a) A magnetic compass;

(b) An accurate time-piece showing the time in hours, minutes and seconds;

(c) Two sensitive pressure altimeters calibrated in feet with subscale settings, calibrated in hectopascals/millibars/inches of mercury adjustable for any barometric pressure likely to be set during flight. These altimeters must have counter drum-pointer or equivalent presentation. Neither three pointer altimeters nor drum-pointer altimeters satisfy the condition explained above;

(d) An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to either condensation or icing including a warning indication of pitot heater failure. The pitot heater failure warning indication requirement does not apply to those aeroplanes with a maximum approved passenger seating configuration of 9 or less or a maximum certificated take-off mass of 5 700 kg or less and issued with an individual Certificate of Airworthiness prior to 1April 1998;

(e) A turn and sideslip indicator;

(f) A vertical speed indicator;

(g) A flight attitude indicator (artificial horizontal)

(h) A heading indicator (directional gyro)

(i) A means of indicating whether the power supply to the gyroscopic instrument is adequate;

(j) A means of indicating in the flight crew compartment the outside air temperature calibrated in degrees Celsius (See AMC OPS 1.650 (a)(9) and 1.652 (j));

(k) Two independent static pressure systems, except that for propeller driven aeroplanes with maximum certificated take-off weight of 5 700 kg or less, one static pressure system and one alternate source of static pressure is allowed;

(l) Whenever two pilots are required the second pilot's station shall have separate instruments as follows:

(1) A sensitive pressure altimeter calibrated in feet with a subscale setting, calibrated in hectopascals/millibars/inches of mercury, adjustable for any barometric pressure likely to be set during flight and which may be one of the 2 altimeters required by subparagraph (c) above. These altimeters must have counter drum-pointer or equivalent presentation;

(2) An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to either condensation or icing including a warning indication of pitot heater failure.

(3) A vertical speed indicator;

(4) A turn and sideslip indicator;

(5) An attitude indicator; and

(6) A stabilised direction indicator.

(m) Those aeroplanes with a maximum certificated take-off weight in excess of 5 700 kg must be equipped with an additional, standby, attitude indicator (artificial horizon), capable of being used from either pilot's station, that:

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

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

(3) Operates independently of any other attitude indicating system;

(4) Is operative automatically after total failure of the normal electrical generating system; and

(5) Is appropriately illuminated during all phases of operation.

(n) In complying with subparagraph (m) above, it must be clearly evident to the flight crew when the standby attitude indicator, required by that subparagraph, is being operated by emergency power. Where the standby attitude indicator has its own dedicated power supply there shall be an associated indication, either on the instrument or on the instrument panel, when this supply is in use.

(o) A chart holder in an easily readable position which can be illuminated for night operations.

(p) If the standby attitude instrument system is installed and usable until reaching attitudes of 360 banking or pitching degrees, the turn and slip indicators may be replaced by slip indicators. Usable means that the system works from 0 to 360 degrees in banking or pitching.

(q) Whenever duplicate instruments are required, the requirement embraces separate displays for each pilot and separate selectors or other associated equipment where appropriate.

(r) All aeroplanes must be equipped with means for indicating when power is not adequately supplied to the required flight instruments.

(s) All aeroplanes with compressibility limitations not otherwise indicated by the required airspeed indicators shall be equipped with a Mach number indicator at each pilot's station.

(t) The Operator shall not conduct IFR or night operations unless the aeroplane is equipped with a headset with boom microphone or equivalent for each flight crew member on flight deck duty and a transmit button on the control wheel for each required pilot. (See AMC OPS 1.650(a)(16)/1.652(t))

BCAR-OPS 1.655 Additional equipment for single pilot operation under IFR or at night

(a) The Operator shall not conduct single pilot IFR or night operations unless the aeroplane is equipped with:

(1) an autopilot with at least altitude holds and heading mode.

(2) a headset with boom microphone or equivalent; and

(3) a chart holder to display the aeronautical charts to be read under any environmental light related condition.

BCAR-OPS 1.660 Altitude alerting system.

(a) The Operator shall not operate a turbine propeller powered aeroplane with a maximum certificated take-off weight more than 5 700 kg or having a maximum approved passenger seating configuration of more than nine seats unless it is equipped with an altitude alerting system capable of:

(1) Alerting the flight crew upon approaching a preselected altitude; and

(2) Alerting the flight crew by at least an aural signal, when deviating from a preselected altitude,

BCAR-OPS 1.665 Ground proximity warning system

(a) The Operator shall not operate a turbine powered aeroplane having a maximum certificated take-off weight more than 5 700 kg or a maximum approved passenger seating configuration of more than 9 unless it is equipped with a ground proximity warning system that includes a predictive terrain hazard warning function (terrain awareness and warning system).

(b) All piston-engine aeroplanes of a maximum certificated take-off weight more than 5 700 kg or authorised to carry more than nine passengers shall be equipped with a ground proximity warning system which provides the warnings in paragraphs (d)(1) and (d)(3), warning of unsafe terrain clearance and a forward-looking terrain avoidance function.

(c) The operator shall implement database management procedures that ensure the timely distribution and updating of terrain and obstacle data in the terrain proximity warning system.

(d) A ground proximity warning system shall provide by means of aural signals, which may be supplemented by visual signals, timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

(e) A ground proximity warning system shall provide, unless otherwise specified herein, warnings of the following circumstances:

(1) excessive descent rate;

(2) excessive terrain closure rate;

(3) excessive altitude loss after take-off or go-around;

(4) unsafe terrain clearance while not in landing configuration:

(i) gear not locked down;

(ii) flaps not in a landing position; and

(5) excessive descent below the instrument glide path

BCAR-OPS 1.668 Airborne anti-collision avoidance system (ACAS II)

(See AMC OPS 1.668)

(a) An operator must not operate a turbine-powered airplane whose maximum certificated take-off weight exceeds 5,700 kg, or which is authorized to carry more than 19 passengers unless it is equipped with a airborne collision avoidance system with a minimum performance level of at least ACAS II

(b) An airborne collision avoidance system shall operate in accordance with the relevant provisions of Annex 10 volume IV.

BCAR-OPS 1.670 Airborne weather radar equipment

(a) The Operator shall not operate:

(1) A pressurised aeroplane; or

(2) An unpressurised aeroplane which has a maximum certificated take-off weight of more than 5 700 kg or a maximum approved passenger seating configuration of more than 9 seats:

Unless it is equipped with airborne weather radar equipment whenever such an aeroplane is being operated at night or in instrument meteorological conditions in areas where thunderstorms or other potentially hazardous weather conditions regarded as detectable with airborne weather radar.

(b) For propeller driven pressurised aeroplanes having a maximum certificated take-off weight not exceeding 5 700 kg with a maximum approved passenger seating configuration not exceeding 9 seats, the airborne weather radar equipment may be replaced by other equipment capable of detecting thunderstorms and other potentially hazardous weather conditions subject to approval by the BDCA.

BCAR-OPS 1.673 Wind Shear Prediction and Warning System

a) All turbine-powered airplanes whose maximum certificated take-off mass exceeds 5,700 kg or authorized to carry more than nine passengers must be equipped with a wind shear forecast and warning system.

b) The wind shear forecasting, and warning system must have the capability to provide the pilot with an audible or visual warning of wind shear that the aircraft may encounter, and the information necessary to enable the pilot to safely maintain the trajectory. of desired flight or to adopt the necessary preventive measures. In addition, the system must provide the pilot with an indication that the limits specified by the automatic landing equipment certification are being reached when using such equipment.

BCAR-OPS 1.675 Equipment for operations in icing conditions

(a) The Operator shall not operate an aeroplane in expected or actual icing conditions unless it is certificated and equipped to operate in icing conditions.

(b) The Operator shall not operate an aeroplane in expected or actual icing conditions at night unless it is equipped with a means to illuminate or detect the formation of ice. Any illumination that is used must be of a type that will not cause glare or reflection that would handicap crew members in the performance of their duties.

(c) All aeroplanes, when flown in circumstances for which icing has been reported or is expected to form, shall be equipped with suitable anti-icing devices or de-icers.

BCAR-OPS 1.680 Cosmic radiation detection equipment

(a) The Operator shall not operate an aeroplane above 15 000 m (49 000 ft.) unless:

(1) It is equipped with an instrument to measure and indicate continuously the dose rate of total cosmic radiation being received (i.e. the total of ionising and neutron radiation of galactic and solar origin) and the cumulative dose on each flight, or

(2) A system of on-board quarterly, a radiation sampling acceptable to the BDCA is established.

BCAR-OPS 1.685 Flight crew interphone system

The Operator shall not operate an aeroplane on which a flight crew of more than one is required unless it is equipped with a flight crew interphone system, including headsets and microphones, not of a handheld type, for use by all members of the flight crew. All flight crew members required to be on flight deck duty shall communicate through boom or throat microphones below the transition level/altitude.

BCAR-OPS 1.690 Crew member interphone system

(See AMC OPS 1.690 (b) (6)(i))
(See AMC OPS 1.690 (b)(7))

(a) The Operator shall not operate an aeroplane with a maximum certificated take-off weight exceeding 15 000 kg or having a maximum approved passenger seating configuration of more than 19 unless it is equipped with a crew member interphone system.

(b) The crew member interphone system required by this paragraph must:

(1) Operate independently of the public address system except for handsets, headsets, microphones, selector switches and signalling devices;

(2) Provide a means of two-way communication between the flight crew compartment and:

(i) Each passenger compartment;

(ii) Each galley located other than on a passenger deck level; and

(iii) Each remote crew compartment that is not on the passenger deck and is not easily accessible from a passenger compartment;

(3) Be readily accessible for use from each of the required flight crew stations in the flight crew compartment;

(4) Be readily accessible for use at required cabin crew member stations close to each separate or pair of floor level emergency exits;

(5) Have an alerting system incorporating aural or visual signals for use by flight crew members to alert the cabin crew and for use by cabin crew members to alert the flight crew;

(6) Have a means for the recipient of a call to determine whether it is a normal call or an emergency call. (See AMC OPS 1.690(b) (6)); and

(7) Provide on the ground a means of two-way communication between ground personnel and at least two flight crew members. (See AMC OPS 1.690(b) (7)).

BCAR-OPS 1.695 Passenger announcement system (PA)

(a) The Operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 19 unless a passenger announcement system is installed.

(b) The passenger announcement system required by this paragraph must:

(1) Operate independently of the interphone systems except for handsets, headsets, microphones, selector switches and signalling devices;

(2) Be readily accessible for immediate use from each required flight crew member station;

(3) For each required floor level passenger emergency exit which has an adjacent cabin crew seat, have a microphone which is readily accessible to the seated cabin crew member, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated cabin crew members;

(4) Be capable of operation within 10 seconds by a cabin crew member at each of those stations in the compartment from which its use is accessible; and

(5) Be audible and intelligible at all passenger seats, toilets, and cabin crew seats and workstations.

BCAR-OPS 1.697 Flight recorders.

General.

(See Appendix 1 to BCAR OPS 1.697)
(See Appendix 2 to BCAR OPS 1.697)

(a) Flight recorders shall be located and installed to provide maximum practical protection for the recordings in order that the recorded information may be preserved, recovered, and transcribed. Flight recorders shall meet the prescribed crashworthiness and fire protection specifications and must have a securely attached underwater locating device.

(b) The operator shall develop procedures to preserve flight recorder records to ensure these are deactivated upon completion of flight time following an accident or incident. The flight recorders shall not be reactivated before their disposition as determined in accordance with the BCAR 13.

(c) The operator shall develop procedures to ensure operational checks and evaluations of recordings from the flight recorder systems are conducted to ensure the continued serviceability of the recorders. The checks required shall be conducted in accordance with Appendix 2 to BCAR OPS 1.697.

(d) The documentation requirement concerning FDR and ADRS parameters provided by operators to accident investigation authorities should be in electronic format and take account of industry specifications.

(e) All aeroplanes of a maximum certificated take-off mass of over 15 000 kg which the application for type certification is submitted to a Contracting State on or after 1 January 2016, and which are required to be equipped with both a CVR and an FDR, shall be equipped with two combination recorders (FDR/CVR). One recorder shall be located as close to the cockpit as practicable, and the other recorder located as far aft as practicable.

(f) All aeroplanes of a maximum certificated take-off mass over 5 700kg, whose type certificate has been first issued on 1 January 2016, or thereafter, required to be equipped with an FDR and a CVR, may alternatively be equipped with two combination recorders (FDR/CVR).

(g) All multi-engine turbine-powered aeroplanes of a maximum certificated take-off mass of 5 700 kg or less, required to be equipped with an FDR and/or a CVR, may alternatively be equipped with one combination recorder (FDR/CVR).

(h) Flight recorders must not be turned off during flight time.

(i) Flight recorder electronic documentation.

(j) Combination recorders.

BCAR-OPS 1.698 Recovery of flight recorder data

(1) All aeroplanes with a maximum certificated take-off weight greater than 27,000 kg authorized to carry more than 19 passengers, whose type certification application has been submitted to a Contracting State, , must be equipped with a means accepted by the BDCA to retrieve the data from the flight recorders and present them in a timely manner.

(2) When approving the means used to timely present the data from the flight recorders, the BDCA will take into account the following:

(i) The capabilities of the operator

(ii) the global capability of the airplane and its systems certified by the State of Design.

(iii) the reliability of the means to retrieve the appropriate channels from the CVR and the appropriate data from the FDRs, and

(iv) specific mitigation measures.

BCAR-OPS 1.700 Cockpit voice recorders (CVR) and cockpit audio recording system (CARS)

(See Appendix 1 to BCAR OPS 1.700)
(See AMC OPS 1.700 (h)/(i))

(a) The operator shall ensure that all turbine-engine aeroplanes of a maximum certificated take- off mass of 2 250 kg and up to 5 700 kg, for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, and requiring more than one pilot to be operated, shall be equipped with a CVR or a CARS.

(b) All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 shall be equipped with a CVR.

(c) All turbine-engine aeroplanes, for which the individual certificate of airworthiness was first issued before 1 January 1987, with a maximum certificated take-off mass of over 27 000 kg that are of types of which the prototype was certificated by the appropriate national authority after 30 September 1969 shall be equipped with a CVR.

(d) The use of magnetic tape and wire CVRs should not be The CVR and CARS do not use magnetic tape nor will they be wired.

(e) All CVRs required in paragraphs a, b, c above must be capable of retaining all recorded information for at least the last two (2) hours of their operation.

(f) All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2022 shall be equipped with a CVR capable of retaining the information recorded during at least the last twenty-five (25) hours of its operation.

(g) All aeroplanes that must be equipped with a CARS and whose individual airworthiness certificate was issued for the first time on or after January 1, 2025, will have a CARS

capable of retaining the information recorded for at least the last 2 hours of its operation.

(h) The CVR with reference to a time scale shall record:

(1) Voice communications transmitted from or received on the flight deck by radio;

(2) The aural environment of the flight deck, including without interruption, the audio signals received from each boom and mask microphone in use;

(3) Voice communications of flight crew members on the flight deck using the aeroplane's interphone system;

(4) Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker; and

(5) Voice communications of flight crew members on the flight deck using the passenger announcement system, if installed.

(i) The cockpit voice recorder must start automatically to record prior to the aeroplane moving under its own power and continue to record until the termination of the flight when the aeroplane is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the cockpit voice recorder must start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

(j) The cockpit voice recorder must have a device to assist in locating that recorder in water.

(k) The cockpit voice recorder shall not be switched off during the time of the flight.

(l) Operational checks and evaluations of the CVR system recordings shall be carried out to ensure the proper functioning of the recorder.

<u>Cockpit voice recorder alternate power:</u>

1) An alternate power source shall automatically engage and provide ten (10) ± 1 minutes of operation whenever aeroplane power to the recorder ceases, either by normal shutdown or by any other loss of power. The alternate power source shall power the CVR and its associated cockpit area microphone components. The CVR shall be located as close as practicable to the alternate power source.

2) All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2018 shall be provided with an alternate power source, as defined in paragraph (i) (1) above, that powers the forward CVR in the case of combination recorders.

BCAR-OPS 1.715 Flight data recorders (FDR) and aircraft data recorder systems (ADRS).

(See Appendix 1 to BCAR-OPS 1.715)
(See AMC OPS 1.715)

(a) The operator shall ensure that aeroplanes have flight data recorders in accordance with the following:

1. Aeroplanes with a maximum certificated take-off weight greater than 27,000 kg inclusive and whose airworthiness certificate was issued for the first time on or after January 1, 1989, must be equipped with an FDR that will record at least the first 32 parameters listed in Table 1 of Appendix 1 to BCAR OPS 1.697.

2. Aircraft with a maximum certificated take-off weight greater than 5,700 kg and up to 27,000 kg and whose individual airworthiness certificate was issued for the first time on or after January 1, 1989, must be equipped with an FDR. which will record at least the first 16 parameters listed in Table 1 of Appendix 1 to BCAR OPS 1.697.

3. All turbine-powered airplanes with a maximum certificated take-off weight greater than 27,000 kg, whose airworthiness certificate was first issued on or after 01/01/1987, but before 01/01/1987. January 1989 and whose prototype has been certified by the competent national authority after 9/30/1969, will be equipped with an FDR that will record at least the first 16 parameters listed in Table 1 of Appendix 1 to BCAR OPS 1.697.

4. All aeroplanes with a maximum certificated take-off weight greater than 5,700 kg for which the corresponding certificate of airworthiness has been issued after January 1, 2005, will be equipped with an FDR that will record at least the 78 parameters. listed in Table 1 of Appendix 1 to BCAR OPS 1.697

5. All turbine-powered airplanes with a maximum certificated take-off mass weight of more than 5,700 kg for which an application for type certification is submitted to a Contracting State on or after January 1, 2023, must be equipped with an FDR capable of record at least 82 parameters. Listed in Table 1 of Appendix 1 to BCAR OPS 1.697.

6. All turbine airplanes whose individual airworthiness certificate was issued for the first time before January 1, 1989, which have a maximum certificated take-off weight greater than 5,700 kg, except those indicated in 1.715 (a) (3), they will be equipped with an FDR that will record at least the first 5 parameters listed in Table 1 of Appendix 1 to BCAR OPS 1.697.

(b) the FDR and ADRS will not use metal band, modulated frequency, photographic film or magnetic tape. All FDRs will keep the information recorded for at least the last 25 hours of their operation.

(c) Data must be obtained from aeroplane sources which enable accurate correlation with information displayed to the flight crew.

(d) The Flight Data Recorder must start recording automatically, before the airplane is moving under its own power, and must stop automatically after the airplane is not able to move under its own power.

(e) Aeroplanes may combine the data flight recorder with the cockpit voice recorder (FDR/CVR). In that case, it shall be possible to easily correlate digital communication and cockpit voice recordings.

BCAR OPS 1.725 Flight data recorders-data link communications

(See Appendix 1 to BCAR OPS 1.725)

The operator shall ensure that its aeroplanes comply with the following:

(a) All aeroplanes for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which utilise any of the data link communications applications listed in paragraph (a) (2) of Appendix 1 to BCAR OPS 1.725 and are required to carry a CVR, shall record data link communications messages on a crash-protected flight recorder.

(b) Aeroplanes whose individual airworthiness certificates were issued for the first time before January 1, 2016, which are required to carry a CVR and which have been modified on or after January 1, 2016, in order to install and use in them any of the applications to establish communications by data link that are listed in paragraph (a) (2) of Appendix 1 to BCAR OPS 1.725 will record the messages of the communications by data link in a protected flight recorder against accidents unless the data link communications equipment is compatible with an aircraft type certificate or modification that was first approved on January 1, 2016. .

(c) The minimum recording duration shall be equal to the duration of the CVR.

(d) Data link recording shall be able to be correlated to the recorded cockpit audio.

(e) Data must be obtained from aeroplane sources which enable accurate correlation with information displayed to the flight crew. Sufficient information to derive the content of the communications message and the time the messages were displayed to the flight crew shall be recorded.

BCAR OPS 1.728 Flight recorder data recovery

(a) Application

(1) All aeroplanes with a maximum take-off mass of more than 27,000 kg for which an application for type certification is submitted to a contracting State on or after January 1, 2023, shall be equipped with a flight recorder protected against accidents, which will record the information shown to the flight crew on the electronic screens, as well as the operation by the flight crew of the switches and selectors, as defined in Appendix 1 to the BCAR OPS 1.728.

(2) The duration of the record of the flight crew-interface will be at least the last 2 hours.

(3) Flight-machine interface recordings may be correlated with cockpit audio recordings.

BCAR-OPS 1.730 Seats, safety seat belts and child restraint devices

(See AMC 1.730 (a) (3))

(a) The Operator shall not operate an aeroplane unless it is equipped with:

1. A seat or berth for each person who is aged two years or more;

2. A safety belt, with or without a safety belt, a diagonal shoulder strap or a safety harness for use in each passenger seat for each passenger aged 2 years or more;

3. A safety harness for each flight crew member seat. The safety harness of each pilot seat must include a device that supports the occupant's torso in the event of rapid deceleration.

(b) All safety belts with shoulder harness must have a single point release.

BCAR-OPS 1.731 Fasten seat belt and no smoking signs

The Operator shall not operate an aeroplane in which all passenger seats are not visible from the flight deck unless it is equipped with a means of indicating to all passengers and cabin crew when seat belts shall be fastened and when smoking is not allowed.

BCAR-OPS 1.735 Internal doors and curtains

(a) An operator must not operate an aeroplane unless the following equipment is installed:

(1) In a passenger aeroplane with a maximum certified take-off weight greater than 54,500 kg; or greater than 45,500 kg and with a capacity greater than 19 passengers; or with a capacity greater than 60 passengers; an approved flight crew compartment door designed to resist penetration by small arms fire and shrapnel from grenades and intrusions into the force of unauthorized persons. This door must be able to be locked and unlocked from any pilot station.

(2) In all aeroplanes provided with a flight crew door in accordance with paragraph (1) above:

i. The door will be secured from the moment all exterior doors are closed after embarkation until any of said doors are opened for disembarkation, except when it is necessary to allow the access and exit of authorized persons, in addition, the door will have a sign that says “crew only”; and

ii. Means shall be provided to monitor from any pilot station the entire gate area in front of the flight crew compartment to identify persons requesting entry and to detect suspicious behaviour or potential threats.

(3) For all aeroplanes not included in paragraph (1) above, a door between the passenger compartment and the cockpit with a sign that says "crew only" and a locking system that

prevents passengers from opening it without the authorization of a member of the flight crew;

(4) A means for opening each door that separates a passenger compartment from another compartment that is provided with an emergency exit. The opening system must be easily accessible;

(5) If it is necessary to pass through a door or curtain separating the passenger cabin from other areas to reach any required emergency exit, from any passenger seat, the door or curtain must have a means to hold it in the open position;

(6) A sign on each inside door or next to a curtain leading to a passenger emergency exit indicating that it must be held in position open during take-off and landing;

(7) A means for any crew member to unlock any door that is normally accessible to passengers and that passengers can lock.

BCAR-OPS 1.745 First-aid kits

(See AMC OPS 1.745)

(a) The Operator shall not operate an aeroplane unless it is equipped with first-aid kits, readily accessible for use, to the following scale:

Number of passengers seats installed	Number of first-aid kits required
0 to 100	1
101 to 200	2
201 to 300	3
301 to 400	4
401 to 500	5
Over 500	6

(b) In accordance with the BDCA, The Operator shall ensure that first-aid kits are:

(1) Inspected periodically to confirm, to the extent possible, that contents are maintained in the condition necessary for their intended use; and

(2) Replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant.

(c) Location

1) First-aid and universal precaution kits should be distributed as evenly as practicable throughout the passenger cabins. They should be readily accessible to cabin crew members.
2) The medical kit, when carried, should be stored in an appropriate secure location.

BCAR-OPS 1.750 Universal precaution kit(s)

(See AMC OPS 1.750)

For routine flights, in aeroplane that require flying with at least one member of the cabin crew, a universal precaution kit must be carried on board (two for aircraft authorized to carry more than 250 passengers) For use by members of the cabin crew to handle incidents related to ill-health conditions related to a case of suspected contagious, serious illness or in case of illness in which there may be

contact with bodily fluids.

BCAR-OPS 1.755 Emergency medical kit

(See AMC OPS 1.755)

The Operator shall not operate an aeroplane authorized to carry more than 100 passengers for a of more than two hours, must equip those aeroplane with a medical kit for use by doctors or other qualified persons to treat medical emergencies in flight.

BCAR-OPS 1.760 First-aid oxygen

(See AMC OPS 1.760)

(a) The Operator shall not operate a pressurised aeroplane, above 25 000 ft., when a cabin crew member is required to be carried, unless it is equipped with a supply of undiluted oxygen for passengers who, for physiological reasons, might require oxygen following a cabin depressurisation. The amount of oxygen shall be calculated using an average flow rate of at least 3 litres Standard Temperature Pressure Dry (STPD)/minute/person and shall be sufficient for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 8 000 ft. but does not exceed 15 000 ft., for at least 2% of the passengers carried, but in no case for less than one person. There shall be a sufficient number of dispensing units, but in no case less than two, with a means for cabin crew to use the supply. The dispensing units may be of a portable type.

(b) The amount of first-aid oxygen required for a particular operation shall be determined based on cabin pressure altitudes and flight duration, consistent with the operating procedures established for each operation and route.

(c) The oxygen equipment provided shall be capable of generating a mass flow to each user of at least four litres per minute, STPD. Means may be provided to decrease the flow to not less than two litres per minute, STPD, at any altitude.

BCAR-OPS 1.770 Supplemental oxygen –pressurised aeroplanes

(See Appendix 1 to BCAR-OPS 1.770)
(See AMC OPS 1.770)
(See AMC OPS 1.770(b) (2)(v))

(a) *General*

(1) The Operator shall not operate a pressurised aeroplane at pressure altitudes above 10 000 ft. unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required by this paragraph, is provided.

(2) The amount of supplemental oxygen required shall be determined on the basis of cabin pressure altitude, flight duration and the assumption that a cabin pressurisation failure will occur at the pressure altitude or point of flight that is most critical from the standpoint of oxygen need, and that, after the failure, the aeroplane will descend in accordance with emergency procedures specified in the Aeroplane Flight Manual to a safe altitude for the route to be flown that will allow continued safe flight and landing.

(3) Following a cabin pressurisation failure, the cabin pressure altitude shall be considered the same as the aeroplane pressure altitude, unless it is demonstrated to the BDCA that no probable failure of the cabin or pressurisation system will result in a cabin pressure altitude equal to the aeroplane pressure altitude. Under these circumstances, the demonstrated maximum cabin pressure altitude may be used as a basis for determination of oxygen supply.

(b) *Oxygen equipment and supply requirements*

(1) *Members of the flight crew:*

(i) Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply, then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply. Flight deck seat occupants, not supplied by the flight crew source, are to be considered as passengers for the purpose of oxygen supply.

(ii) Flight crew members, not covered by subparagraph (b)(1)(i) above, are to be considered as passengers for the purpose of oxygen supply.

(iii) Oxygen masks shall be located to be within the immediate reach of flight crew members whilst at their assigned duty station.

(iv) Oxygen masks for use by flight crew members in pressurised aeroplanes operating at pressure altitudes above 25 000 ft., shall be a quick donning type of mask.

(2) *Cabin crew members, additional crew members and passengers:*

(i) Cabin crew members and passengers shall be supplied with supplemental oxygen in accordance with **Appendix 1**, except when subparagraph (v) below applies. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

(ii) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided sufficient spare outlets and masks and/or sufficient portable oxygen units with masks for use by all required cabin crew members. The spare outlets and/or portable oxygen units are to be distributed evenly throughout the cabin to ensure immediate availability of oxygen to each required cabin crew member regardless of his/her location at the time of cabin pressurisation failure.

(iii) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft. shall be provided an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant, wherever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10%. The extra units are to be evenly distributed throughout the cabin.

(iv) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft. or which, if operated at or below 25 000 ft., cannot descend safely within 4 minutes to 13 000 ft. shall be provided with automatically deployable oxygen equipment immediately available to each occupant, wherever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10%. The extra units are to be evenly distributed throughout the cabin.

(v) The oxygen supply requirements, as specified in Appendix 1 of this section, for aeroplanes not certificated to fly above 25 000 ft., may be reduced to the entire flight time between 10 000 ft. and 13 000 ft. cabin pressure altitudes for all required cabin crew members and for at least 10% of the passengers if, at all points along the route to be flown, the aeroplane is able to descend safely within 4 minutes to a cabin pressure altitude of 13 000 ft. (See AMC OPS 1.770 (b) (2) (v)).

BCAR-OPS 1.775 Supplemental oxygen – non-pressurised aeroplanes

(See Appendix 1 to BCAR-OPS 1.775)

(a) *General*

(1) The Operator shall not operate a non-pressurised aeroplane at altitudes above 10 000 ft. unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.

(2) The amount of supplemental oxygen for sustenance required for a particular operation shall be determined based on flight altitudes and flight duration, consistent with the operating procedures established for each operation in the Operations Manual and with the routes to be flown, and with the emergency procedures specified in the Operations Manual.

(3) An aeroplane intended to be operated at pressure altitudes above 10 000 ft. shall be provided with equipment capable of storing and dispensing the oxygen supplies required.

(b) *Oxygen supply requirements*

(1) *Flight crew members*. Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply, then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply.

(2) *Cabin crew members, additional crew members and passengers*. Cabin crew members and passengers shall be supplied with oxygen in accordance with Appendix 1 of this Section. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

BCAR-OPS 1.780 Crew protecting breathing equipment.

(a) The Operator shall not operate a pressurised aeroplane or an unpressurised aeroplane with a maximum certificated take-off weight exceeding 5 700 kg or having a maximum approved seating configuration of more than 19 seats unless:

(1) It has equipment to protect the eyes, nose, and mouth of each flight crew member while on flight deck duty and to provide oxygen for a period of not less than 15 minutes. The supply for Protective Breathing Equipment (PBE) may be provided by the supplemental oxygen required by BCAR-OPS 1.770 (b) (1) or BCAR-OPS 1.775(b) (1). In addition, when the flight crew is more than one and a cabin crew member is not carried, portable PBE must be carried to protect the eyes, nose and mouth of one member of the flight crew and to provide breathing gas for a period of not less than 15 minutes; and

(2) It has sufficient portable PBE to protect the eyes, nose, and mouth of all required cabin crew members and to provide breathing gas for a period of not less than 15 minutes.

(b) PBE intended for flight crew use must be conveniently located on the flight deck and be easily accessible for immediate use by each required flight crew member at their assigned duty station.

(c) PBE intended for cabin crew use must be installed adjacent to each required cabin crew member duty station.

(d) An additional, easily accessible portable PBE must be provided and located at or adjacent to the hand fire extinguishers required by BCAR-OPS 1.790 (a) (3) and 1.790(a) (4)) except that, where the fire extinguisher is located inside a cargo compartment, the PBE must be stowed outside but adjacent to the entrance to that compartment.

(e) PBE while in use must not prevent communication where required by BCAR-OPS 1.685, BCAR-OPS 1.690, BCAR-OPS 1.810 and BCAR-OPS 1.850.

BCAR-OPS 1.790 Hand fire extinguishers

(See Appendix 1 to BCAR-OPS 1.790)
(See AMC OPS 1.790)

(a) The Operator shall not operate an aeroplane unless hand fire extinguishers are provided for use in crew, passenger and, as applicable, cargo compartments and galleys in accordance with the following:

(1) The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used and, for personnel compartments, must minimise the hazard of toxic gas concentration;
(2) At least one hand fire extinguisher, containing Halon 1211 (bromochlorodifluoromethane, CBrCIF2), or equivalent as the extinguishing agent, must be conveniently located on the flight deck for use by the flight crew;
(3) At least one hand fire extinguisher must be located in, or readily accessible for use in, each galley not located on the main passenger deck;
(4) At least one readily accessible hand fire extinguisher must be available for use in each Class A or Class B cargo or baggage compartment and in each Class E cargo compartment that is accessible to crew members in flight; and
(5) At least the following number of hand fire extinguishers must be conveniently located in the passenger compartment(s):

Maximum approved passenger seating configuration	Number of extinguishers
0 to 30	1
31 to 60	2
61 to 200	3
201 to 300	4
301 to 400	5
401 to 500	6
501 to 600	7
601 or more	8

When two or more extinguishers are required, they must be evenly distributed in the passenger compartment.

(b) At least one of the required fire extinguishers located in the passenger compartment of an aeroplane with a maximum approved passenger seating configuration of at least 31, and not more than 60, and at least two of the fire extinguishers located in the passenger compartment of an aeroplane with a maximum approved passenger seating configuration of 61 or more must contain Halon 1211 (bromochlorodifluoromethane, CBrCIF2), or equivalent as the extinguishing agent.

(c) As of July 1, 2022, any agent used in fire extinguishers incorporated in the receptacles intended for disposing of towels, paper or waste in the lavatories of an aircraft whose individual certificate of airworthiness has been issued for the first time once on or after December 31, 2011, and any extinguishing agent used in portable fire extinguishers on an airplane first issued on or after December 31, 2018:

(1) must meet the minimum performance requirements of the applicable State of Registry; and

(2) must not be of a type listed in the Montreal Protocol on Substances that Deplete the Ozone Layer of 1987, which is listed in Annex A, Group II, of the Manual of the Montreal Protocol on Substances that Deplete the Ozone Layer Ozone Layer, Eighth Edition.

BCAR-OPS 1.795 Crash axes and crowbars

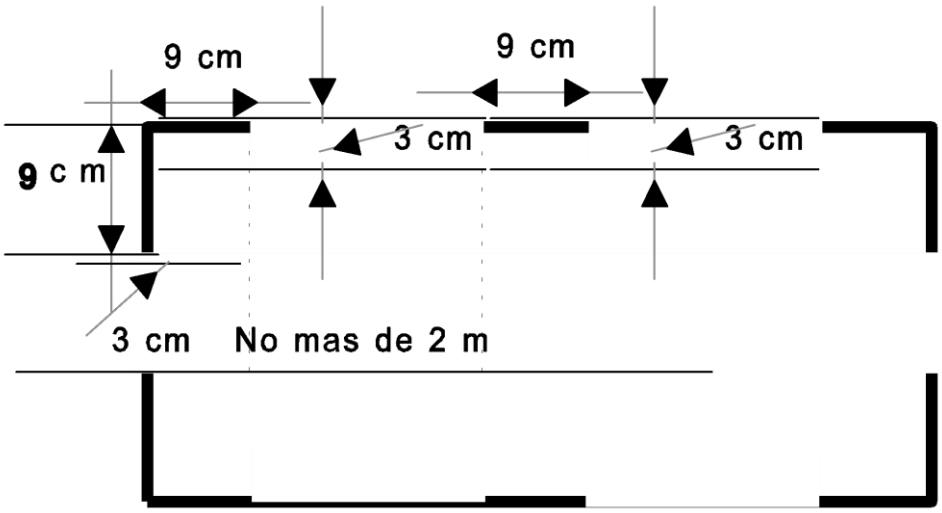
(a) The Operator shall not operate an aeroplane with a maximum certificated take-off weight exceeding 5 700 kg or having a maximum approved passenger seating configuration of more than 9 seats unless it is equipped with at least one crash axe or crowbar located on the flight deck. If the maximum approved passenger seating configuration is more than 200 an additional crash axe or crowbar must be carried and located in or near the most rearward galley area.

(b) Crash axes and crowbars located in the passenger compartment must not be visible to passengers.

BCAR-OPS 1.800 Marking of break-in points

(See AMC OPS 1.800)

The Operator shall ensure that, if areas of the fuselage suitable for break-in by rescue crews in emergency are marked on an aeroplane, such areas shall be marked as shown below. The colour of the markings shall be red or yellow, and if necessary, they shall be outlined in white to contrast with the background. If the corner markings are more than 2 metres apart, intermediate lines 9 cm x 3 cm shall be inserted so that there is no more than 2 metres between adjacent marks.



These marks do not demand an aeroplane to have breaking point.

BCAR-OPS 1.805 Means of emergency evacuation.

(a) The Operator shall not operate an aeroplane with passenger emergency exit sill heights:

(1) Which are more than 1.83 metres (6 feet) above the ground with the aeroplane on the ground and the landing gear extended; or

(2) Which would be more than 1.83 metres (6 feet) above the ground after the collapse of, or failure to extend of, one or more legs of the landing gear and for which a Type Certificate.

Unless it has equipment or devices available at each exit, where subparagraphs (1) or (2) apply, to enable passengers and crew to reach the ground safely in an emergency.

(b) Such equipment or devices need not be provided at overwing exits if the designated place on the aeroplane structure at which the escape route terminates is less than 1.83 metres (6 feet) from the ground with the aeroplane on the ground, the landing gear extended, and the flaps in the take-off or landing position, whichever flap position is higher from the ground.

(c) In aeroplanes required to have a separate emergency exit for the flight crew, there must be a device to assist all members of the flight crew in descending to reach the ground safely in an emergency when:

(1) The lowest point of the emergency exit is more than 1.83 metres (6 feet) above the ground with the landing gear extended; or

(2) For which a Type Certificate was first applied for on or after 1 April 2000, would be more than 1.83 metres (6 ft.) above the ground after the collapse of, or failure to extend of, one or more legs of the landing gear.

BCAR-OPS 1.810 Megaphones

(See AMC OPS 1.810)

(a) The Operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 60 and carrying one or more passengers unless it is equipped with portable battery-powered megaphones readily accessible for use by crew members during an emergency evacuation, to the following scales:

(1) For each passenger deck:

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

(2) For aeroplanes with more than one passenger deck, in all cases when the total passenger seating configuration is more than 60, at least 1 megaphone is required.

BCAR-OPS 1.815 Emergency lighting

(a) The Operator shall not operate a passenger carrying aeroplane which has a maximum approved passenger seating configuration of more than 9 unless it is provided with an emergency lighting system having an independent power supply to facilitate the evacuation of the aeroplane. The emergency lighting system must include:

(1) For aeroplanes which have a maximum approved passenger seating configuration of more than 19:

(i) Sources of general cabin illumination;

(ii) Internal lighting in floor level emergency exit areas; and

(iii) Illuminated emergency exit marking and locating signs.

(iv) For aeroplanes for which type certificate was requested before 1 May 1972 and when flying by night, exterior emergency lighting at all overwing exits, and at exits where descent assist means are required.

(v) For aeroplanes for which type certificate was issued on 1 May 1972 when flying by night, exterior emergency lighting at all passenger emergency exits; and

(vi) For aeroplanes for which type certificate was issued on or after 1 January 1958 a floor proximity emergency escape path marking system in the passenger compartment(s).

(2) For aeroplanes which have a maximum approved passenger seating configuration of 19 or less;

(i) Sources of general cabin illumination;

(ii) Internal lighting in emergency exit areas; and

(iii) Illuminated emergency exit marking and locating signs.

(b) The Operator shall not, by night, operate a passenger carrying aeroplane which has a maximum approved passenger seating configuration of 9 or less unless it is provided with a source of general cabin illumination to facilitate the evacuation of the aeroplane. The system may use dome lights or other sources of illumination already fitted on the aeroplane and which are capable of remaining operative after the aeroplane's battery has been switched off.

BCAR-OPS 1.820 Emergency locator transmitter

(See AMC OPS 1.820)
(See AMC OPS 1.820 (e))

(a) Except as provided in paragraph (b), The Operator shall not operate an aeroplane with an approved maximum passenger seating configuration of more than 19, unless it is equipped with at least one automatic emergency locator transmitter of any kind (ELT) activates itself automatically or two ELTs.

(b) The Operator shall not operate an aeroplane with an approved maximum passenger seating configuration of more than 19 for which a certificate of airworthiness is first issued after 1 July 2008, unless it is equipped with at least two ELTs, one of which shall be automatic or at least one ELT and a capacity that meets the requirements of BCAR-OPS 1.823.

(c) Except as provided in paragraph (d), The Operator shall not operate an aeroplane with an approved maximum passenger seating configuration of 19 or less, unless the aeroplane is equipped with at least one emergency locator transmitter of any kind.

(d) The Operator shall not operate an aeroplane with an approved maximum passenger seating configuration of 19 or less for which a certificate of airworthiness was first issued after 1 July 2008, unless the aeroplane is equipped with at least one automatic ELT.

(e) The Operator shall ensure that all ELTs, when installed, satisfy the following requirements: (see AMC 1.820 (e);

(1) are capable of transmitting on 121.2 MHZ and 406.0 MHZ simultaneously in accordance with ICAO Annex 10;

(2) are coded in accordance with ICAO Annex 10 Volume III; and

(3) are registered with the national agency responsible for initiating search and rescue or another State's nominated agency.

(f) All aeroplanes shall carry and automatic ELT.

BCAR-OPS 1.823 Locating an Aircraft in Distress

(Appendix 1 to BCAR-OPS 1.823)

(See AMC OPS 1.823)

a) As of 1 January 2025, all aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2024, shall autonomously transmit information from which a position can be determined by the operator at least once every minute, when in distress, in accordance with the Appendix 1 to BCAR 1.823.

b) b) The operator shall make available to the competent organization's information regarding the position of a flight in distress, as established by the BDCA.

BCAR-OPS 1.825 Life jackets

(See AMC OPS 1.825)

(a) *Land aeroplanes*. The Operator shall not operate a land aeroplane:

(1) When flying over water and at a distance of more than 50 nautical miles from the shore in the case of land aeroplanes that operate in accordance with BCAR OPS 1.500 or BCAR OPS1.505, or
(2) When flying en-route over water beyond gliding distance from the shore in the case of all other land aeroplanes; or
(3) When taking off or landing at an aerodrome where the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching,

(b) unless it is equipped with life jackets equipped with a survivor locator light, for each person on board. Each life jacket must be stowed in a position easily accessible from the seat or berth of the person for whose use it is provided. Life jackets for infants should be carried when infants are transported, these may be substituted by other approved flotation devices equipped with a survivor locator light.

(c) Seaplanes and amphibians. The Operator shall not operate a seaplane or an amphibian on water unless it is equipped with life jackets equipped with a survivor locator light, for each person on board. Each life jacket must be stowed in a position easily accessible from the seat or berth of the person for whose use it is provided. Life jackets for infants may be substituted by other approved flotation devices equipped with a survivor locator light.

BCAR-OPS 1.830 Life-rafts and survival ELTs for extended overwater flights

(See AMC OPS 1.830(b) (2)
(See AMC OPS 1.830 (c)) and AMC OPS 1.830 (e))

(a) On overwater flights, The Operator shall not operate an aeroplane at a distance away from land, which is suitable for making an emergency landing, greater than that corresponding to:

(1) 120 minutes at cruising speed or 400 nautical miles, whichever is less, for aeroplanes capable of continuing the flight to an aerodrome with the critical power unit(s) becoming inoperative at any point along the route or planned diversions; or

(2) 30 minutes at cruising speed or 100 nautical miles, whichever is less, for all other aeroplanes, unless the equipment specified in subparagraphs (b) and (c) below is carried.

(b) Sufficient life rafts to carry all persons on board. Unless excess rafts of enough capacity are provided, the buoyancy and seating capacity beyond the rated capacity of the rafts must accommodate all occupants of the aeroplane in the event of a loss of one raft of the largest rated capacity. The life-rafts shall be equipped with:

(1) A survivor locator light; and

(2) Lifesaving equipment including means of sustaining life as appropriate to the flight to be undertaken (See AMC OPS 1.830(b) (2)); and

(c) equipment for making the pyrotechnical distress signals described in the Rules of the Air;

(d) at the earliest practicable date, but not later than 1 January 2018, on all aeroplanes of a maximum certificated take-off mass of over 27 000 kg, a securely attached underwater locating device operating at a frequency of 8.8 kHz. This automatically activated underwater locating device shall operate for a minimum of 30 days and shall not be installed in wings or empennage.

(See AMC OPS 1.835)
(See AMC OPS 1.835(c))

The Operator shall not operate an aeroplane across areas in which search, and rescue would be especially difficult unless it is equipped with the following:

(a) Signalling equipment to make the pyrotechnical distress signals described in the appropriate regulation related to rules of the air;

(b) At least one ELT(S) capable of transmitting on the distress frequencies prescribed in ICAO Annex 10, Volume V, Chapter 2 (See AMC OPS 1.820); and

(c) Additional survival equipment for the route to be flown taking account of the number of persons on board (See AMC OPS 1.835), except that the equipment specified in subparagraph (c) need not be carried when the aeroplane either:

(1) Remains within a distance from an area where search and rescue are not especially difficult corresponding to:

(i) 120 minutes at the one engine inoperative cruising speed for aeroplanes capable of continuing the flight to an aerodrome with the critical power unit(s) becoming inoperative at any point along the route or planned diversions; or

(ii) 30 minutes at cruising speed for all other aeroplanes.

(d) For aeroplanes certificated in accordance with the CS-25 or FAR 25 certification specifications or equivalent, accepted as per the certification regulations and the appropriate acceptance of aeronautical products, no greater distance than that corresponding to 90 minutes at cruising speed from an area suitable for making an emergency landing.

BCAR- OPS 1.837 Electronic flight bags (EFB)

(a) Where portable EFBs are used on board an aeroplane, the operator shall ensure that they do not affect the performance of the aeroplane systems, equipment, or the ability to operate the aeroplane.

(b) Where EFBs are used on board an aeroplane the operator shall:

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

(2) establish and document the procedures for the use of, and training requirements for, the device and each EFB function; and

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

(c) Operational approval

The BDCA shall approve the operational use of EFB functions to be used for the safe operations of aeroplanes.

(d) In approving the use of EFBs, the BDCA shall ensure that:

(1) the EFB equipment and its associated installation hardware, including interaction with aeroplane systems if applicable, meet the appropriate airworthiness certification requirements;

(2) the operator has assessed the safety risks associated with the operations supported by the EFB function(s);

(3) the operator has established requirements for redundancy of the information (if appropriate) contained in and displayed by the EFB function(s);

(4) the operator has established and documented procedures for the management of the EFB function(s) including any database it may use; and

(5) the operator has established and documented the procedures for the use of, and training requirements for the EFB and the EFB function(s).

BCAR-OPS 1.838 Turbine Aeroplane - Runway Overrun Awareness And Alerting System (*ROAAS*)

All turbine-engine aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 2026, shall be equipped with a runway overrun awareness and alerting system (ROAAS).

BCAR-OPS 1.840 Seaplanes and amphibians Miscellaneous equipment

(See AMC 1.840)

(a) The Operator shall not operate a seaplane or an amphibian on water unless it is equipped with:

(1) one life jacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided; ; A sea anchor and other equipment necessary to facilitate mooring, anchoring, or manoeuvring the aeroplane on water, appropriate to its size, weight and handling characteristics; and

(2) Equipment for making the sound signals prescribed in the International Regulations for preventing collisions at sea, where applicable.

(3) Floating Anchor.

BCAR- OPS 1.843 Cabin altitude warning system

Pressurised aeroplanes intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa (above 7 600 m or 25000 ft.) shall be equipped with a device to provide a distinctive and positive warning to the pilot of any dangerous loss of pressurisation.

BCAR- OPS 1.844 Aeroplanes equipped with automatic landing systems, a head-up display (HUD) or equivalent displays, enhanced vision systems (EVS), synthetic vision systems (SVS) and/or combined vision systems (CVS)

(See AMC OPS 1.844)

(a) Where aeroplanes are equipped with automatic landing systems, a HUD, or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, the use of such systems for the safe operation of an aeroplane shall be approved by the BDCA.

(b) In approving the operational use of automatic landing systems, a HUD, or equivalent displays, EVS, SVS or CVS, the State of the Operator shall ensure that:

(1) the equipment meets the appropriate airworthiness certification requirements;

(2) the operator has carried out a safety risk assessment of the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS;

(3) the operator has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD, or equivalent displays, EVS, SVS or CVS.

Appendix 1 to BCAR-OPS 1.640 Lights to be displayed by aeroplanes.

(a). Terminology

When the following terms are used in this Appendix, they have the following meanings:

Angles of coverage

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

Making way. An aeroplane on the surface of the water is “making way” when it is under way and has a velocity relative to the water.

Under command. An aeroplane on the surface of the water is “under command” when it can execute manoeuvres as required by the International Regulations for Preventing Collisions at Sea for the purpose of avoiding other vessels.

Longitudinal axis of the aeroplane. A selected axis parallel to the direction of flight at a normal cruising speed and passing through the centre of gravity of the aeroplane.

Under way. An aeroplane on the surface of the water is “under way” when it is not aground or moored to the ground or to any fixed object on the land or in the water.

Horizontal plane. The plane containing the longitudinal axis and perpendicular to the plane of symmetry of the aeroplane.

Vertical planes. Planes perpendicular to the horizontal plane.

Visible. Visible on a dark night with a clear atmosphere.

(b). Navigation lights to be displayed in the air.

The lights specified herein are intended to meet the requirements of Annex 2 for navigation lights.
As illustrated in Figure 1, the following unobstructed navigation lights shall be displayed:

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

(3). a white light projected above and below the horizontal plane rearward through angle of coverage A.

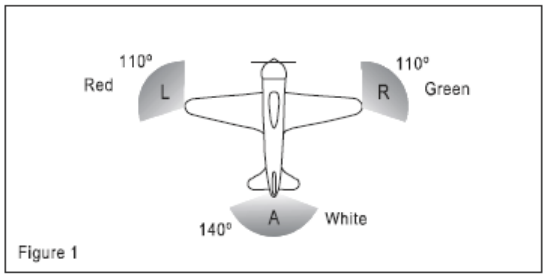


Figure 1

(c). Lights to be displayed by aeroplane on the water.

(1). General

Note. The lights specified herein are intended to meet the requirements of **Annex 2** for lights to be displayed by aeroplanes on the water.

The International Regulations for Preventing Collisions at Sea require different lights to be displayed in each of the following circumstances:

(i). when under way;
(ii). when towing another vessel or aeroplane;
(iii). when being towed;
(iv). when not under command and not making way;
(v). when making way but not under command;
(vi). when at anchor;
(vii). when aground.

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

(2). When under way, as illustrated in **Figure 2**, the following appears as steady unobstructed lights:

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

The lights described in (i), (ii) and (iii) should be visible at a distance of at least 3.7 km (2 NM). The light described in (2) (iv) should be visible at 9.3 km (5 NM) when fitted to an aeroplane of 20 m or more in length or visible at a distance of 5.6 km (3 NM) when fitted to an aeroplane of less than 20 m in length.

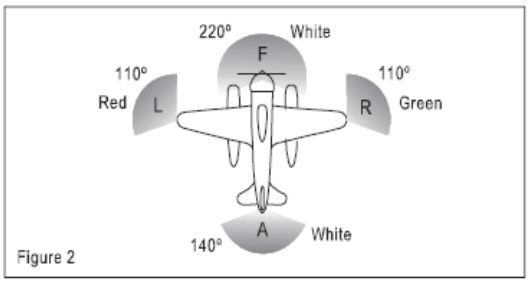


Figure 2

(3). When towing another vessel or aeroplane, as illustrated in Figure 3, the following appears as steady, unobstructed lights:

(i). the lights described in (2);
(ii). a second light having the same characteristics as the light described in (2)(iv) and mounted in a vertical line at least 2 m above or below it; and
(iii). a yellow light having otherwise the same characteristics as the light described in (2) (iii) and mounted in a vertical line at least 2 m above it.

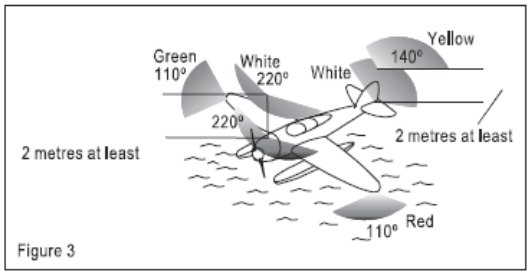


Figure 3

.

(4). When being towed, the lights described in (2)(i), (ii) and (iii) appear as steady, unobstructed lights.

(5). When not under command and not making way, as illustrated in **Figure 4**, two steady red lights must be placed where they can best be seen; one vertically over the other and not less than 1 m apart, and of such a character as to be visible all around the horizon at a distance of at least 3.7 km (2 NM).

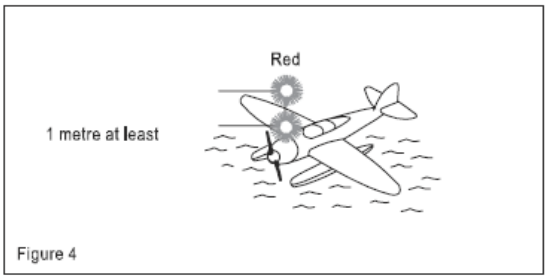


Figure 4

(6). When making way but not under command

As illustrated in Figure 5, the lights described in 5 plus the lights described in 2 (i), (ii) and (iii).

— The display of lights prescribed in 5 and 6 is to be taken by other aeroplane as signals that the aeroplane showing them is not under command and cannot therefore get out of the way. They are not signals of aeroplanes in distress and requiring assistance.

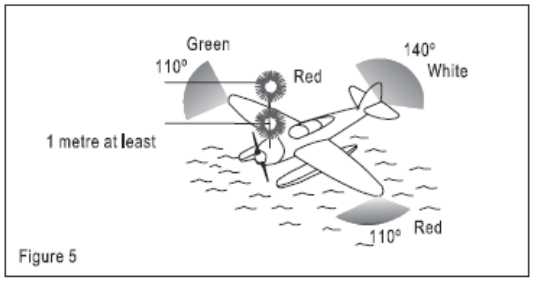


Figure 5

(7). When at anchor

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

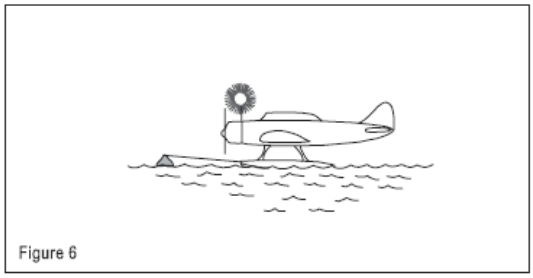


Figure 6

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

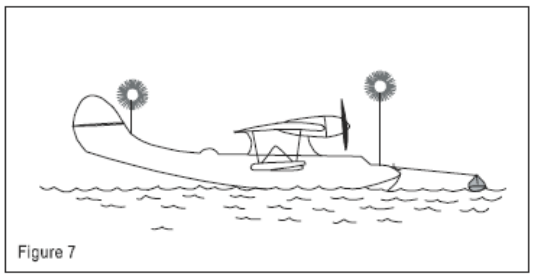
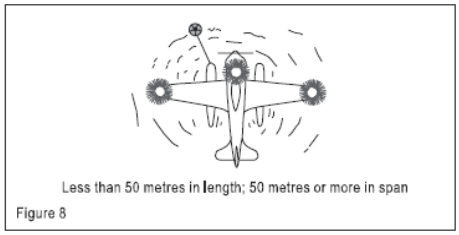


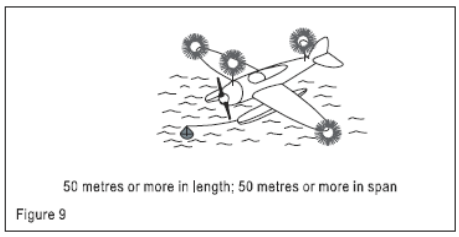
Figure 7

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



Less than 50 metres in length; 50 metres or more in span

Figure 8



50 metres or more in length; 50 metres or more in span

Figure 9

(8). When aground

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

Appendix 1 to BCAR OPS 1.697 Flight recorders

(a) The flight recorders required in this BCAR include the following systems:

(1) Four systems of crash protected flight data recorders:

(i) flight data recorder (FDR);
(ii) cockpit voice recorder (CVR);
(iii) airborne image recorder (AIR);
(iv) data link recorder (DLR); and

(2) four lightweight flight recorders:

(i) aeroplane data recording system (ADRS);
(ii) airborne imaging and recording system (AIRS);
(iii) cockpit audio recording system (CARS);
(iv) data link recording system (DLRS);

(b) General requirements non-deployable flight recorder containers shall:

(1) be painted a distinctive orange or yellow colour.
(2) carry reflective material to facilitate their location; and
(3) have securely attached an automatically activated underwater locating device operating at a frequency of 37.5 kHz. At the earliest practicable date, but not later than 1 January 2018, this device shall operate for a minimum of 90 days.

(c) Automatic deployable flight recorder containers shall:

(1) be painted a distinctive orange colour, however the surface visible from outside the aeroplane may be of another colour;
(2) carry reflective material to facilitate their location; and
(3) have an integrated automatically activated ELT.

(d) The flight recorder systems shall be installed so that:

(1) the probability of damage to the recordings is minimised;

(2) they receive electrical power from a bus that provides the maximum reliability for operation of the flight recorder systems without jeopardising service to essential or emergency loads;

(3) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly; and

(4) on aeroplanes first issued on or after January 1, 2023, a flight crew-actuated erase function is provided in the cockpit which, when activated, modify the recording of a CVR and an AIR in such a way that the information cannot be retrieved using normal playback or copying techniques. The installation will be designed in such a way that it cannot be activated during the flight. Also, the chance of inadvertently activating the wipe function during an accident will be minimized. The flight recorder systems, when tested by methods approved by the appropriate certificating authority, shall be demonstrated to be suitable for the environmental extremes over which they are designed to operate.

The erasure function is intended to prevent access to CVR and AIR records using normal means of reproduction or copying but would not prevent accident investigation authorities from accessing such records through specialized reproduction or copying techniques.

(e) Accident-protected flight recorders shall be installed so that they receive electrical power from a bus that offers maximum reliability for the operation of the flight recorders without compromising the service of essential or emergency loads. The manufacturer shall provide the appropriate certificating authority with the following information in respect of the flight recording systems.

(f) Lightweight flight recorders are connected to a power source that has characteristics that ensure proper and reliable recording in the operational environment.

(g) When the flight recorder systems are tested by the methods approved by the competent certifying authority, they must demonstrate that they are perfectly adapted to the extreme environmental conditions in which they are expected to operate. Means shall be provided to achieve accurate time correlation between the records of the flight recorder systems.

(h) The manufacturer must provide the appropriate certifying authority with the following information regarding flight recorder systems:

(1) manufacturer’s operating instructions, equipment limitations and installation procedures;

(2) parameter origin or source and equations which relate counts to units of measurement; and

(3) manufacturer’s test reports.

(4) Detailed information to ensure the continued serviceability of the flight recorder system.

The holder of the airworthiness approval for the installation design of the flight recorder system shall make available the relevant continuing airworthiness information to the operator of the aeroplane to be incorporated in the continuing airworthiness maintenance programme. This continuing airworthiness information shall cover in detail all the tasks required to ensure the continued serviceability of the flight recorder system.

(i) Automatic Detachable Flight Recorders (ADFR)

(1) Operation: the following requirements will apply to the ADFR

(i) the detachment will take place when the airframe has significantly deformed;

(ii) shedding will take place when the aircraft sinks into the water;

(iii) the ADFR may not be manually detached;

(iv) the ADFR shall be able to float on water;

(v) the detachment of the ADFR will not compromise the continuation of the flight in conditions of safety;

(vi) shedding of the ADFR will not significantly reduce the chances of survival of the recorder and of effective transmission by its ELT;

(vii) ADFR detachment will not release more than one piece;

(viii) the flight crew will be alerted when the ADFR has already detached from the aircraft;

(ix) The flight crew will not have the means to deactivate the ADFR shedding when the aircraft is in flight;

(x) The ADFR will contain an integrated ELT, which will activate automatically during the launch sequence. Said ELT may be of a type that is activated in flight and provides information from which position can be determined; and

(xi) The integrated ELT of an ADFR will meet the same requirements as the ELT to be installed on an aeroplane. The integrated ELT will have, at a minimum, the same performance as the fixed ELT to maximize detection of the transmitted signal.

TABLE 1
Parameter guidance for crash protected flight data recorders.

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
1	Time (UTC when available, otherwise relative time count or GPS time sync)	24 hours	4	±0,125% per hour	1 second
2	Pressure-altitude	–300 m (–1 000 ft.) to maximum certificated altitude of aeroplane +1 500 m (+5 000 ft.)	1	±30 m to ±200 m (±100 ft. to ±700 ft.)	1.5 m (5 ft.)
3	Indicated airspeed or calibrated airspeed	95 km/h (50 kt) to max V_{S0} (Note 1) V_{S0} a 1.2 V_D (Note 2)	1	±5%	1 kt (0.5 kt recommended)
4	Heading (primary flight crew reference)	360°	1	±2°	0.5°
5	Normal acceleration (Note 3)	-3 g to +6 g	0.125	±1% of maximum range excluding datum error of ±5%	0.004 g
6	Pitch attitude	±75° or usable range whichever is greater	+ 0.25	±2°	0.5°
7	Roll attitude	±180°	+ 0.25	±2°	0.5°
8	Radio transmission keying	On-off (one discrete)	1		
9	Power on each engine (Note 4)	Total	1 (per engine)	±2%	0.2% of full range or the resolution required to operate the aeroplane

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
10*	Trailing edge flap and cockpit control selection	Full range or each discrete position	2	±5% or as pilot's indicator	0.5% of full range or the resolution required to operate the aeroplane
11*	Leading edge flap and cockpit control selection	Full range or each discrete position	2	±5% or as pilot's indicator	0.5% of full range or the resolution required to operate the aeroplane
12*	Thrust reverser position	Stowed, in transit, and reverse	1 (Per engine)		
13*	Ground spoiler/speed brake selection (Selection and position)	Full range of ~~r~~each discrete position	1	±2% unless higher accuracy uniquely required	0.2% of full range
14	Outside air temperature	Sensor range	2	±2°C	0.3°C
15*	Autopilot/auto throttle/AFCS mode and engagement status	A suitable combination of discrete~~s~~	1		
16	Longitudinal acceleration (Note 3)	±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g
Note: The preceding 16 parameters satisfy the requirements for a Type II FDR.					
17	Lateral acceleration (Note 3)	±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g
18	Pilot input and/or control surface position-primary controls (pitch, roll, yaw) (Note 5) (Note 6)	Total	+0.25	±2° unless higher accuracy uniquely required	0.2% of full range or as installed
19	Pitch trim position	Total	1	±3% unless higher	0.3% of full range or as installed

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
				accuracy uniquely required	
20*	Radio altitude	–6 m to 750 m (–20 ft. to 2 500 ft.)	1	±0.6 m (±2 ft.) or ±3% whichever is greater below 150 m (500 ft.) and ±5% above 150 m (500 ft.)	0.3 m (1 ft.) below 150 m (500 ft.) ±5% above 150 m (500 ft.)
21*	Vertical beam deviation (ILS/GPS/GLS glide path, MLS elevation, IRNAV/IAN vertical deviation)	Signal range	1	±3%	0.3% of full range
22*	Horizontal beam deviation (ILS/GPS/GLS localiser, MLS azimuth, IRNAV/IAN lateral deviation)	Signal range	1	±3%	0.3% of full range
23	Marker beacon passage	Discrete	1		
24	Master warning	Discrete	1		
25	Each NAV receiver frequency selection (*Note 7*)	Total	4	As installed	
0.3 % of full range	DME 1 and 2 distance (includes Distance to runway threshold (GLS) and Distance to missed approach point (IRNAV/IAN))	0 – 370 km (0 – 200 NM)	4	As installed	1 852 m (1 NM)

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
	(Notes 7 and 8)				
27	Air/ground status	Discrete	1		
28*	GPWS/TAWS/GCAS status (selection of terrain display mode including pop-up display status) and (terrain alerts, both cautions and warnings, and advisories) and (on/off switch position)	Discrete	1		
29*	Angle of attack	Total	0.5	As installed	0.3% of full range
30*	Hydraulics, each system (low pressure)	Discrete	2		0.5% of full range
31*	Navigation data (latitude/longitude, ground speed and drift angle) (Note 9)	As installed	1	As installed	
32*	Landing gear and gear selector position	Discrete	4	As installed	
Note: The preceding 32 parameters satisfy the requirements for a Type I FDR.					
33*	Groundspeed	As installed	1	Data should be obtained from the most accurate system	1 kt.
34	Brakes (left and right brake pressure, left and right brake pedal position)	(Maximum metered brake range, discretes or full range)	1	±5%	2% of full range
35	Additional engine parameters (EPR,	As installed	Each engine each	As installed	2% of full range

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
	N_1, indicated vibration level, N_2, EGT, fuel flow, fuel cut-off lever position, N_3)		second		
36*	TCAS/ACAS (traffic alert and collision avoidance system)	Discrete	1	As installed	
37*	Wind shear warning	Discrete	1	As installed	
38*	Selected barometric setting (pilot, co-pilot)	As installed	64	As installed	0.1 mb (0.01 in-Hg)
39*	Selected altitude (all pilot selectable modes of operation)	As installed	1	As installed	Sufficient to determine crew selection
40*	Selected speed (all pilot selectable modes of operation)	As installed	1	As installed	Sufficient to determine crew selection
41*	Selected Mach (all pilot selectable modes of operation)	As installed	1	As installed	Sufficient to determine crew selection
42*	Selected vertical speed (all pilot selectable modes of operation)	As installed	1	As installed	Sufficient to determine crew selection
43*	Selected heading (all pilot selectable modes of operation)	As installed	1	As installed	Sufficient to determine crew selection
44*	Selected flight path (all pilot selectable modes of operation) (course/DSTRK, path angle, final approach path (IRNAV/IAN))		1	As installed	

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
45*	Selected decision height	As installed	64	As installed	Sufficient to determine crew selection
46*	EFIS display format (pilot, co-pilot)	Discrete	4	As installed	
47*	Multi-function/engine/alerts display format	Discrete	4	As installed	
48*	AC electrical bus status	Discrete	4	As installed	
49*	DC electrical bus status	Discrete	4	As installed	
50*	Engine bleed valve position	Discrete	4	As installed	
51*	APU bleed valve position	Discrete	4	As installed	
52*	Computer failure	Discrete	4	As installed	
53*	Engine thrust command	As installed	2	As installed	
54*	Engine thrust target	As installed	4	As installed	2% of full range
55*	Computed centre of gravity	As installed	64	As installed	1% of full range
56*	Fuel quantity in CG trim tank	As installed	64	As installed	1% of full range
57*	Head up display in use	As installed	4	As installed	
58*	Para visual display on/off	As installed	1	As installed	
59*	Operational stall protection, stick shaker and pusher activation	As installed	1	As installed	
60*	Primary navigation system reference (GNSS, INS, VOR/DME, MLS, Loran C, localiser glideslope)	As installed	4	As installed	
61*	Ice detection	As installed	4	As installed	
62*	Engine warning	As installed	1	As installed	

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
	each engine vibration				
63*	Engine warning each engine over temperature	As installed	1	As installed	
64*	Engine warning each engine oil pressure low	As installed	1	As installed	
65*	Engine warning each engine over speed	As installed	1	As installed	
66*	Yaw trim surface position	Total	2	±3% unless higher accuracy uniquely required	0.3% of full range
67*	Roll trim surface position	Total	2	±3% unless higher accuracy uniquely required	0.3% of full range
68*	Yaw or sideslip angle	Total	1	±5%	0.5°
69*	De-icing and/or anti-icing systems selection	Discrete	4		
70*	Hydraulic pressure (each system)	Total	2	±5%	100 psi.
71*	Loss of cabin pressure	Discrete	1		
72*	Cockpit trim control input position, Pitch	Total	1	±5%	0.2% of full range or as installed
73*	Cockpit trim control input position, Roll	Total	1	±5%	0.2% of full range or as installed
74*	Cockpit trim control input position, Yaw	Total	1	±5%	0.2% of full range or as installed
75*	All cockpit flight control input forces (control wheel, control column,	Full range (±311 N (±70 lbf), ± 378 N (±85	1	±5%	0.2% of full range or as installed

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
	rudder pedal)	lbf), ± 734 N (±165 lbf))			
76*	Event marker	Discrete	1		
77*	Date	365 days	64		
78*	ANP or EPE or EPU	As installed	4	As installed	
Note: The preceding 78 parameters satisfy the requirements for a Type IA.					
79*	Cabin altitude pressure	Certification request of type submitted to a contracting state on January 1, 2023 or after	Depending on installation (recommended 0ft to 40,000ft)	installed	100 ft
80*	Calculated weight of the aeroplane	Certification request of type submitted to a contracting state on January 1, 2023 or after	Depending on installation	64	1% of full range
81*	Flight director system control	Certification request of type submitted to a contracting state on January 1, 2023 or after	Total	± 2°	0.5°
82*	Vertical speed	Certification request of type submitted to a	0,25 Depending on installation	According to installation (recommended	16 ft/min

Serial number	Parameter	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)	Recording resolution
		contracting state on January 1, 2023 or after		32ft/min	

1. V_{S0} stalling speed or minimum steady flight speed in the landing configuration.
2. V_D design diving speed.
3. Refer to BCAR OPS 1.715 (d) for increased recording requirements.
4. Record sufficient inputs to determine power.
5. For aeroplanes with control systems in which movement of a control surface will back drive the pilot's control, ''or'' applies. For aeroplanes with control systems in which movement of a control surface will not back drive the pilot's control, ''and'' applies. In aeroplanes with split surfaces, a suitable combination of inputs is acceptable instead of recording each surface separately.
6. Refer to BCAR OPS 1.715 (e) for increased recording requirements.
7. If the signal is available in digital form.
8. Recording of latitude and longitude from INS or other navigation system is a preferred alternative.
9. If signals are readily available.
10. It is not the intention that airplanes with an individual certificate of airworthiness, should be modified to conform to the measurement interval, the maximum sampling and recording interval, the precision limits or the description of the resolution. of the detailed record.

TABLE 2
Description of applications for data link recorders

Item No.	Application type	Application description	Recording content
1	Data link initiation	This includes any applications used to log on to or initiate data link service. In FANS-1/A and ATN, these are ATS facilities notification (AFN) and context management (CM) respectively.	C
2	Controller/pilot communication	This includes any application used to exchange requests, clearances, instructions and reports between the flight crew and controllers on the ground. In FANS-1/A and ATN, this includes the CPDLC application. It also includes applications used for the exchange of oceanic (OCL) and departure clearances (DCL) as well as data link delivery of taxi clearances.	C
3	Addressed surveillance	This includes any surveillance application in which the ground sets up contracts for the delivery of surveillance data. In FANS-1/A and ATN, this includes the automatic dependent surveillance — contract (ADS-C) application. Where parametric data are reported within the message, they shall be recorded unless data from the same source are recorded on the FDR.	C
4	Flight information	This includes any service used for the delivery of flight information to the specific aeroplane. This includes, for example, data link aviation weather report service (D-METAR), data link-automatic terminal service (D-ATIS), digital Notice to Airmen (D-NOTAM) and other textual data link services.	C
5	Aeroplane broadcast surveillance	This includes elementary and enhanced surveillance systems, as well as automatic dependent surveillance — broadcast (ADS-B) output data. Where parametric data sent by the aeroplane are reported within the message, they shall be recorded unless data from the same source are recorded on the FDR.	M*
6	Aeronautical operational control data	This includes any application transmitting or receiving data used for aeronautical operational control purposes (per the ICAO definition of operational control).	M*

Key:

C: Complete contents recorded.

M: Information that enables correlation to any associated records stored separately from the aeroplane.

*: Applications to be recorded only as far as is practicable given the architecture of the system.

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TABLE 3
Parameter guidance for aeroplane data recording system

Item No.	Parameter name	Parameter category	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
1	Heading (Magnetic or True)	R*	±180°	1	±2°	0.5°	* If not available, record rates
2	Pitch attitude	E*	±90°	0.25	±2°	0.5°	* If not available, record rates
3	Roll attitude	E*	±180°	0.25	±2°	0.5°	* If not available, record rates
4	Yaw rate	E*	±300°/s	0.25	±1% + drift of 360°/hr	2°/s	* Essential if no heading available
5	Pitch rate	E*	±300°/s	0.25	±1% + drift of 360°/hr	2°/s	* Essential if no pitch attitude available
6	Roll rate	E*	±300°/s	0.25	±1% + drift of 360°/hr	2°/s	* Essential if no roll attitude available
7	Positioning system: latitude/longitude	E	Latitude: ±90° Longitude: ±180°	2 (1 if available)	As installed (0.00015 degree recommended)	0,00005°	
8	Positioning system estimated error	E*	Available range	2 (1 if available)	As installed	As installed	* If available
9	Positioning system: altitude	E	–300 m (–1 000 ft.) to maximum certificated altitude of aeroplane +1 500 m (5 000 ft.)	2 (1 if available)	As installed (±15 m (±50 ft.) recommended)	1.5 m (5 ft.)	
10	Positioning system: time*	E	24 hours	1	±0.5 second	0.1 seconds	* UTC time preferred where available.

11	Positioning system: ground speed	E	0-1000 kt	2 (1 if available)	As installed (±5 kt recommended)	1 kt	
12	Positioning system: channel	E	0-360°	2 (1 if available)	As installed (± 2 degrees recommended)	0.5°	
13	Normal acceleration	E	-3 g to +6 g(*)	0.25 (0.125 if available)	As installed (± 0.09 g excluding a datum error of ±0.45 g recommended)	0.004 g	
14	Longitudinal acceleration	E	±1 g(*)	0.25 (0.125 if available)	As installed (± 0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
15	Lateral acceleration	E	±1 g(*)	0.25 (0.125 if available)	As installed (± 0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	

16	External static pressure (or pressure altitude)	R	34.4 mb (3.44 in-Hg) to 310.2 mb (31.02 in-Hg) or available sensor range	1	As installed (±1 mb (0.1 in-Hg) or ±30 m (±100 ft.) to ±210 m (±700 ft.) recommended)	0.1 mb (0.01 in-Hg) or 1.5 m (5 ft.)	
17	Outside air temperature (or total air temperature)	R	–50° to +90°C or available sensor range	2	As installed (±2°C recommended)	1°C	
18	Indicated air speed	R	As the installed pilot display measuring system or available sensor range	1	As installed (±3°C recommended)	1 kt (0.5 kt recommended)	
19	Engine RPM	R	Full range including overspeed condition	Each engine each second	As installed	0.2% of full range	
20	Engine oil pressure	R	Total	Each engine each second	As installed (5% of full range recommended)	2% of full range	
21	Engine oil temperature	R	Total	Each engine each second	As installed (5% of full range recommended)	2% of full range	
22	Fuel flow or pressure	R	Total	Each engine each second	As installed	2% of full range	
23	Manifold pressure	R	Total	Each engine each second	As installed	0.2% of full range	
24	Engine thrust/power/torque parameters required	R	Total	Each engine each second	As installed	0.1% of full range	* Sufficient parameters e.g. EPR/N1 or torque/Np as appropriate to the particular engine shall be recorded to determine power in

	to determine propulsive thrust/power*						both normal and reverse thrust. A margin for possible overspeed should be provided.
25	Engine gas generator speed (Ng)	R	0-150%	Each engine each second	As installed	0.2% of full range	
26	Engine gas generator speed (Nf)	R	0-150%	Each engine each second	As installed	0.2% of full range	
27	Coolant temperature	R	Total	1	As installed (±5°C recommended)	1°C	
28	Main voltage	R	Total	Each engine each second	As installed	1 Volt	
29	Cylinder head temperature	R	Total	Each cylinder each second	As installed	2% of full range	
30	Flaps position	R	Full range or each discrete position	2	As installed	0.5°	
31	Primary flight control surface position	R	Total	0.25	As installed	0.2% of full range	
32	Fuel quantity	R	Total	4	As installed	1% of full range	
33	Exhaust gas temperature	R	Total	Each engine each second	As installed	2% of full range	
34	Emergency voltage	R	Total	Each engine each second	As installed	1 Volt	
35	Trim surface position	R	Full range or each discrete position	Heading (Magnetic or True)	As installed	0.3 % of full range	
36	Landing gear position	R	Each discrete position*	Each gear every two seconds	As installed		* Where available, record up-andlocked and downand-locked position

37	Novel/unique aeroplane features	R	As required	As required	As required	As required	

References:
E: Essential parameters
R: Recommended parameters

AIRBORNE IMAGE RECORDER (AIR) AND AIRBORNE IMAGE RECORDING SYSTEM (AIRS)

(a) Classes

(1) A Class A AIR or AIRS captures the general cockpit area in order to provide data supplemental to conventional flight recorders.
To respect crew privacy, the cockpit area view may be designed as far as practical to exclude the head and shoulders of crew members whilst seated in their normal operating position.
(2) A Class B AIR or AIRS captures data link message displays.
(3) A Class C AIR or AIRS captures instruments and control panels.
A Class C AIR or AIRS may be considered as a means for recording flight data where it is not practical or is prohibitively expensive to record on an FDR or an ADRS, or where an FDR is not required.

(b) Operation The AIR or AIRS must start to record before to the aeroplane moving under its power and record continuously until the termination of the flight when the aeroplane is no longer capable of moving under its power. In addition, depending on the availability of electrical power, the AIR or AIRS must start to record as early as possible during the cockpit checks before engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

Appendix 2 to BCAR OPS 1. 697 Flight recorder Operation

(a) Inspections of flight recorder systems

(1) Before the first flight of the day, the built-in test features for the flight recorders and flight data acquisition unit (FDAU), when installed, shall be monitored by manual and/or automatic checks.
(2) FDR systems or ADRS, CVR systems or CARS, and AIR systems or AIRS shall have recording system inspection intervals of one year; subject to the approval from the BDCA, this period may be extended to two years provided these systems have demonstrated ~~–a~~ high integrity of serviceability and self-monitoring. DLR systems or DLRS shall have recording system inspection intervals of two years; subject to the approval from the BDCA, this period may be extended to four years provided these systems have demonstrated high integrity of serviceability and self-monitoring.

(3) Recording system inspections shall be carried out as follows:

(i) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;

(ii) the analysis of the FDR or ADRS shall evaluate the quality of the recorded data to determine if the bit error rate (including those errors introduced by the recorder, the acquisition unit, the source of the data on the aeroplane and by the tools used to extract the data from the recorder) is within acceptable limits and to determine the nature and
distribution of the errors;

(iii) a complete flight recording from the FDR or ADRS shall be examined in engineering units to evaluate the validity of all recorded parameters. Particular attention shall be given to parameters from sensors dedicated to the FDR or ADRS. Parameters taken from the aeroplane's electrical bus system need not be checked if their serviceability can be detected by other aeroplane systems;

(iv) the readout facility shall have the necessary software to accurately convert the recorded values to engineering units and to determine the status of discrete signals;

(v) an examination of the recorded signal on the CVR or CARS shall be carried out by replay of the CVR or CARS recording. While installed in the aeroplane, the CVR or CARS shall record test signals from each aeroplane source and from relevant external sources to ensure that all required signals meet intelligibility standards;

(vi) where practicable, during the examination, a sample of in-flight recordings of the CVR or CARS shall be examined for evidence that the intelligibility of the signal is acceptable; and

(vii) an examination of the recorded images on the AIR shall be carried out by replay of the AIR recording. While installed in the aeroplane, the AIR shall record test images from each aeroplane source and from relevant external sources to ensure that all required images meet recording quality standards.

(4) A flight recorder system shall be considered unserviceable if there is a significant period of poor quality data, unintelligible signals, or if one or more of the mandatory parameters is not recorded correctly.

(5) A report of the recording system inspection shall be made available on request to regulatory authorities for monitoring purposes.

(6) Calibration of the FDR system:

(i) for those parameters which have sensors dedicated only to the FDR and are not checked by other means, recalibration shall be carried out at least every five years or following the recommendations of the sensor manufacturer to determine any

discrepancies in the engineering conversion routines for the mandatory parameters and to ensure that parameters are being recorded within the calibration tolerances; and

(ii) (ix) when the parameters of altitude and airspeed are provided by sensors that are dedicated to the FDR system, there shall be a recalibration performed as recommended by the sensor manufacturer, or at least every two years.

Appendix 1 to BCAR OPS 1.700 Cockpit voice recorder (CVR) and cockpit audio recording system (CARS)

The CVR and CARS shall start to record prior to the aeroplane moving under its own power and record continuously until the termination of the flight when the aeroplane is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the CVR and CARS shall start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

(a) cockpit voice recorder (CVR):
(1) The CVR shall record on four separate channels, or more, at least the following:

i. voice communication transmitted from or received in the aeroplane by radio;

ii. aural environment on the flight deck;

iii. voice communication of flight crew members on the flight deck using the aeroplane's interphone system, if installed;

iv. voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and

v. voice communication of flight crew members using the passenger address system, if installed.

(b) The CARS shall record on two separate channels, or more, at least the following:

(1) voice communication transmitted from or received in the aeroplane by radio;
(2) aural environment on the flight deck; and
(3) voice communication of flight crew members on the flight deck using the aeroplane's interphone system, if installed.

(c) The CVR shall be capable of recording on at least four channels simultaneously. On a tape-based CVR, to ensure accurate time correlation between channels, the CVR is to record in an in-line format. If a bi-directional configuration is used, the in-line format and channel allocation shall be retained in both directions.

(d) The preferred CVR channel allocation shall be as follows:

Channel 1 — co-pilot headphones and live boom microphone
Channel 2 — pilot headphones and live boom microphone
Channel 3 — cockpit area microphone
Channel 4 — time reference plus the third and fourth crew members' headphone and live microphone, if applicable.

(e) The preferred audio assignment for CARS must be the following:

(1) oral communications
(2) cockpit sound environment.

Appendix 1 to BCAR OPS 1.715 Flight data recorder (FDR) and Automatic deployable flight recorder (ADRS)

(a) Flight data recorder (FDR) The flight data recorder shall start to record before the aeroplane moving under its own power and record continuously until the termination of the flight when the aeroplane is no longer capable of moving under its own power.

(b) Parameters to be recorded:

(1) The parameters that satisfy the requirements for FDR are listed in Table 1 of Appendix 1 to BCAR OPS 1.697. The number of parameters to be recorded will depend on the complexity of the aircraft. Parameters that do not have an asterisk (*) are mandatory and must be recorded, regardless of the complexity of the aircraft. In addition, parameters indicated with an asterisk (*) will be recorded if the airplane systems or flight crew use a data source of information about the parameter for the operation of the airplane. However, these parameters may be replaced by others taking into consideration the type of aircraft and the characteristics of the recording equipment. The parameters that satisfy the requirements for FDRs are listed in the paragraphs below. The number of parameters to be recorded shall depend on aeroplane complexity. The parameters without an asterisk (*) are mandatory parameters which shall be recorded regardless of aeroplane complexity. In addition, the parameters designated by an asterisk (*) shall be recorded if an information data source for the parameter is used by aeroplane systems or the flight crew to operate the aeroplane. However, other parameters may be substituted with due regard to the aeroplane type and the characteristics of the recording equipment.

(2) If additional FDR logging capacity is available, logging of the following supplemental information should be considered:

(a)Operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM), and engine parameter and crew alert system (EICAS). Use the following priority order:

i. Parameters selected by the flight crew in relation to the desired flight path, for example, barometric pressure setting, selected altitude, selected airspeed, decision height, and guidance system mode and engagement indications. autopilot, if not recorded from another source;

ii. Selection/condition of display system, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY;

iii. warnings and alerts;

iv. The identity of the pages displayed for the purpose of emergency procedures and checklists;

(c)Retardation information including brake application for use in the investigation of landing overruns and rejected take-offs.

(3) The parameters that qualify for flight path and speed data displayed by the pilot(s) are as follows. Parameters without an asterisk (*) are parameters that must be registered. In addition, parameters with an asterisk (*) will be recorded if the pilot displays a source of the information related to the parameter and if it is feasible to record them:

(i) Pressure-altitude

(ii) Indicated airspeed or calibrated airspeed

(iii) Heading (primary flight crew reference)

(iv) Pitch attitude

(v) Roll attitude

(vi) Engine thrust/power

(vii) Landing-gear status*

(viii) Total or outside air temperature*

(ix) Time*

(x) Navigation data*: drift angle, wind speed, wind direction, latitude/longitude

(xi) Radio altitude*

(4) The parameters that satisfy the requirements for ADRS are the first 7 parameters in Table 3. If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table 3 shall be considered. Parameters to be recorded ADRS shall be capable of recording, as appropriate to the aeroplane, at least the essential (E) parameters in Table 3 of Appendix 1 to BCAR OPS 1.697.

(5) Additional information. The measurement range, recording interval and accuracy of parameters on installed equipment is usually verified by methods approved by the appropriate certificating authority.

(6) Documentation concerning parameter allocation, conversion equations, periodic calibration and other serviceability/maintenance information shall be maintained by the operator. The documentation needs to be sufficient to ensure that accident investigation authorities have the necessary information to read out the data in engineering units.

Appendix 1 to BCAR OPS 1.725 Data link recorder (DLR)

(a) Applications to be recorded

(1) Where the aeroplane flight path is authorised or controlled through the use of data link messages, all data link messages, both uplinks (to the aeroplane) and downlinks (from the aeroplane), shall be recorded on the aeroplane. As far as practicable, the time the messages were displayed to the flight crew and the time of the responses shall be recorded.

Sufficient information to derive the content of the data link communications message and the time the messages were displayed to the flight crew is needed to determine an accurate sequence of events on board the aeroplane.

(2) Messages applying to the applications listed below shall be recorded. Applications without the asterisk (*) are mandatory applications which shall be recorded regardless of the system complexity. Applications with an (*) shall be recorded only as far as is practicable given the architecture of the system.

Descriptions of the applications are contained in Table 2 of Appendix 1 to BCAR OPS 1.697.

Appendix 1 to *BCAR*-OPS 1.726 Flight Crew-Machine Interface Records

(a) When to start and stop logging

The AIR or AIRS will begin recording before the aircraft begins to move under its own power and will continue to record until the end of the flight, when the aircraft can no longer move under its own power. In addition, depending on the availability of electrical power, the AIR or AIRS will begin recording as soon as possible during the cockpit check prior to engine start, at the beginning of the flight, and until the cockpit checks at the end of the flight. the flight, immediately after the engine is turned off.

(b) Classes

1. An AIR or Class A AIRS captures the general area of the cockpit to provide supplemental data to that of conventional flight recorders.

2. An AIR or AIRS Class B captures the images of the data link messages.

3. An AIR or AIRS Class C captures images of dashboards and instruments.

(c) Application to be registered

1) The operation of the switches and selectors and the information displayed to the flight crew on the electronic displays will be captured by sensors or other electronic means.

2) Records of the operation of switches and selectors by the flight crew will include the following:

— any switch or selector that affects the operation and navigation of the aircraft; Y
— the selection of normal and standby systems.

3) Records of the information displayed to the flight crew on electronic displays will include:

— Main flight and navigation displays;
— Aircraft systems monitoring screens;
— engine parameter display screens;
— Traffic, terrain and weather displays;
— Crew alert system screens;
— reserve instruments; Y
— EFBs installed, to the extent practical.

4) If image sensors are used, the recordings of such images shall not capture the heads and shoulders of the flight crew members when they are seated in their normal operating position.

Appendix 1 to BCAR-OPS 1.770 Oxygen - Minimum Requirements for Supplemental Oxygen for Pressurised Aeroplanes

	See (a)
SUPPLY FOR:	DURATION AND CABIN PRESSURE ALTITUDE
1. All occupants of flight deck seats on flight deck duty	Entire flight time when the cabin pressure altitude exceeds 13 000 ft. and entire flight time when the cabin pressure altitude exceeds 10 000 ft. but does not exceed 13 000 ft. after the first 30 minutes at those altitudes, but in no case less than: (i) 30 minutes for aeroplanes certificated to fly at altitudes not exceeding 25 000 ft. (See (b) of this appendix) (ii) 2 hours for aeroplanes certificated to fly at altitudes more than 25 000 ft. (See (c) of this appendix).
2. All required cabin crew members	Entire flight time when cabin pressure altitude exceeds 13 000 ft. but not less than 30 minutes (See (b) of this appendix) and entire flight time when cabin pressure altitude is greater than 10 000 ft. but does not exceed 13 000 ft. after the first 30 minutes at these altitudes.
3. 100% of passengers (See (e) of this appendix)	Entire flight time when the cabin pressure altitude exceeds 15 000 ft. but in no case less than 10 minutes. (See (d) of this appendix).
4. 30% of passengers (See (e) of this appendix)	Entire flight time when the cabin pressure altitude exceeds 14 000 ft. but does not exceed 15 000 ft.
5. 10% of passengers (See (e) of this appendix)	Entire flight time when the cabin pressure altitude exceeds 10 000 ft. but does not exceed 14 000 ft. after the first 30 minutes at these altitudes.

(a) The supply provided must take account of the cabin pressure altitude and descent profile for the routes concerned.

(b) The required minimum supply is the quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certificated operating altitude to 10 000 ft. in 10 minutes and followed by 20 minutes at 10 000 ft.

(c) The required minimum supply is the quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certificated operating altitude to 10 000 ft. in 10 minutes and followed by 110 minutes at 10 000 ft. The oxygen required in BCAR-OPS 1.780(a) (1) may be included in determining the supply required.

(d) The required minimum supply is the quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certificated operating altitude to 15 000 ft. in 10 minutes.

(e) For this table, 'passengers' means passengers actually carried and includes infants.

Appendix 1 to BCAR-OPS 1.775 Supplemental oxygen for non-pressurised aeroplanes

Table 1

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

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

Appendix 1 to BCAR OPS 1.790 Hand fire extinguishers

Any extinguishing agent used in aircraft portable fire extinguishers:

a) must meet the minimum performance requirements of the State of Registry that apply;

b) will not be of a type listed in the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, which is listed in Annex A, Group II, of the Manual of the Montreal Protocol on Substances that Deplete the Ozone Layer Ozone, Eighth Edition.

Appendix 1 to BCAR-OPS 1.823 Location of an Aircraft in Distress
(See BCAR-OPS 1.823)

(a) Purpose and scope: The purpose of locating an aircraft in distress is to establish, to a reasonable extent, the accident site within a 6 NM radius.

(b) Operation:

1) An aeroplane in distress will automatically or manually activate the transmission of information from which the operator can determine its position and information relative to the position will contain a timestamp. This transmission can also be activated manually. The system used for the autonomous transmission of position information shall be capable of transmitting said information in the event of a power failure to the aircraft, for at least the full expected duration of the flight.

2) An aeroplane is in a dangerous situation when it is in a state that could give rise to an accident if the event related to its action is not corrected. The automatic transmission of position information will be active when an aircraft is in a dangerous situation. This will increase the probability of locating the accident site within a 6 NM radius. The operator will be alerted when an aircraft is in a dangerous situation with a low percentage of false alerts. In case of activation of a transmission system, the initial transmission on the position will begin immediately or no later than five seconds after the activation event is detected.

3) When an aeroplane operator or an air traffic services unit (ATSU) has reason to believe that an aircraft is in distress, coordination will be established between the two.

4) The BDCA will determine the organizations that need to have the information regarding the position of the aircraft in the emergency phase. These organizations shall include, at a minimum:

(i) air traffic services unit(s) (ATSU);

(ii) SAR rescue coordination centre(s) (RCC) and other secondary centers.

5) When the autonomous transmission of position information has been activated, it can only be deactivated using the same mechanism that activated it.

6) The accuracy of position information shall, as a minimum, meet the position accuracy requirements prescribed for ELTs.

SUBPART L – COMMUNICATION AND NAVIGATION EQUIPMENT

BCAR-OPS 1.845 General introduction

(a) The Operator shall ensure that a flight does not commence unless the communication and navigation equipment required under this Subpart is:

(1) Approved and installed in accordance with the requirements applicable to them, including the minimum performance standard and the operational and airworthiness requirements;

(2) Installed such that the failure of any single unit required for either communication or navigation purposes, or both, will not result in the failure of another unit required for communications or navigation purposes.

(3) In operable condition for the kind of operation being conducted except as provided in the MEL (See BCAR-OPS 1.030); and

So arranged that if equipment is to be used by one flight crew member at his/her station during flight it must be readily operable from his/her station. When a single item of equipment is required to be operated by more than one flight crew member it must be installed so that the equipment is readily operable from any station at which the equipment is required to be operated.

(b) Communication and navigation equipment minimum performance standards are those prescribed in the applicable Joint Technical Standard Orders accepted by the authorities.

BCAR-OPS 1.848 Intentionally left blank

BCAR-OPS 1.850 Radio equipment

(a) The Operator shall not operate an aeroplane unless it is equipped with radio required for the kind of operation being conducted.

(b) Where two independent (separate and complete) radio systems are required under this Subpart, each system must have an independent antenna installation except that, where rigidly supported non-wire antenna or other antenna installations of equivalent reliability are used, only one antenna is required.

(c) The radio communication equipment required to comply with paragraph (a) above must also provide for communications on the aeronautical emergency frequency 121.5 MHz

BCAR-OPS 1.855 Audio selector panel

The Operator shall not operate an aeroplane under IFR unless it is equipped with an audio selector panel accessible to each required flight crew member.

BCAR-OPS 1.860 Radio equipment for operations under VFR over routes by reference to visual landmarks

The Operator shall not operate an aeroplane under VFR over routes that can be navigated by reference to visual landmarks, unless it is equipped with the radio communication equipment necessary under normal operating conditions to fulfil the following:

(a) Communicate with appropriate ground stations;

(b) Communicate with appropriate air traffic control facilities from any point in controlled airspace within which flights are intended;

(c) Receive meteorological information at any time during flight; and

(d) SSR transponder equipment in accordance with BCAR OPS 1.866

BCAR-OPS 1.865 Communication and navigation equipment for operations under IFR or VFR over routes not navigated by reference to visual landmarks
(See AMC OPS 1.865)
(See AMC OPS 1.865(c) (1)(i))

(a) The Operator shall not operate an aeroplane under IFR, or under VFR over routes that cannot be navigated by reference to visual landmarks, unless:

(1) the aeroplane is equipped with radio communication and navigation equipment in accordance with the requirements of air traffic services in the area(s) of operation.; and

(2) it is allowed to proceed with the operational flight plan.

(b) *Radio equipment*. The Operator shall ensure that radio equipment comprises not less than:

(1) Two independent radio communication systems necessary under normal operating conditions to communicate with an appropriate ground station from any point on the route including diversions.

(2) SSR transponder equipment as required for the route being flown.

(c) *Navigation equipment*. The Operator shall ensure that navigation equipment:

(1) Comprises not less than:

(i) One VOR receiving system, one ADF system, one DME system;

(ii) One ILS or MLS where ILS or MLS is required for approach navigation purposes;

(iii) One marker beacon receiving system where a marker beacon is required for approach navigation purposes;

(iv) An area navigation system when area navigation is required for the route being flown;

(v) An additional DME system on any route, or part thereof, where navigation is based only on DME signals;

(vi) An additional VOR receiving system on any route, or part thereof, where, navigation is based only on VOR signals; and

(vii) An additional ADF system on any route, or part thereof, where navigation is based only on NDB signals, or

(2) For operations for which a PBN specification has been prescribed, the following requirements shall be met:

(i) Have the navigation equipment to operate in accordance with the prescribed navigation specifications; and

(ii) Be authorised by the BDCA to conduct these operations.

(iii) It will have the information related to the aeroplanes navigation specification capabilities that are included in the MEL (minimum equipment list).

(d) The Operator may operate an aeroplane that is not equipped with the navigation equipment specified in subparagraph(s) (c)(1)(vi) and/or (c)(1)(vii) above, provided that it is equipped with alternative equipment authorised, for the route being flown, by the BDCA. The reliability and the accuracy of alternative equipment must allow safe navigation for the intended route.

(e) The aeroplane shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane to navigate in accordance with subparagraph (a) above.

BCAR-OPS 1.866 Transponder equipment

(a) All aeroplanes are equipped with a pressure altitude reporting transponder operating in accordance with the relevant provisions in Annex 10, Volume IV.

(b) All aeroplanes for which the individual certificate of airworthiness is first issued mustbe equipped with a data source that provides pressure-altitude information with a resolution of 7.62 m (25 ft.), or better;

(c) all aeroplanes shall be equipped with a data source that provides pressure-altitude information with a resolution of 7.62 m (25 ft.), or better;

BCAR-OPS 1.867 Surveillance equipment

(a) Surveillance equipment will be provided to airplanes so that they can carry out operations in accordance with the requirements of air traffic services.

(b) For operations in which surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), the airplane, in addition to the requirements of paragraph (a).

1) It will be equipped with surveillance equipment that allows it to function in accordance with the prescribed RSP specification(s);

2) It will have information related to the functional capabilities of the airplane with respect to the RSP specifications that are listed in the flight manual or in other documentation of the airplane
approved by the State of Design and accepted by the BDCA.

3) It will have the information related to the functional capabilities of the aircraft of the RSP specification that are included in the MEL (Minimum Equipment List).

(c) With respect to operations for which an RSP specification has been prescribed for the PBS, the BDCA ensures that the operator has established and documented:

1) Procedures for normal and abnormal situations, as well as contingency procedures

2) Flight crew qualification and competency requirements, in accordance with approved RSP specifications.

3) A training program for relevant personnel that corresponds to the intended operations;

4) Appropriate maintenance procedures to ensure continued airworthiness, in accordance with the appropriate RSP specifications.

(d) With respect to the aircraft mentioned in paragraph (b), the BDCA will ensure that there are appropriate provisions for:

(1) Receive reports of the surveillance performance observed issued by the programs established in accordance with Annex 11.

(2) Take prompt corrective action for each aircraft, aircraft type, or operator determined in such reports to be non-compliant with RSP specifications.

(e) The installation of the equipment shall be such that the failure of any one unit required for communications, navigation, or surveillance purposes, or any combination of those purposes, will not cause a failure of another unit required for such purposes.

BCAR-OPS 1.868 Additional navigation equipment for operations in airspace or required communication performance routes

(a) The Operator shall not operate an aeroplane in defined portions of airspace or on routes where communication equipment is required to meet an RCP specification for performance-based communication (PBC), unless:

(1) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specification;

(2) have information relevant to the aeroplane RCP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry;

(3) have information relevant to the aeroplane RCP specification capabilities included in the MEL; and

(4) be authorised by the BDCA or operations in such airspace.

(b) The Operator shall, for operations where an RCP specification for PBC has been prescribed, ensure that has established and documented:

(1) normal and abnormal procedures, including contingency procedures;

(2) flight crew qualification and proficiency requirements, in accordance with appropriate RCP specifications;

(3) a training programme for relevant personnel consistent with the intended operations; and

(4) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RCP specifications.

(c) The BDCA will make the arrangement with the appropriate entities, for

(1) receiving the reports of observed communication performance issued by monitoring programmes; and

(2) taking immediate corrective action for individual aeroplane, aeroplane types or operators, identified in such reports as not complying with the RCP specification.

BCAR-OPS 1.869 Navigation Equipment

(a) An aeroplane shall be provided with navigational equipment to enable it to proceed:

1) in accordance with its operational flight plan; and

2) in accordance with the requirements of air traffic services.

Except in the event that, if not excluded by the competent authority (air traffic services), navigation on flights that comply with the VFR is carried out by reference to characteristic points on the ground.

(b) The BDCA will ensure that, for operations in which the PBN navigation specification has been prescribed, the operator has established and documented:

1) normal and abnormal procedures, including contingency procedures;

2) requirements for flight crew qualifications and competencies, in accordance with appropriate navigation specifications;

3) a training program for relevant personnel, consistent with the intended operations; Y

4) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate navigation specifications.

(c) The BDCA will issue a specific approval for navigation specifications for PBN-based operations with authorization require (AR).

(d) For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, an aeroplane shall, in addition to the requirements in (a):

1. Be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specifications;

2. Have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other aeroplane documentation approved by the state of the Design or State of Registry;
3. Have information relevant to the aeroplane navigation specification capabilities included in the MEL.

BCAR-OPS 1.870 Additional navigation equipment for operation in MNPS airspace

(See AMC OPS 1.870)

(a) The Operator shall not operate an aeroplane in MNPS airspace unless it is equipped with navigation equipment that complies with minimum navigation performance specifications prescribed in ICAO Doc 7030 in the form of Regional Supplementary Procedures.

(b) The navigation equipment required by this paragraph must be visible and usable by either pilot seated at his/her duty station.

(c) The equipment shall provide continuous instructions to the flight crew on the path until reaching the required precision degree at any point along that path.

(d) For unrestricted operation in MNPS airspace, an aeroplane must be equipped with two independent Long Range Navigation Systems (LRNS).

(e) For operation in MNPS airspace along notified special routes, an aeroplane must be equipped with one Long Range Navigation System (LRNS), unless otherwise specified.

(f) The Operator shall not operate any aeroplane in designated MNPS airspace unless it has the corresponding MNPS operational approval issued by the BDCA that issued the AOC.

BCAR-OPS 1.872 Equipment for operation in defined airspace with reduced vertical **separation minima (RVSM)**

(See Annex 2 of Section 2 to BCAR OPS 1)

(a) For flights in defined parts of the airspace in which, based on regional air navigation agreements, a reduced vertical separation minimum (RVSM) of (1 000 ft) is applied between FL 290 and FL 410 inclusive.

1. The Operator shall ensure that aeroplanes operated in RVSM airspace are equipped to:

i. Indicate to the crew the flight level at which the aeroplane is flying;

ii. An altitude warning system indicating when a deviations from the selected flight level. The threshold for the alert shall not exceed ± 90 m (300 ft.);

iii. An automatic altitude control system; and

iv. automatically reporting pressure-altitude.

(b) The Operator shall not operate any aeroplane in RVSM airspace unless it has the corresponding RVSM approval issued by the BDCA, in compliance with Appendix 2 to section 2 of this BCAR OPS 1.

(c) Before issuing the RVSM authorization approval in accordance with paragraph (b) above, the BDCA must have verified that:

1. The vertical navigation performance capability of the aircraft satisfies the requirements specified in (Appendix 1 to BCAR OPS 1.241).

2. The operator has established adequate procedures with respect to ongoing airworthiness (maintenance and repair) practices and programs;

3. The operator has established adequate flight crew procedures for operations in RVSM airspace.

(d) The BDCA, if necessary, must ensure that, with respect to the aeroplanes mentioned in paragraph (a), there are adequate provisions for:

(1) receive the height-keeping performance reports issued by the surveillance organizations established in accordance with the Annex 11, chapter 3.

(2) take immediate corrective action for individual aircraft, or groups of aircraft types, that, as indicated in such reports, do not meet the height-keeping requirements for operations in airspace where RVSM is applied.

(e) An Operator issued a RVSM approval by the BDCA, must guarantee that a minimum of two airplanes of each group of aeroplane types of the operator are subject to height-keeping performance monitoring, at least once every two years, or at intervals of 1,000 flight hours per aeroplane, whichever period is longer. In the event that an operator's aircraft type groups consist of a single aeroplane, monitoring of that aeroplane shall be accomplished within the specified period.

(f) All States that are responsible for airspaces in which RVSM is applied, or that have issued specific RVSM approvals to operators within their State, shall establish provisions and procedures that guarantee that adequate measures will be adopted with respect to aircraft and operators that are operating in RVSM airspace without a valid RVSM authorization.

(g) The aeroplane shall be sufficiently provided with navigational equipment to ensure that, in the event of failure of one item of equipment in any phase of flight, the remaining equipment

will enable the aeroplane to navigate in accordance with 1.869(a) and, where applicable, with paragraph 1.865 (c) (2), and 1.872 (a)

BCAR-OPS 1.873 Equipment for flights in which it is intended to land in instrument meteorological conditions

(a) The Operator shall not operate an aeroplane intending to land in instrument meteorological conditions unless the aeroplane has the equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance for each aerodrome at which it is intended to land in instrument meteorological conditions and for any designated alternate aerodromes.

BCAR-OPS 1.874 Electronic navigation data management

(See AMC OPS 1.874)

(a) The Operator shall not employ electronic navigation data products that have been processed for application in the air and on the ground unless the BDCA or the State of the Operator has approved the operator's procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity and that the data are compatible with the intended function of the equipment that will use them. The operator shall monitor the process as well as the data by updating the information.

(b) The operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aeroplane that require it.

SUBPART M – AEROPLANE MAINTENANCE

BCAR-OPS 1.875 General

(See AMC OPS 1.875)

(a) The Operator shall not operate an aeroplane unless it is maintained and released to service by an BCAR-145 organisation appropriately approved/accepted in accordance with BCAR OPS 1.895 (e) except those pre-flight inspections need not necessarily be carried out by the BCAR-145 organisation. In this case, the inspection may be carried out by a qualified engineer with a highest-level valid licence issued by the State of Registry of the aeroplane. This engineer shall have the necessary rating or training in accordance with the operator's procedures for the type of aeroplane providing the service.

(b) This Subpart prescribes aeroplane maintenance requirements needed to comply with the operator certification requirements in BCAR-OPS 1.180.

BCAR-OPS 1.880 Terminology

(See AMC OPS 1.880(a))

The following definitions from BCAR-145 shall apply to this Subpart:

(a) Pre-flight inspection -- means the inspection carried out before flight to ensure that the aeroplane is fit for the intended flight. It does not include defect rectification. (See AMC OPS 1.880 (a)).

(b) When the word aeroplane is mentioned, it includes engines, propellers, components, accessories, instruments, equipment and apparatus, including emergency equipment.

BCAR-OPS 1.885 Application for an approval of the operator's maintenance system

(See AMC OPS 1.885 (a))

For the approval of the maintenance system of the operator, an applicant for the initial issue, variation and renewal of an AOC shall submit the documents specified in BCAR-OPS 1.185(b). (See AMC OPS 1.885(a)).

BCAR-OPS 1.887 Approval *of* Maintenance Organization

The BDCA will grant approval to Maintenance Organizations or recognition to Maintenance Organizations abroad when the applicant demonstrates compliance with the requirements established in BCAR 145.

BCAR-OPS 1.890 Maintenance responsibility

(See AMC OPS 1.890 (a)(1)(2)(3)(4)(5)(6)

(a) The Operator shall ensure the airworthiness of the aeroplane and the serviceability of both operational and emergency equipment by (See AMC OPS 1.890(a))

(1) The accomplishment of pre-flight inspections (See AMC OPS 1.890(a)(1)) and AMC OPS 1.880;

(2) The rectification to an approved standard of any defect and damage affecting safe operation, taking into account the minimum equipment list and configuration deviation list if available for the aeroplane type (See AMC OPS 1.890(a)(2));

(3) The accomplishment of all maintenance in accordance with the approved operator's aeroplane maintenance programme specified in BCAR-OPS 1.910 (See AMC OPS 1.890(a)(3));

(4) The analysis of the effectiveness of the operator's approved aeroplane maintenance programme (See AMC OPS 1.890(a)(4));

(5) The accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the BDCA. (See AMC OPS 1.890(a)(5)); and

(6) The accomplishment of modifications in accordance with an approved standard and, for non-mandatory modifications, the establishment of an embodiment policy (See AMC OPS 1.890(a) (6));

(b) The Operator shall ensure that the Certificate of Airworthiness for each aeroplane operated remains valid;

(c) The requirements specified in subparagraph (a) above must be performed in accordance with procedures acceptable to the BDCA.

(d) An operator shall not operate an aeroplane unless maintenance on the aeroplane, and any related engine, propeller, and parts, is performed by:

(1) The organization that complies with the provisions of BCAR 145, and is approved by the BDCA or by another contracting State and is accepted by the State of registration; either

(2) a person or organization in accordance with procedures authorized by the BDCA; and the maintenance release is available in relation to the maintenance carried out.

(e) When the state of registration accepts an equivalent system, the person who signs the approval of maintenance will be authorized to do so as established in the BCAR APL.

BCAR-OPS 1.893 Modifications and repairs

The operator will ensure that all modifications and repairs meet the airworthiness requirements that the BDCA considers acceptable and will establish procedures to ensure that the corroborating data that proves compliance with the airworthiness requirements is kept.

BCAR-OPS 1.895 Maintenance management

(See AMC-OPS 1.895 (a))
(See AMC-OPS 1.895 (b))
(See AMC-OPS 1.895 (c))
(See AMC-OPS 1.895 (d))
(See AMC-OPS 1.895 (e))
(See AMC-OPS 1.895 (f) & (g))
(See AMC-OPS 1.895 (h))

(a) The Operator must be appropriately approved in accordance with BCAR-145 to carry out the requirements specified in BCAR-OPS 1.890(a) (2), (3), (5) and (6) except that maintenance can be subcontracted to an approved/accepted BCAR-145 maintenance organisation according to the BDCA (See AMC OPS 1.895 (a)).

(b) The Operator must employ a person or group of persons acceptable to the BDCA to ensure that all maintenance is carried out on time to an approved standard such that the maintenance responsibility requirements prescribed in BCAR-OPS 1.890 are satisfied. The person, or accountable person as appropriate, is the Maintenance Manager referred to in BCAR-OPS 1.175(m). The operator's Maintenance Manager is also responsible for any corrective action resulting from the quality monitoring of BCAR-OPS 1.900(a). (See AMC OPS 1.895(b)).

(1) The Operator shall ensure that person or group of persons mentioned in paragraph (b) is trained in accordance with a training programme approved by the BDCA. This programme shall include initial and recurrent training appropriate for the tasks and responsibilities being assigned to this person or group of persons. In addition, this programme shall cover knowledge and abilities related to human performance (human factors).

(c) The operator's maintenance manager should not be employed by a BCAR-145 approved maintenance organisation under contract to the Operator. (See AMC OPS 1.895(c))

(d) When The Operator is not appropriately approved in accordance with BCAR-145, arrangements must be made with the BCAR-145 approved maintenance organisation to comply with the requirements specified in BCAR-OPS 1.890(a) (2), (3), (5) and (6). Except as otherwise specified in paragraphs (e), (f) and (g) below, the arrangement must be in the form of a written maintenance contract between the operator and the BCAR-145 maintenance organisation, detailing the functions specified in BCAR-OPS 1.890(a)(2), (3),

(5) and (6) and the support of the quality functions of BCAR-OPS 1.900. Aeroplane base and scheduled line maintenance and engine maintenance contracts, together with all amendments, must be acceptable to the BDCA. The BDCA does not require the commercial elements of a maintenance contract. (See AMC OPS 1.895(d)).

(e) Notwithstanding paragraph (d) above, the operator may have a contract with an organisation that is not a BCAR 145 approved/accepted, provided that:

(1) The maintenance organisation belongs to a certified air operator that has aeroplanes and engines of the same type;
(2) The subcontracted maintenance is only to carry out line maintenance;
(3) The contract, together with all amendments, is acceptable to the BDCA. The BDCA does not require the commercial elements of a maintenance contract (See AMC OPS 1.895 (e)).

(f) Notwithstanding paragraph (d) above, in the case of an aeroplane needing occasional line maintenance, the contract may be in the form of individual work orders to the Maintenance Organisation. (See AMC OPS 1.895(f) and (g)).

(g) Notwithstanding paragraph (d) above, in the case of aeroplane component maintenance, including engine maintenance, the contract may be in the form of individual work orders to the Maintenance Organisation.(See AMC OPS 1.895(f) and (g))

(h) The Operator must provide suitable office accommodation at appropriate locations for the personnel specified in subparagraph (b) above. (See AMC OPS 1.895(h))

BCAR-OPS 1.900 Quality system

(See AMC OPS 1.900(AMC))
(See AMC OPS 1.900(AMC))

(a) For maintenance purposes, the operator's quality system, as required by BCAR-OPS 1.035 must additionally include at least the following functions:

(1) Monitoring that the activities of BCAR-OPS 1.890 are being performed in accordance with the accepted procedures;

(2) Monitoring that all contracted maintenance is carried out in accordance with BCAR OPS 1.895(d) requirements; and

(3) Monitoring the continued compliance with the requirements of this Subpart.

(b) Where the operator is approved in accordance with BCAR-145, the quality system may be combined with that required by BCAR-145.

BCAR-OPS 1.905 Operator's maintenance management exposition (MME)

(See AMC OPS 1.905 (a))

(a) The Operator shall provide with a Maintenance Management Exposition (MME) to be used and guide maintenance and operational personnel. This manual shall be amended when necessary in order to keep the information updated. The design of the manual shall observe Human Factors principles. (See AMC OPS 1.905 (a)).

(b) The operator shall submit the Maintenance Management Exposition (MME) to be:

(1) Approved by the BDCA; and

(2) Accepted by the State of Registry in the case the aeroplane is registered in a State different from the State of the operator.

(c) The operator shall provide the BDCA and the State of registry with a copy of the Maintenance Management Exposition together with all the amendments and revisions and it shall add all mandatory texts that the BDCA or the State of Registry may require.

(d) The operator shall ensure that copies of the Maintenance Management Exposition are sent to all the organisations or persons carrying out maintenance or that have a direct link with the manual. Likewise, all revisions approved and added to the exposition shall be also sent.

(e) The exposition shall include at least the following information which may be presented in one volume or in separate volumes:

(1) A statement signed by the accountable manager confirming that the organisation shall work at all times in accordance with this BCAR and as set out in the Maintenance Management Exposition (MME).

(2) Procedures to record the release to service appropriately according to BCAR OPS 1.925, including as appropriate:

i. A description of the administrative arrangements that exist between the operator and the approved/accepted or recognized maintenance organization.

ii. A description of the procedures for evaluating information related to continuing airworthiness and the application of the resulting measures. Procedures to apply the mandatory continuing airworthiness Information (MCAI) and description of the form of compliance with this information (ADs, SBs mandatory by the Authority). Operators requesting alternative means of compliance with the MCAI must write the procedure.

iii. A description to establish in its MCM for aircraft with Maximum Certified Take-off Mass (MCTM) greater than 5,700 Kgs, evaluation procedures for information provided by the manufacturer or design body on continuing airworthiness, including

recommendations, and a description of the measures to be taken based on the results of the evaluation carried out.

iv. A description of the maintenance procedures and the procedures for completing and signing the maintenance release, when the maintenance is performed by a system that does not use a BCAR 145 approved/accepted or recognized maintenance organization.

(3) Procedures to properly record the maintenance release in accordance with BCAR-OPS 1.925.

(4) The names, duties and responsibilities of management personnel in accordance with BCAR OPS 1.895

(5) A list of airworthiness-certifying staff in accordance with BCAR 145.35

(6) An organisational chart of the organisation, which reflects the chains of responsibility related to the persons indicated in 1.895.

(7) Procedures for the use, distribution, and compliance of the maintenance programme.

i. For operators with aircraft with MCTM greater than 5700 Kgs. a description of the continuous analysis and supervision (or surveillance) system of the operation and efficiency of the maintenance program, in order to correct any deficiency or update the maintenance programs, ensuring that the operator includes in this procedure the measures that will be used to correct the deficiencies of the program that result from the analysis and experience, the operators that have reliability programs could be used as part of this requirement.

(8) A description of the methods used for the completion and retention of maintenance reports in accordance with BCAR OPS 1.920 and Appendix 1 to BCAR OPS 1.1065.

(9) A description of the procedures for monitoring, assessing and reporting maintenance and operational experience with respect to airworthiness maintenance and report failures, malfunctions, defects and other incidents in accordance with BCAR-21.

(10) A description of the procedures for complying with the notification requirements on maintenance information to the State of Registry and the Operator's BDCA in accordance with paragraph (9) above.

(11) A description of the procedures for assessing the information related to continuing airworthiness and the implementation of the resulting measures.

(12) Procedures for the implementation of measures resulting from compulsory information on continuing airworthiness.

(13) A description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme, in order to correct any deficiency in that programme.

(14) Procedures for storage, labelling and monitoring of parts and materials.

(15) A description of aeroplane types and models to which the exposition applies.

(16) A description of procedures for ensuring that unserviceability's affecting airworthiness are recorded and rectified.

(17) Procedures, rules, and limitations necessary for the inspections required as well as for the acceptance or rejection of components and parts requiring to be inspected and for periodic inspection and calibration of precision and measurement tools and testing equipment.

(18) Procedures to evaluate suppliers.

(19) Criteria to accept, inspect, and reject aeroplane components and materials from external contractors or vendors.

(20) Procedures for the control, return and deposit of leased parts, as well as their return with defects.

(21) A description of the procedures to notify significant maintenance cases to the State of Registry.

(22) A reference of the maintenance programme required in BCAR OPS 1.910 and the programme inclusion in the manual or in a separate volume.

(23) Procedures to comply with the maintenance programme.

(24) A description of the reliability programme (if applicable);

(25) On ground assistance procedures:

(i) Line service

(ii) Refuelling

(iii) Ground handling

(iv) De-icing and Anti-icing

(26) In the case of repairs and modifications, procedures to ensure that data proving compliance with airworthiness requirements is preserved.

BCAR-OPS 1.910 Operator's aeroplane maintenance programme

(See AMC OPS 1.910(a)
(See AMC OPS 1.910(a)(5))
(See AMC OPS 1.910(b))
(See AMC OPS 1.910 (c))
(See AMC OPS 1.910 (d))
(See Appendix 1 to BCAR OPS 1.910)

(a) The Operator must ensure that the aeroplane is maintained in accordance with the operator's aeroplane maintenance programme. This maintenance programme and any subsequent modification shall be approved by the State of Registry. The programme shall include:

(1) Details on maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilisation of the aeroplane;

(2) when applicable, a continuing structural integrity programme;

(3) procedures for changing or deviating from subparagraphs (1) and (2); and

(4) when applicable, condition monitoring and reliability programme descriptions for aeroplane systems, components and powerplants.

(5) those inspections required by Appendix 1 to BCAR OPS 1.910.

(b) The operator's approved aeroplane maintenance programme shall be subjected to periodical revisions and amended when necessary. The design of the Operator's maintenance programme shall observe Human Factors principles.

(c) The Operator's approved Aeroplane Maintenance Programme shall identify the maintenance tasks and intervals that have been specified as mandatory in approval of the type design.

(d) Copies of all amendments to the operator's maintenance programme shall be furnished promptly to all organisations or persons to whom the manual has been issued.

BCAR-OPS 1.915 Technical log

(See AMC OPS 1.915)
(See AMC OPS 1.915 (a) (6))

(a) The Operator must use an aeroplane technical log system containing the following information for each aeroplane:

(1) Necessary information on each flight to ensure continued safety. This information shall include details on any failure, defect, or malfunction of the aeroplane that may affect airworthiness or safe operation;

(2) The current aeroplane certificate of release to service;

(3) The current maintenance statement giving the aeroplane maintenance status of what scheduled and out of phase maintenance is next due except that the BDCA may agree to the maintenance statement being kept elsewhere;

(4) All outstanding deferred defects that affect the operation of the aeroplane;

(5) Any necessary guidance instructions on maintenance support arrangements; and

(6) Map for the follow-up of bumps and damages found during daily operation.

(b) The aeroplane technical log system and any subsequent amendment must be approved by the BDCA.

BCAR-OPS 1.920 Maintenance records

(See AMC-OPS 1.920)
(See AMC-OPS 1.920 (b)(6))
(See AMC-OPS 1.920 (c))
(See Appendix 1 to BCAR-OPS 1.1065)

(a) The Operator shall ensure that the aeroplane technical log is retained for 24 months after the date of the last entry.

(b) The Operator shall ensure that a system has been established to keep, in a form acceptable to the BDCA the following records for the periods specified:

(1) All detailed maintenance records in respect of the aeroplane and any aeroplane component fitted thereto 24 months after the aeroplane or aeroplane component was released to service.

(2) The total time and flight cycles or total landings as appropriate, of the aeroplane and all life-limited aeroplane components 12 months after the aeroplane has been permanently withdrawn from service.

(3) The time and flight cycles or total landings as well as calendar time as appropriate, since the last overhaul of the aeroplane or aeroplane component subjected to an overhaul life – Until the aeroplane or aeroplane component overhaul has been superseded by another overhaul.

(4) The current aeroplane inspection status such that compliance with the approved operator's aeroplane maintenance programme can be established – Until the aeroplane or aeroplane component inspection has been superseded by another inspection, of equivalent work scope and detail.

(5) The current status of airworthiness directives applicable to the aeroplane and aeroplane components – 12 months after the aeroplane has been permanently withdrawn from service; and

(6) Details of current modifications and repairs to the aeroplane, engine(s), propeller(s) and any other aeroplane component vital to flight safety – 12 months after the aeroplane has been permanently withdrawn from service.

(c) The Operator shall ensure that when an aeroplane is permanently transferred from one operator to another operator, the records specified in paragraphs (a) and (b) are also transferred and the time prescribed will continue to apply to the new operator.

(d) In the case of a temporary change of operator, records shall be available for the new operator.

(e) The records that are kept and transferred in accordance with BCAR OPS 1.920 will be kept in a form and format that guarantee their legibility, security and integrity at all times.

BCAR-OPS 1.925 Certificate of release to service or maintenance release records in the technical log

(a) The Operator shall not operate an aeroplane after maintenance, modification, alteration, overhaul, or preventive maintenance has been carried out, unless it is registered in the technical log.

(b) The maintenance release shall be written in accordance with the procedures established in the Maintenance Management Exposition according to BCAR OPS 1.915.

(c) The maintenance release shall include a certification in accordance with BCAR 145.50.

(1) Basic details of the maintenance performed, including detailed reference to approved data used;

(2) The date such maintenance was completed;

(3) The identity of the person or persons signing the agreement

(d) When the maintenance is carried out by an approved or recognized maintenance organization, the maintenance release will be issued by said organization in accordance with the provisions of BCAR 145.

BCAR-OPS 1.930 Continued validity of the air operator certificate in respect of the maintenance system

(See AMC OPS 1.930)

The Operator must comply with BCAR-OPS 1.175 and BCAR-OPS 1.180 to ensure continued validity of the air operator certificate in respect of the maintenance system**.**

BCAR-OPS 1.935 Equivalent safety case

(See AMC OPS 1.935)

The Operator shall not introduce alternative procedures to those prescribed in this Subpart unless needed and an equivalent safety case has first been approved by the BDCA.

Appendix 1 of BCAR-OPS 1.905(a) Maintenance Control Manual (MCM) of an operator that is also approved in accordance with BCAR-145

PART 0 GENERAL ORGANIZATION

1.1 Corporate commitment of the Operator

1.2 General Information

- Brief description of the organization
- Relationship with other organizations
- Composition of the fleet - Type of operation
- Location of line stations

1.3 Maintenance Administration Personnel

- Responsible manager
- Maintenance responsible. Structure of the maintenance department.
- Maintenance coordination
- Functions and responsibilities
- Organization charts
- Human resources and training policy.

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1.4 Notification procedures to the BDCA regarding changes in the approval, activities, personnel, locations, and maintenance agreements of the operator.

1.5 MCM Manual Amendment Procedures

PART 1 MANAGEMENT

*PART 2 MAINTENANCE PROCEDURES

*PART L2 ADDITIONAL LINE MAINTENANCE PROCEDURES

*PART 3 QUALITY SYSTEM PROCEDURES

Operator maintenance personnel qualification procedure not covered by BCAR-145.

NOTE. - The quality system procedures of Appendix 2 to AMC OPS 1.905(a) (Part 2 Quality System) must also be taken into account.

*PART 4 CONTRACTED BCAR-OPS OPERATORS

*PART 5 APPENDICES (Examples of formats)

These parts are included in the MOM Manual of the organization BCAR-145

PART 6 MAINTENANCE PROCEDURES BCAR-OPS

6.1 Use of the maintenance log and use of the MEL

6.2 Aircraft Maintenance Program – Development and Amendments

6.3 Records of times and maintenance. Responsibilities, file and access

6.4 Compliance and control of airworthiness directives

6.5 Analysis of the effectiveness of the aircraft maintenance program

6.6 Policy for the incorporation of non-mandatory modifications

6.7 Procedures for incorporating major modifications/repairs

6.8 Defect reports

- Analysis
- Communications to Authorities and manufacturers.
- Policy to defer defects Engineering activity

6.9 Reliability programs

- Cell
- Engine
- Components

6.10 Pre-flight inspection

- Preparation for the flight of the plane
- Subcontracted functions of ground services

- Cargo and baggage loading security
- Fuel control. Quantity and quality
- Control of contamination by snow, ice, dust, sand up to approved standards.

6.11 Aircraft weighing

6.12 Procedures for test flights (**)

6.13 Examples of documents, Labels and forms used May be contained in Part 2, Maintenance Procedures

Appendix 2 of BCAR-OPS 1.905(a) Maintenance Control Manual (MCM) of an operator that is not approved in accordance with BCAR-145

PART 0 GENERAL ORGANIZATION
(According to Appendix 1 to AMC OPS 1.905(a))

PART 1 MAINTENANCE PROCEDURES BCAR-OPS

(According to Appendix 1, Part 6 of the AMC OPS 1.905(a)) PART 2 QUALITY SYSTEM

2.1 Quality policy in maintenance, planning and audit procedures

2.2 Verification of maintenance management activities

2.3 Verification of the effectiveness of the maintenance program

2.4 Monitoring that all maintenance is carried out by BCAR organizations 145

- Aircraft maintenance
- Engines
- Components

2.5 Monitoring that all contracted maintenance is performed according to the contract, including subcontractors used by the maintenance contractor
2.6 Personnel who carry out quality audits

PART 3 CONTRACTED MAINTENANCE

3.1 Maintenance Contractor Selection Procedures

3.2 Detailed list of maintenance contractors

3.3 Technical procedures identified in maintenance contracts

Appendix 1 to BCAR OPS 1.910 Responsibility – Inspections

(See BCAR OPS 1.910)

(a) The aeroplane maintenance program should contain the following basic information:

(1) The type/model and registrations of the aircraft, engines, and, where applicable, auxiliary power units and propellers.

(2) The name and address of the operator

(3) Specific name used by the operator to identify the maintenance program document; the date of issue and number and date of revision.

(4) A statement signed by the operator's Maintenance Manager that the airplanes specified in the document will be maintained in accordance with this program, and that the program. It will be reviewed and updated in accordance with the provisions of section 5 below.

(5) List of effective pages and content.

(6) Periods between checks according to the intended use of the airplane. This intended use of the airplane must be established and include a tolerance of no more than 25% of it. If the use of hours / cycles of the aircraft cannot be foreseen, the most important parameter to determine the periods between checks will be the establishment of the calendar times applicable to each type of check.

(7) Procedures for the escalation of the periods between check-ups, when applicable and have been accepted by the BDCA.

(8) Provisions for recording the dates and references to approvals of amendments incorporated into the maintenance program.

(9) Detail of the pre-flight maintenance tasks that will be carried out by maintenance personnel and
they will not be included in the Operations Manual to be carried out by the crew.

(10) The tasks and the periods (intervals/frequencies) at which each part of the airplane, engines, APUs, propellers, components, accessories, equipment, instruments, radio and electrical equipment and their associated systems and installations should be inspected, along with the type and intensity of the inspection.

(11) The periods at which certain elements, as appropriate, should be inspected, cleaned, lubricated, refilled, adjusted, or tested.

(12) Details of specific structural inspection programs, such as aging, SIP, etc.

(13) When applicable, details of the corrosion prevention and control program(CPCP).

(14) The periods and procedures for data collection of the engine trend monitoring program.

(15) The periods in which the affected parts must be subjected to major review (overhaul) or disassembly and replaced by others from major review (overhaul) or new.

(16) A cross-reference to other documents approved/accepted by the BDCA that contain details of the maintenance tasks related to life-limit components, certification requirements of maintenance (CMR's) and airworthiness directives (AD's).

. To avoid inadvertent variations of these tasks or intervals, these elements should not be included in the main part of the maintenance program, or any planning control system, without specifically identifying that they are mandatory elements.

(17) Details, or cross-reference, of any required Reliability Program or continuous monitoring statistical method.

(18) A certification that the practices and procedures to satisfy the maintenance program will be to the standards specified in the licensee's maintenance instructions type certificate. When the practices and procedures are included in a BDCA-approved Custom Operator Maintenance Manual, the certification should reference this Manual.

(19) Each maintenance task listed should be defined in a definitions section of the maintenance program.

(20) Inspections and testing of altimeter systems and altitude warning equipment.

No person may operate an aeroplane in controlled airspace under IFR (Instrument Flight Rules) unless:

(21) Inspections and checks to the altimeter systems and altitude warning equipment

1. All static pressure systems, altimeters, and pressure altitude automatic report system have been approved and inspected within the previous 24 calendar months in accordance with the provisions of BCAR-43: and

2. Inspections are carried out by an approved maintenance organisation with appropriate instrument rating for the brand and model of the instrument to be approved.

(22) Inspections and ATC transponder tests

No one can use an ATC transponder specified in BCAR OPS 1.910 unless:

1. it has been tested and approved in the last 24 months in accordance with the provisions of BCAR-43 AMC OPS 1.910 (b) (5) and

2. the inspection has been carried out by an AMO with a limited radio rating appropriate for the mark and model of the transponder to be approved and in accordance with BCAR 145.

(23) Emergency locator transmitter (ELT)

1. Each emergency locator transmitter required by BCAR OPS 1.820 shall be inspected within the twelve months after the last inspection for:

i) proper installation
ii) battery corrosion
iii) operation of controls
iv) crash sensor
v) the presence of a sufficient signal radiated from its antenna.

2. Notwithstanding paragraph (a) of this section, a person may:

(i) Ferry a newly acquired aeroplane from the place where possession of it was taken to a place where the emergency locator transmitter is to be installed.

(ii) Ferry an aeroplane with an inoperative emergency locator transmitter from a place where repairs or replacements cannot be made to a place where they can be made. In both cases, no person other than required crew members may be carried aboard an aeroplane being ferried.

(24) Verification of the VOR equipment for IFR operations

1. No one can operate an IFR aeroplane using a VOR radio navigation system unless the VOR equipment of that aeroplane:

(1) is maintained, checked, and inspected under an approved procedure, or

(2) has been operationally checked within the 30 days before and is under the permissible course error limits in accordance with the regulations established for these purposes. AMC OPS 1.910 (c) (5).

(a) Basis of the program

(1) In general, the aircraft maintenance programs of the operator should be based on the maintenance MRBR, when it exists, and the MPD of the type certificate holder, or on Chapter 5 of the Maintenance Manual, (e.g. maintenance program recommended by the manufacturer). The structure and format of these maintenance recommendations may be reworked by the operator so that they are better adjusted to your type of operation and for better control of it.

(2) For recently type-certified airplanes, for which there is no previously approved maintenance program, it will be necessary for the operator to assess in detail the manufacturer's recommendations (and the MRBR when it exists), together with other airworthiness information, in order to produce a realistic maintenance schedule that allows for approval.

(3) For existing airplane types, it is acceptable for the operator to make a comparison with previously approved maintenance programs. It should not be assumed that the maintenance program approved for one operator is automatically approved for another operator. A must be done evaluation of the use of the aircraft/fleet, landing ratio, installed equipment and, specifically, the experience of the BCAR-145 maintenance organization should be evaluated. When the Authority is not satisfied with the proposed maintenance program, it may require the operator to introduce certain changes such as additional maintenance tasks, frequency de-escalation, or develop an initial maintenance program based on the values established by the MRBR, or MPD.

(b) Amendments

(1) The operator should produce amendments (or revisions) to the approved maintenance program to reflect changes due to the type certificate holder's recommendations, modifications, service experience, or the Authority's requirement. Reliability programs are an important tool in updating the approved maintenance program.

(c) Permitted Variations to Holding Periods.

(1) The operator may only vary, with the approval of the State of Registration, the periods established in the maintenance program.

(d) Periodic review of the content of the maintenance program.

(1) The operator's approved maintenance programs should be subject to periodic review to ensure that they reflect the recommendations of the holder of the type certificates, revisions to the MRBR, mandatory requirements, and maintenance needs of the airplane.

(2) The operator should review the maintenance program in detail at least annually.

SUBPART N – FLIGHT CREW

BCAR-OPS 1.940 Composition of flight crew

(See Appendices 1 and 2 to BCAR-OPS 1.940)
(See AMC OPS 1.940 (a) (4))

(a) The operator shall ensure that:

(1) The composition of the flight crew and the number of flight crew members at designated crew stations are both in compliance with, and no less than the minimum specified in the Aeroplane Flight Manual (AFM).

(2) The flight crew includes additional flight crew members when required by the type of operation, and is not reduced below the number specified in the Operations Manual;

(3) All flight crew members hold an applicable and valid licence acceptable to the BDCA and are suitably qualified and competent to conduct the duties assigned to them;

(4) Procedures are established, acceptable to the BDCA, to prevent the crewing together of inexperienced flight crew members (See AMC OPS 1.940 (a) (4)).

(5) One pilot amongst the flight crew, qualified as a pilot-in-command in accordance with BCAR-APL is designated as the pilot in command who may delegate the conduct of the flight to another suitably qualified pilot; and

(6) When there is a separate position for such a mechanic on the airplane type, the flight crew shall include at least one flight engineer specially assigned to such position, unless duties related to such position can be performed. satisfactorily by another member of the flight crew, holder of a flight engineer licence, without prejudice to the performance of duties.

(7) Flight crew shall include, at least, one member who holds a flight navigator licence for all flights the BDCA determines that flight navigation necessary for a safe conduct of the flight cannot be adequately accomplished by the pilots from the pilot station.

(8) When engaging the services of flight crew members who are self-employed and/or working on a freelance or part-time basis, must comply with the requirements of Subpart N. In this respect, particular attention must be paid to the total number of aeroplane types or variants that a flight crew member may fly for the purposes of commercial air transport, which must not exceed the requirements prescribed in BCAR-OPS 1.980 and BCAR-OPS 1.981, including when his/her services are engaged by another operator. For crew members serving the operator as a pilot in command, initial operator's Crew Resource Management (CRM) training shall be completed before commencing unsupervised line flying, unless the crew member has previously completed the initial operator's CRM training.

(9) The flight crew shall at least include a member holding a valid licence issued or rendered valid by the State of Registry or holding an authorisation for the operation of the type of radio transmitting equipment to be used.

(b) *Minimum flight crew for operations under IFR or at night.* For operations under IFR or at night, The Operator shall ensure that:

(1) For all turbo-propeller aeroplanes with a maximum approved passenger seating configuration of more than 9 and for all turbojet aeroplanes, the minimum flight crew is 2 pilots; or

(2) Aeroplanes other than those covered by subparagraph (b)(1) above are operated by a single pilot provided that the requirements of Appendix 2 to BCAR-OPS 1.940 are satisfied. If the requirements of Appendix 2 are not satisfied, the minimum flight crew is 2 pilots.

BCAR-OPS 1.941 Flight crew training programmes

(See AMC OPS 1.941)

(a) The operator shall establish and maintain a ground and flight training programme, approved by the BDCA, which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

(1) include appropriate ground and flight training facilities and properly qualified instructors as determined by the BDCA;

(2) consist of ground and flight training in the type(s) of aeroplane on which the flight crew member serves;

(3) include proper flight crew coordination and training in all types of emergency and abnormal situations or procedures caused by power plant, airframe or systems malfunctions, fire or other abnormalities;

(4) include upset prevention and recovery training;

(5) include training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, human performance including threat and error management and in the transport of dangerous goods;

(6) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures; and

(7) be given such training on a recurrent basis, as determined by the BDCA, including an assessment of competence.

(8) The instructor in charge of giving ground, flight and simulator training shall not be the same person that conducts the proficiency check.

(b) (9)The operator, when assigning to the members of the flight crew, the necessary functions that must be executed in case of emergency or in a situation that requires emergency evacuation, must establish in its training program the annual training necessary for each type of flight. aircraft, regarding the execution of these functions, as well as instruction on the use of all emergency and rescue equipment that must be carried on board, and emergency evacuation drills from the aircraft.;

The requirement for recurrent flight training in a particular type of aeroplane shall be considered fulfilled by:

1. The use, to the extent deemed feasible by the BDCA, of flight simulation training devices approved by BDCA for that purpose; or

2. The completion within the appropriate period of the proficiency check required by BCAR OPS 1.965 in that type of aeroplane.

BCAR-OPS 1.943 Initial CRM (Crew Resource Management) training for the operator.

(See AMC OPS 1.943/1.945(a)(9)

(a) No newly recruited flight crew member may fly on the line without first completing initial operator CRM training.

(b) If a flight crew member has not been previously trained in Human Factors, then they must complete a theoretical course, based on the human capabilities and limitations program of the ATP license (See the applicable requirements for the issuance of the Aeronautical Personnel Licensing (APL)), previously or combined with the initial CRM training of the operator.

(c) The initial CRM training must be given by at least one CRM facilitator acceptable to the BDCA who can be assisted by experts in order to develop specific subjects.

(d) Initial CRM training will be delivered in accordance with a detailed course syllabus included in the Operations Manual.

***BCAR*-OPS 1.945 Conversion and verification training**

(See Appendix 1 of BCAR-OPS 1.945)
(See AMC OPS 1.945)
(See AMC OPS 1.943/1.945(a)(9)
(See BCAR APL)

(a) The operator must ensure that:

(1) Each member of the flight crew completes a type rating course that satisfies the applicable requirements for the issuance of a license in accordance with the applicable licensing regulations, when changing from one type of airplane to another type or class for which requires a new authorization;

(2) Each flight crew member completes an operator conversion course prior to commencing unattended line flights:

(i) When changing to an airplane for which a new type or class rating is required; either

(ii) When the operator changes;

(3) The conversion training is given by suitably qualified persons, according to a detailed program that is included in the Operations Manual. The operator will ensure that the staff that incorporates CRM elements in the conversion training is suitably qualified;

(4) The training required for the operator's conversion course is determined having duly taken into account the previous training of the flight crew member, as recorded in their training records, in accordance with BCAR-OPS 1.985;

(5) The minimum levels of qualification and experience required of flight crew members are specified in the Operations Manual before beginning conversion training;

(6) Each member of the flight crew undergoes the checks required in BCAR-OPS 1.965(b) and the training and checks required in BCAR-OPS 1.965(d), before starting the line flight under supervision;

(7) Upon completion of line flights under supervision, the check required in BCAR-OPS 1.965(c) is carried out;

(8) Once the operator conversion course has begun, each flight crew member must not perform flight duties on another type or class of airplane until the course has been completed or cancelled; and

(9) Elements of CRM training are incorporated into the conversion course. (See AMC OPS 1.943/1.945(a)(9), 1.965 (e)

(b) In the case of a change of aircraft type or class, the verification required in BCAR-OPS 1.965(b) may be combined with the aptitude test for the type or class rating in accordance with the applicable requirements for the issuance of licenses according to BCAR-APL

(c) The operator's conversion course can be combined with the Type or Class Rating course that is required for the issuance of licenses according to BCAR-APL.

BCAR-OPS 1.950 Differences training and familiarisation training

(a) The Operator shall ensure that a flight crew member completes:

(1) *Differences training* which requires additional knowledge and training on an appropriate training device or the aeroplane:

(i) When operating another variant of an aeroplane of the same type or another type of the same class currently operated; or

(ii) When changing equipment and/or procedures on types or variants currently operated.

(2) *Familiarisation training* which requires the acquisition of additional knowledge:

(i) When operating another aeroplane of the same type; or

(ii) When changing equipment and/or procedures on types or variants currently operated.

(b) The operator shall specify in the Operations Manual when such differences training or familiarisation training is required.

BCAR-OPS 1.955 Nomination as pilot in command

(See AMC OPS 1.943/1.945 (a) (9)/1.955 (b) (6) /1.965(e)(ACM) and AMC OPS 1.943/1.945 (a) (9)/1.955(b)(6)/1.965(e)(MEI))

(a) For each flight, the operator shall designate one pilot to act as pilot-in-command.

(b) The Operator shall ensure that for upgrade to pilot in command from co-pilot and for those joining as pilot in command:

(1) A minimum level of experience, acceptable to the BDCA is specified in the Operations Manual; and

(2) For multi-crew operations, the pilot completes an appropriate command course.

(c) The command course required by subparagraph (a)(2) above must be specified in the Operations Manual and include at least the following:

(1) Training and checking on ground, including aeroplane systems, normal, abnormal, and emergency procedures;

(2) Training in an STD (including Line Orientated Flying Training) and/or flying training;

(3) The Operator proficiency check operating as pilot in command carried out by the operator;

(4) Pilot in command's responsibilities;

(5) Line training in command under supervision. A minimum of 10 sectors is required for pilots already qualified on the aeroplane type;

(6) Completion of a pilot in command's line check as prescribed in BCAR-OPS 1.965(c) and route and aerodrome competence qualification as prescribed in BCAR-OPS 1.975; and

(7) Elements of Crew Resource Management (See AMC OPS 1.943/1.945 (a) (9)/1.955 (b) (6) /1.965(e)(AMC) and AMC OPS 1.943/1.945 (a) (9)/1.955(b)(6)/1.965(e)(AMC))

BCAR-OPS 1.960 Pilot in command holding a commercial pilot licence

(a) The Operator shall ensure that:

(1) A Commercial Pilot Licence (CPL) holder does not operate as a pilot in command of an aeroplane certificated in the AFM for single pilot operations unless:

(i) When conducting passenger carrying operations under Visual Flight Rules (VFR) outside a radius of 50 nm from an aerodrome of departure, the pilot has a minimum of 500 hours total flight time on aeroplanes or holds a valid Instrument Rating; or

(ii) When operating on a multiengine type under Instrument Flight Rules (IFR), the pilot has a minimum of 700 hours total flight time on aeroplanes which includes 400 hours as pilot-in-command of which 100 hours have been under IFR including 40 hours multi-engine operation. The 400 hours as pilot-in-command, in accordance with BCAR-APL, may be substituted by hours operating as co-pilot on the basis of two hours co-pilot is equivalent to one hour as pilot-in-command provided those hours were gained within an established multipilot crew system prescribed in the Operations Manual;

(2) In addition to subparagraph (a)(1)(ii) above, when operating under IFR as a single pilot, the requirements prescribed in Appendix 2 to BCAR-OPS 1.940 are satisfied; and

(3) In multi-pilot crew operations, in addition to subparagraph (a)(1) above, and prior to the pilot operating as pilot in command, the command course prescribed in BCAR-OPS 1.955(a) (2) is completed.

BCAR-OPS 1.965 Recurrent training and checking.

(See appendices 1 and 2 to BCAR-OPS 1.965)
(See AMC OPS 1.943/1.945 (a) (9)/1.955 (b) (6)/1.965(e)(AMC))

(See AMC OPS 1.943/1.945 (a) (9)/1.955 (b) (6)/1.965(e)(AMC))
(See AMC OPS 1.965)
(See AMC OPS 1.965(c))
(See AMC OPS 1.965(d))
(See AMC to Appendix 1 of BCAR OPS 1.965)

(a) *General*. The operator shall ensure that:

(1) Each flight crew member undergoes recurrent training and checking and that all such training and checking is relevant to the type or variant of aeroplane on which the flight crew member operates;

(2) A recurrent training and checking programme is established in the Operations Manual and approved by the BDCA;

(3) Recurrent training is conducted by the following personnel:

(i) *Ground and refresher training* by suitably qualified personnel;

(ii) *Aeroplane/STD training* - by a Type Rating Instructor (TRI), Class Rating Instructor (CRI) or in the case of the STD content, a Synthetic Flight Instructor (SFI), providing that the TRI, CRI or SFI satisfies the operator's experience and knowledge, requirements sufficient to instruct on the items specified in paragraphs (a)(1)(i)(A) and (B) of Appendix 1 to BCAR-OPS 1.965;

(iii) *Emergency and safety equipment training* -- by suitably qualified personnel; and

(iv) *Crew Resource Management (CRM)*;

(A) Integration of CRM elements into all the phases of the recurrent training – by all the personnel conducting recurrent training. The operator shall ensure that all personnel conducting recurrent training are suitably qualified to integrate elements of CRM into this training;

(B) Modular CRM training – by at least one CRM trainer acceptable to the BDCA (See AMC-OPS 1.943/1.945(a) (9)/1.955(b) (6)/1.965(e)), who may be assisted by experts in order to address specific areas.

(4) Recurrent checking is conducted by the following personnel:

(i) *Operator proficiency check* — by a Type Rating Examiner (TRE), Class Rating Examiner (CRE) or, if the check is conducted in a STD a TRE, CRE or a Synthetic Flight Examiner (SFE), trained in CRM concepts and the assessment of CRM skills;

(ii) *Line checks*-- by suitably qualified pilots in command nominated by the operator and acceptable to the BDCA;

(iii) *Emergency and safety equipment checking*-- by suitably qualified personnel.

(b) *Operator proficiency check*

(1) The Operator shall ensure that:

(i) Each flight crew member undergoes operator proficiency checks to demonstrate his/her competence in carrying out normal, abnormal, and emergency procedures; and

(ii) The check is conducted without external visual reference when the flight crew member will be required to operate under IFR.

(iii) Each flight crew member undergoes operator proficiency checks as part of a normal flight crew complement.

(iv) The pilot's competence to comply with paragraph (b) (1) (ii) above is demonstrated to either a check pilot delegated by the operator or to a representative of the BDCA.

(v) When an air operator assigns a flight crew on several variants of the same type of aeroplane with similar characteristics in terms of operating procedures, systems and handling, this situation shall be presented to the BDCA, who shall decide under which conditions the requirements of (b) (1), (i), (ii), (iii), (iv) for each variant or each type of aeroplane can be combined.

(2) The proficiency checks shall be performed twice within any period of one year. Any two such checks which are similar and which occur within a period of four consecutive months shall not alone satisfy this requirement.

(c) *Line check*. The Operator shall ensure that each flight crew member undergoes a line check on the aeroplane to demonstrate his/her competence in carrying out normal line operations described in the Operations Manual. The period of validity of a line check shall be 12 calendar months, in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous line check the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous line check (See AMC OPS 1.965(c)).

(d) *Emergency and safety equipment training and checking*. The Operator shall ensure that each flight crew member undergoes training and checking on the location and use of all emergency and safety equipment carried. The period of validity of an emergency and safety equipment check shall be 12 calendar months in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous emergency and safety check, the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous emergency and safety equipment check (See AMC OPS 1.965(d)).

(e) *CRM*. The Operator shall ensure that:

(1) Elements of CRM are integrated into all appropriate phases of the recurrent training, and;

(2) Each flight crew member undergoes specific modular CRM training. All major topics of CRM training shall be covered over a period not exceeding 3 years.

(f) *Ground and refresher training*. The Operator shall ensure that each flight crew member undergoes ground and refresher training at least every 12 calendar months. If the training is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next ground and refresher training must be completed within 12 calendar months of the original expiry date of the previous ground and refresher training.

(*g) Aeroplane/FSTD training*. Provided that it is available and deemed practicable by the BDCA, the operator should use Flight Simulation Training Devices (FTSD) approved by the BDCA for such purpose. The Operator shall ensure that each flight crew member undergoes recurrent aeroplane/STD training every 12 calendar months. If the training is conducted within 3 calendar months prior to the expiry of the previous aeroplane/FSTD training period, the next aeroplane/STD training must be completed within 12 calendar months of the original expiry date of the previous aeroplane/STD training.

BCAR-OPS 1.968 Pilot qualification to operate in either pilot's seat.

(See Appendix 1 BCAR-OPS 1.968)

(a) The Operator shall ensure that:

(1) A pilot who may be assigned to operate in either pilot's seat completes appropriate training and checking; and

(2) The training and checking programme are specified in the Operations Manual and is acceptable to the BDCA.

BCAR-OPS 1.970 Recent experience

(See AMC OPS 1.970)
(See AMC OPS 1.970(a) (2))

(a) An operator shall not assign a pilot-in-command or co-pilot to take over the flight controls of a type or variant of a type of aeroplane during take-off and landing, unless such pilot has been by flight controls for at least three take offs and landings in the preceding 90 days and in the same type of aircraft or in an approved flight simulator for the purpose.

(b) When a pilot in command or a co-pilot is flying in different variants of the same type of aeroplane or in different types of aeroplanes with similar characteristics in terms of operating

procedures, systems and handling, the BDCA will decide under what conditions the requirements may be combined of 1.970 (a) for each variant or each type of aeroplane.

(c) Recent Experience-Cruise Relief Pilot: The operator shall not assign a pilot to act as a cruise relief pilot unless, within the preceding 90 days the pilot:

1. served as pilot-in-command, co-pilot, or cruise relief pilot in the same type of aeroplane; either

2. Has completed a refresher course in flight skills, including normal, abnormal, and emergency procedures specific to cruise flight, in the same type of aeroplane or in an approved flight simulator and has practiced approach procedures and landing, and is capable of performing such practices without being in command.

(d) When a cruise relief pilot flies in different variants of the same type of aeroplane or in different types of aeroplanes with similar characteristics in terms of operating procedures, systems, and handling, the BDCA shall decide under what conditions the requirements of the relief may be combined. BCAR OPS 1.970 (c) (1) and (2) above, for each variant or each type of aircraft.

BCAR-OPS 1.975 Route and aerodrome competence qualification

(See AMC OPS 1.975)

(a) The operator shall not use any pilot as pilot-in-command, co-pilot, or both on a route or route segment in respect of which the pilot(s) is/are not qualified, until such pilot(s) has complied with:

(b) Each of said pilots shall demonstrate to the Operator adequate knowledge of:

1. The route he is to fly, and the airfields he is to use. This will include knowledge of:

   i. the terrain and minimum safe altitudes;

   ii. the seasonal meteorological conditions;

   iii. the meteorological, communication and air traffic facilities, services and procedures;

   iv. the search and rescue procedures;

   v. the navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place; and

2. Procedures applicable to flight paths over heavily populated areas and areas of high air traffic density, obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, and applicable operating minima.

3. The operator shall ensure that the pilot in command shall have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless:

   i. the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and a margin to be approved by the BDCA is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or

   ii. the descent from the initial approach altitude can be made by day in visual meteorological conditions; or

   iii. the operator qualifies the pilot-in-command to land at the aerodrome concerned by means of an adequate pictorial presentation; or

   iv. the aerodrome concerned is adjacent to another aerodrome at which the pilot-in-command is currently qualified to land.

4. The operator shall maintain a record, sufficient to satisfy the BDCA of the qualification of the pilot and of the manner in which such qualification has been achieved in accordance with BCAR OPS 1.985.

5. The operator must not use a member of the flight crew as pilot in command on a route or within an area specified by the operator and approved by the BDCA that issued the AOC, unless in the preceding 12 months that pilot has acted as a member of the flight crew, as a designated pilot or as an observer in the flight crew compartment:

   i. within the specified area;

   ii. If applicable, over any route where the procedures associated with that route or with any aerodrome intended to be used for take-off or landing require the application of special skills or knowledge.

6. The Operator shall not continue to utilise a pilot as a pilot-in-command on a route or within an area specified by the operator and approved by the BDCA that issued the AOC unless, within the preceding 12 months, that pilot has made at least one trip as a pilot member of the flight crew, or as a check pilot, or as an observer in the flight crew compartment:
   (a) within that specified area; and

(b) if appropriate, on any route where procedures associated with that route or with any aerodromes intended to be used for take-off or landing require the application of special skills or knowledge.

7. In the event that more than 12 months elapse in which a pilot-in-command has not made such a trip on a route in close proximity and over similar terrain, within such a specified area, route or aerodrome, and has not practised such procedures in a training device which is adequate for this purpose, prior to again serving as a pilot-in-command within that area or on that route, that pilot must requalify in accordance with BCAR OPS 1.975 (b)(1)(3).

BCAR-OPS 1.978 Intentionally left blank

BCAR-OPS 1.980 Operation in more than one type or variant

(See Appendix 1 to BCAR-OPS 1.980)
(See AMC-OPS 1.980) (See AMC OPS 1.980(b) (AMC))
(See AMC OPS 1.980(b) (AMC))

(a) The Operator shall ensure that a flight crew member does not operate on more than one type or variant, unless: the flight crew member is competent to do so.

(b) When considering operations of more than one type or variant, The Operator shall ensure that the differences and/or similarities of the aeroplanes concerned justify such operations, taking account of the following:

(1) The level of technology;

(2) Operational procedures;

(3) Handling characteristics. (See AMC OPS 1.980(b) (AMC) and AMC OPS 1.980(b) (AMC)).

(c) The Operator shall ensure that a flight crew member operating more than one type or variant complies with all of the requirements prescribed in Subpart N for each type or variant unless the BDCA has approved the use of credit(s) related to the training, checking and recent experience requirements.

(d) The Operator shall specify appropriate procedures and/or operational restrictions, approved by the BDCA in the Operations Manual, for any operation on more than one type or variant covering:

(1) The flight level crew members' minimum experience level;

(2) The minimum experience level on one type or variant before beginning training for and operation of another type or variant;

(3) The process whereby flight crew qualified on one type or variant will be trained and qualified on another type or variant; and

(4) All applicable recent experience requirements for each type or variant.

BCAR-OPS 1.981 Operation of helicopters and aeroplanes

(a) When a flight crew member operates both helicopters and aeroplanes:

(1) The Operator shall ensure that operations of helicopter and aeroplane are limited to one type of each.

(2) The operator shall specify appropriate procedures and/or operational restrictions, approved by the BDCA, in the Operations Manual.

BCAR-OPS 1.985 Training records

(See AMC OPS 1.985)

(a) The Operator shall:

(1) Maintain records of all training, checking and qualification prescribed in BCAR-OPS 1.945, 1.955, 1.965, 1.968, and 1.975 undertaken by a flight crew member; and

(2) Make the records of all conversion courses and recurrent training and checking available, on request, to the flight crew member concerned.

Appendix 1 to BCAR-OPS 1.940 In-flight relief of flight crew members

(a) A flight crew member may be relieved in flight of his/her duties at the controls by another suitably qualified flight crew member.

(b) Relief of the pilot in command

(1) The pilot in command may delegate conduct of the flight to:

(i) Another qualified pilot in command; or

(ii) For operations only above FL 200, a pilot qualified as detailed in subparagraph (c) below.

(c) *Minimum requirements for a pilot relieving the pilot in command*

(1) Valid airline transport pilot licence;

(2) Conversion training and checking (including type rating training) as prescribed in BCAR-OPS 1.945;

(3) All recurrent training and checking as prescribed in BCAR-OPS 1.965 and BCAR-OPS 1.968; and

(4) Route competence qualification as prescribed in BCAR-OPS 1.975.

(d) *Relief of the co-pilot*

(1) The co-pilot may be relieved by:

(i) Another suitably qualified pilot; or

(ii) A cruise relief co-pilot qualified as detailed in subparagraph (e) below.

(e) *Minimum requirements for Cruise Relief Co-Pilot*

(1) Valid Commercial Pilot Licence with Instrument Rating;

(2) Conversion training and checking, including type rating training, as prescribed in BCAR-OPS 1.945 except the requirement for take-off and landing training;

(3) All recurrent training and checking as prescribed in BCAR-OPS 1.965 except the requirement for take-off and landing training; and

(4) To operate in the role of co-pilot in the cruise only and not below FL 200.

(5) Recent experience as prescribed in BCAR-OPS 1.970 may be carried out in a flight simulator provided that recency and refresher flying skill training at intervals not exceeding 90 days. This refresher training may be combined with the training prescribed in BCAR-OPS 1.965.

(f) *Relief of flight engineer*. A system panel operator may be relieved in flight by a crew member who holds a Flight Engineer's licence or by a flight crew member with a qualification acceptable to the BDCA.

Appendix 2 to BCAR-OPS 1.940 Single pilot operations under IFR or at night

(a) Aeroplanes referred to in BCAR-OPS 1.940 (b) (2) may be operated by a single pilot under IFR or at night when the following requirements are satisfied:

(1) The operation is approved by the State of the Operator;

(2) The Aeroplane Flight Manual does not require more than one flight crew member;

(3) The aeroplane has an approved maximum configuration of 9 passenger seats or less;

(4) The maximum certified take-off weight is lower than 5 700 Kg.;

(5) the aeroplane is equipped in accordance with BCAR OPS 1.730, 1.745 and 1.755;

(6) The operator shall include in the Operations Manual a pilot's conversion and recurrent training programme which includes the additional requirements for a single pilot operation;

(7) In particular, the cockpit procedures must include:

(i) Engine management and emergency handling;

(ii) Use of normal, abnormal and emergency checklists;

(iii) ATC communication;

(iv) Departure and approach procedures;

(v) Autopilot management; and

(vi) Use of simplified in-flight documentation;

(vii) Guidance to passengers regarding emergency evacuation;

(8) The recurrent checks required by BCAR-OPS 1.965 shall be performed in the single pilot role on the type or class of aeroplane in an environment representative of the operation;

(9) The pilot shall have a minimum of 50 hours flight time on the specific type or class of aeroplane under IFR of which 10 hours is as pilot in command; and

(i) for operations under the IFR, have accumulated at least 25 hours of flight time under the IFR on the class of aeroplane, which may comprise the 50 hours of flight time required in subparagraph (9).

(ii) for operations at night, have accumulated at least 15 hours of flight time at night, which may comprise the 50 hours of flight time required in subparagraph (9).

(10) The minimum required recent experience for a pilot engaged in a single-pilot operation under IFR or at night shall be:

(i) 5 IFR flights, including 3 instrument approaches, carried out during the preceding 90 days on the type or class of aeroplane in the single-pilot role.

(ii) an IFR instrument approach check for such type or class of aeroplane during the preceding 90 days;

(A) For operations at night, have made at least three take-offs and landings at night on the class of aeroplane in the single pilot role in the preceding 90 days; and

(B) have successfully completed training programmes that include passenger briefing with respect to emergency evacuation, autopilot management, and the use of simplified in-flight documentation.

(C) The initial and recurrent flight training and proficiency checks shall be performed by the pilot-in-command in the single pilot role on the class or type of aeroplane in an environment representative of the operation.

Appendix 1 to BCAR-OPS 1.945 Operator's conversion course

(See AMC OPS 1.945)
(See AMC OPS 1.943 /1.945(a)(9) /1.955(b)(6) /1.965(e))
(See AMC OPS 1.943 /1.945(a)(9) /1.955(b)(6) /1.965(e))
(See AMC OPS 1.945)

(a) The Operator's conversion course shall include:

(1) Ground training and checking including aeroplane systems, normal, abnormal and emergency procedures, which shall be checked by means of a questionnaire or other appropriate method;

(2) Emergency and safety equipment training and checking which must be completed before aeroplane training commences. Emergency and safety equipment training may be combined with emergency and safety equipment checking and they will be carried out in an aeroplane or suitable training device. Every year the emergency and safety equipment training programme shall include:

(i) Actual donning of a life jacket where fitted;

(ii) Actual donning of protective breathing equipment where fitted;

(iii) Actual handling of fire extinguishers;

(iv) Instruction on the location and use of all emergency and safety equipment carried on the aeroplane;

(v) Instruction on the location and use of all types of exits;

(vi) Security procedures;

(vii) Demonstration of the method used to operate a slide where fitted;

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

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

(x) Actual handling of pyrotechnics, real or simulated, where fitted, and

(xi) Demonstration in the use of the life-raft(s) where fitted.

(3) Aeroplane/STD training and checking; and

(4) Line flying under supervision and line check.

(b) The conversion course shall be conducted in the order set out in subparagraph (a) above.

(c) Elements of CRM shall be integrated into the conversion course, and conducted by suitably qualified personnel.

(1) a specific modular CRM training programme shall be established such that all major topics are covered, as follows:

(i) Human error and reliability, error chain, error prevention and detection;

(ii) Company safety culture, SOPs, organizational factors;

(iii) Stress, stress management, fatigue and vigilance:

(iv) Information acquisition and processing, situation awareness, workload management;

(v) Decision making;

(vi) Communication and coordination inside and outside the cockpit;

(vii) Leadership and team behaviour, synergy;

(viii) Automation and philosophy of the use of automation (if relevant to the type of aeroplane);

(ix) Specific type-related differences;

(x) Controlled flight into terrain (CFIT), approach and landing accident reduction (ALAR), and runway incursion (RWYI);

(xi) Case based studies;

(xii) Additional areas which warrant extra attention, as identified by the accident prevention and flight safety programme (See BCAR-OPS 1.037).

(d) When a flight crew member has not previously completed The Operator's conversion course, the operator shall ensure that in addition to subparagraph (a) above, the flight crew member undergoes general first aid training and, if applicable, ditching procedures training using the equipment in water.

Appendix 1 to BCAR-OPS 1.965 Recurrent training and checking – Pilots.

((See AMC OPS 1.965(AMC))
(See AMC OPS 1.943/1.945 (a) (9)/1.955(b) (6) /1.965(e))
(See AMC OPS 1.943/1.945 (a) (9)/1.955(b) (6) /1.965(e))
(See AMC OPS 1.965(AMC))
(See AMC to Appendix 1 to BCAR OPS 1.965)

(a) *Recurrent training* -- Recurrent training shall comprise:

(1) *Recurrent training shall comprise:*

(i) The ground and refresher training programme shall include:

(A) Aeroplane systems;

(B) Operational procedures and requirements including ground de-/anti-icing (See AMC OPS 1.345(a)) and pilot incapacitation (See AMC to Appendix 1 of BCAR-OPS 1.965)); and

(C) Accident/Incident and occurrence review.

(ii) Knowledge of the ground and refresher training shall be verified by a questionnaire or other suitable methods.

(2) *Aeroplane/STD training*:

(i) The aeroplane/STD training programme shall be established such that all major failures of aeroplane systems and associated procedures will have been covered in the preceding 3-year period.

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

(iii) Aeroplane/STD training may be combined with the operator proficiency check.

(3) *Emergency and safety equipment training*:

(i) Emergency and safety equipment training may be combined with emergency and safety equipment checking and shall be conducted in an aeroplane or a suitable alternative training device.

(ii) Every year the emergency and safety equipment training programme must include the following:

(A) Actual donning of a lifejacket where fitted;

(B) Actual donning of protective breathing equipment where fitted;

(C) Actual handling of fire extinguishers;

(D) Instruction on the location and use of all emergency and safety equipment carried on the aeroplane;

(E) Instruction on the location and use of all types of exits; and

(F) Security procedures.

(iii) Every 3 years the programme of training must include the following:

(A) Actual operation of all types of exits;

(B) Demonstration of the method used to operate a slide where fitted;

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

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

(E) Actual handling of pyrotechnics, real or simulated, where fitted, and;

(F) Demonstration in the use of the life-raft(s) where fitted.

(4) *Crew resource management (CRM)*

(i) Elements of CRM shall be integrated into all appropriate phases of recurrent training; and

(ii) A specific modular CRM training programme shall be established such that all major topics of CRM training are covered over a period not exceeding 3 years, as follows:

(A) Human error and reliability, error chain, error prevention and detection;

(B) Company safety culture, SOPs, organisational factors;

(C) Stress, stress management, fatigue and vigilance

(D) Information acquisition and processing, situation awareness, workload management;

(E) Decision making;

(F) Communication and coordination inside and outside the cockpit;

(G) Leadership and team behaviour, synergy;

(H) Automation and philosophy of the use of automation (if relevant to the type of aeroplane);

(I) Specific type-related differences;

(J) Controlled flight into terrain (CFIT), approach and landing accident reduction (ALAR), and runway incursion (RWYI);

(K) Case based studies;

(L) Additional areas which warrant extra attention, as identified by the accident prevention and flight safety programme (See BCAR-OPS 1.037).

(iii) Operators shall establish procedures to update their CRM recurrent training programme. Revision of the programme shall be conducted over a period not exceeding three years. The revision of the programme shall take into account the de-identified results of the CRM assessment of crews and information identified by the accident prevention and flight safety programme.

(b) *Recurrent checking*. Recurrent checking shall comprise:

(1) *Operator proficiency checks*

(i) Where applicable, operator proficiency checks shall include the following manoeuvres:

(A) Rejected take-off when a flight simulator is available to represent that specific aeroplane, otherwise touch drills only;

(B) Take-off with engine failure between V_1 and V_2 or as soon as safety considerations permit;

(C) Precision instrument approach to minima with, in the case of multi-engine aeroplanes, one engine inoperative.

(D) Non-precision approach to minima;

(E) Missed approach on instruments from minima with, in the case of multi-engine-aeroplanes, one engine inoperative; and

(F) Landing with one engine inoperative. For single-engine aeroplanes a practice forced landing is required.

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

(iii) In addition to the checks prescribed in subparagraphs (i)(A) to (F) above, the requirements applicable to the revalidation or renewal of the aeroplane Type or Class Rating must be completed every 12 months and may be combined with the operator proficiency check.

(iv) For a pilot operating VFR only, the checks prescribed in subparagraphs (i)(C) to (E) above may be omitted except for an approach and go-around in a multi-engine-aeroplane with one engine inoperative.

(v) Operator proficiency checks must be conducted by a Type Rating Examiner.

(2) *Emergency and safety equipment checks.* The items to be checked shall be those for which training has been carried out in accordance with subparagraph (a) (3) above.

(3) *Line checks*:

(i) Line checks must establish the ability to perform satisfactorily a complete line operation including pre-flight and post-flight procedures and use of the equipment provided, as specified in the Operations Manual.

(ii) The flight crew must be assessed on their CRM skills in accordance with a methodology acceptable to the BDCA and published in the Operations Manual. The purpose of such assessment is to:

(A) Provide feedback to the crew collectively and individually and serve to identify retraining; and

(B) Be used to improve the CRM training system.

(iii) A CRM assessment alone shall not be used as a reason for the failure of a line check.

(iv) When pilots are assigned duties as pilot flying and pilot non-flying, they must be checked in both functions.

(v) Line checks must be completed in an aeroplane.

(vi) Line checks must be conducted by qualified pilots in command nominated by the operator and acceptable to the BDCA. The person conducting the line check, who is described in BCAR-OPS 1.965(a) (4) (ii), shall be trained in CRM concepts and the assessment of CRM skills and shall occupy an observer's seat where installed. In the case of long-haul operations where additional operating flight crew are carried, the person may fulfil the function of a cruise relief pilot and shall not occupy either pilot's seat during take-off, departure, initial cruise, descent, approach and landing. CRM assessments shall solely be based on observations made during the initial briefing, cabin briefing, cockpit briefing and those phases where he/she occupies the observer's seat.

Appendix 2 to BCAR-OPS 1.965 Recurrent training and checking – Flight engineer.

(a) The recurrent training and checking for flight engineers shall meet the requirements for pilots and any additional specific duties, omitting those items that do not apply to flight engineers.

(b) Recurrent training and checking for flight engineers shall, whenever possible, take place concurrently with a pilot undergoing recurrent training and checking.

(c) A line check shall be conducted by a pilot in command nominated by the operator and acceptable to the BDCA or by a Flight Engineer Type Rating Instructor or Examiner.

Appendix 1 to BCAR-OPS 1.968 Pilot qualification to operate in either pilot's seat.

(a) Pilot in commands whose duties also require them to operate in the right-hand seat and carry out the duties of co-pilot, or pilot in commands required to conduct training or examining duties from the right hand seat, shall complete additional training and checking as specified in the Operations Manual, concurrent with the operator proficiency checks prescribed in BCAR-OPS 1.965(b). This additional training must include at least the following:

(1) An engine failure during take-off;

(2) A one engine inoperative approach and go-around; and

(3) A one engine inoperative landing

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

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

(d) A pilot relieving the pilot in command shall have demonstrated, concurrent with the operator proficiency checks prescribed in BCAR-OPS 1.965(c) practice of drills and procedures which would not, normally, be the relieving pilot's responsibility. Where the differences between left and right seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

(e) A pilot other than the pilot in command occupying the left-hand seat shall demonstrate practice of drills and procedures, concurrent with the operator proficiency checks prescribed in BCAR-OPS 1.965(b) which would otherwise have been the pilot in command's responsibility acting as pilot nonflying (PNF). Where the differences between left and right seats are not significant (for example because of use of autopilot) then practice may be conducted in either seat.

Appendix 1 to BCAR OPS 1.978 Intentionally left blank

Appendix 1 to BCAR-OPS 1.980 Operation in more than one type or variant

(See AMC OPS 1.980)

(a) When a flight crew member operates more than one aeroplane class, type or variant listed as determined in the requirements for applicable flight crew licences and associated procedures for the single pilot type or class rating, but not within a single licence endorsement, The Operator must comply with the following:

(1) A flight crew member shall not operate more than:

(i) Three piston engine aeroplane types or variants; or

(ii) Three turbo-propeller aeroplane types or variants; or

(iii) One turbo-propeller aeroplane type or variant and one piston engine aeroplane type or variant; or

(iv) One turbo-propeller aeroplane type or variant and any aeroplane within a particular class.

(2) BCAR-OPS 1.965 for each type or variant operated unless the operator has demonstrated specific procedures and/or operational restrictions which are acceptable to the BDCA.

(b) When a flight crew member operates more than one aeroplane type or variant within one or more licence endorsement as defined by flight crew licences and associated procedures for multi-pilot rating, The Operator shall ensure that;

(1) The minimum flight crew complement specified in the Operations Manual is the same for each type- multi pilot or variant to be operated;

(2) A flight crew member does not operate more than two aeroplane types or variants for which a separate licence endorsement is required; and

(3) Only aeroplanes within one licence endorsement are flown in any one-flight duty period unless the operator has established procedures to ensure adequate time for preparation. In cases where more than one licence endorsement is involved, see subparagraphs (c) and (d) below.

(c) When a flight crew member operates more than one aeroplane type or variant listed as determined in the flight crew licences and associated procedures for the single pilot or multi-pilot type or class rating, but not within a single licence endorsement, The Operator must comply with:

(1) Subparagraphs (b) (1) (b) (2) and (b) (3) above; and

(2) Subparagraph (d) below.

(d) When a flight crew member operates more than one aeroplane type or variant listed as determined in the flight crew licence and associated procedures for the single pilot or multi-pilot type or class rating, but not within a single licence endorsement, The Operator must comply with the following:

(1) Subparagraph (b) (1), (b) (2) and (b) (3) above;

(2) Before exercising the privileges of 2 licence endorsements:

(i) Flight crew members must have completed two consecutive operator proficiency checks and must have 500 hours in the relevant crew position in commercial air transport operations with the same operator.

(ii) In the case of a pilot having experience with The Operator and exercising the privileges of 2 licence endorsements and then being promoted to command with the same operator on one of those types, the required minimum experience as pilot in command is 6 months and 300 hours, and the pilot must have completed 2 consecutive operator proficiency checks before again being eligible to exercise 2 licence endorsements.

(3) Before commencing training for and operation of another type or variant, flight crew members must have completed 3 months and 150 hours flying on the base aeroplane which must include at least one proficiency check.

(4) After completion of the initial line check on the new type, 50 hours flying, or 20 sectors must be achieved solely on aeroplanes of the new type rating.

(5) BCAR-OPS 1.970 for each type operated unless credits have been allowed by the BDCA in accordance with subparagraph (7) below.

(6) The period within which line-flying experience is required on each type must be specified in the Operations Manual.

(7) Where credits are sought to reduce the training and checking and recent experience requirements between aeroplane types, the operator must demonstrate to the BDCA which items need not be repeated on each type or variant because of similarities. (See AMC OPS 1.980(c) and AMC OPS 1.980(c)).

(i) BCAR-OPS 1.965(b) requires two operator proficiency checks every year. When credit is given in accordance with subparagraph (7) above for operator proficiency checks to alternate between the two types, each operator proficiency check revalidates the operator proficiency check for the other type. Provided that the period between proficiency checks for revalidation or renewal of type rating does not exceed that prescribed in BCAR-LPTA for each type, the BCAR-LPTA requirements will be satisfied. In addition, relevant and approved recurrent training must be specified in the Operations Manual.

(ii) BCAR-OPS 1.965(c) requires one line check every year. When credit is given in accordance with subparagraph (7) above for line checks to alternate between types or variants, each line check revalidates the line check for the other type or variant.

(iii) Annual emergency and safety equipment training and checking must cover all requirements for each type.

(8) BCAR-OPS 1.965 for each type or variant operated unless credits have been allowed by the BDCA in accordance with subparagraph (7) above.

(e) When a flight crew member operates combinations of aeroplane types or variants as defined in the flight crew licences and the associated procedures for the single pilot or multi-pilot type or class rating, The Operator must demonstrate that specific procedures and/or operational restrictions are approved in accordance with BCAR-OPS 1.980 (d).

SUBPART O – CABIN CREW

BCAR-OPS 1.988 Applicability

(a) The operator shall ensure that all cabin crew members meet the requirements of this Subpart and any other applicable safety requirement.

(b) For purposes of this Regulation, «cabin crew member» refers to a crew member, other than a flight crew member, who performs in the interests of safety of passengers, duties assigned by the operator or the pilot-in-command of the aeroplane.

BCAR-OPS 1.989 Identification

(See AMC OPS 1.989)

(a) A cabin crew member is the person nominated by the operator to carry out tasks in the cabin. This person shall be identifiable to the passengers, by means of the cabin crew uniform. A cabin crew member should also comply with the requirements of this Subpart and other applicable BCAR-OPS 1 requirements.

(b) Other personnel, such as medical staff, security staff, child minders, escorts, technical staff, entertainers, interpreters, who undertake tasks in the cabin, shall not wear a uniform which might identify them to passengers as a cabin crew member, unless they comply with the requirements of this Subpart and any other applicable BCAR-OPS 1 requirements.

BCAR-OPS 1.990 Number and composition of cabin crew

(See AMC OPS 1.990)

(a) The Operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 19, when carrying one or more passengers, unless at least one cabin crew member is included in the crew for the purpose of performing duties, specified in the Operations Manual, in the interests of the safety of passengers.

(b) When complying with subparagraph (a) above, The Operator shall ensure that the minimum number of cabin crew is the greater of:

(1) One cabin crew member for every 50, or fraction of 50, passenger seats installed on the same deck of the aeroplane; or

(2) The number of cabin crew who actively participated in the aeroplane cabin during the relevant emergency evacuation demonstration, or who were assumed to have taken part in the relevant analysis, except that, if the maximum approved passenger seating configuration is less than the number evacuated during the demonstration by at least

50 seats, the number of cabin crew may be reduced by 1 for every whole multiple of 50 seats by which the maximum approved passenger seating configuration falls below the certificated maximum capacity.

(c) The BDCA may under exceptional circumstances require The Operator to include in the crew additional cabin crew members.

(d) In unforeseen circumstances the required minimum number of cabin crew may be reduced provided that:

(1) The number of passengers has been reduced in accordance with procedures specified in the Operations Manual; and

(2) A report is submitted to the BDCA after the completion of the flight.

(e) The Operator shall ensure that when engaging the services of cabin crew members who are self-employed and/or working on a freelance or part-time basis, the requirements of Subpart O are complied with. In this respect, particular attention must be paid to the total number of aeroplane types or variants that a cabin crew member may fly for commercial air transport, which must not exceed the requirements prescribed in BCAR-OPS 1.1030 including when his/her services are engaged by another operator.

BCAR-OPS 1.995 Minimum requirements

(See AMC OPS 1.995(a) (2))

(a) The Operator shall ensure that each cabin crew member:

(1) is at least 18 years of age;

(2) has passed a medical examination or assessment at regular intervals as required by the Authority to check the medical fitness to discharge his/her duties;

(3) has successfully completed initial training following BCAR OPS 1.1005 and holds an attestation of safety training;

(4) has completed the appropriate conversion and/or differences training covering at least the subjects listed in BCAR OPS 1.1010;

(5) shall undergo recurrent training in line with the provisions of BCAR OPS 1.1015;

(6) is competent to perform his/her duties in accordance with procedures specified in the Operations Manual.

(7) holds a license proving that its holder has the qualifications to perform assigned tasks.

BCAR-OPS 1.996 Single cabin crew operations

(a) The Operator shall ensure that each cabin crew member who does not have previous comparable experience, must complete the following before operating as a single cabin crew member:

(1) training in addition to that required by BCAR-OPS 1.1005 and 1.1010 shall include particular emphasis on the following to reflect single cabin crew operations:

(i) responsibility to the pilot in command for the conduct of cabin safety and emergency procedure(s) specified in the Operations Manual;

(ii) importance of coordination and communication with the flight crew, management of unruly or disruptive passengers;

(iii) review of operator's requirements and legal requirements;

(iv) documentation;

(v) accident and incident reporting;

(vi) flight and duty time limitations.

(2) Familiarisation flying of at least 20 hours and 15 sectors. Familiarisation flights shall be conducted under the supervision of a suitably experienced cabin crew member on the aeroplane type to be operated. See AMC-OPS1.1012 (3).

(b) The Operator shall ensure, before a cabin crew member is assigned to operate as a single cabin crew member that this cabin crew member is competent to perform his/her duties in accordance with the procedures specified in the Operations Manual. Suitability for single cabin crew operations shall be addressed in the criteria for cabin crew selection, recruitment, training, and assessment of competence.

BCAR-OPS 1.1000 Senior cabin crew member

(See AMC OPS 1.1000(c))

(a) The Operator shall nominate a senior cabin crew member whenever more than one cabin crew member is assigned. For operations when more than one cabin crew member is assigned, but only one cabin crew member is required, the operator shall nominate one cabin crew member to be responsible to the pilot in command.

(b) The senior cabin crew member shall have responsibility to the pilot in command for the conduct and coordination of normal and emergency procedure(s) specified in the Operations Manual. During turbulence, in the absence of any instructions from the flight crew, the senior cabin crew member shall be entitled to discontinue non-safety related

duties and advise the flight crew of the level of turbulence being experienced and the need for the fasten seat belt signs to be switched on. This should be followed by the cabin crew securing the passenger cabin and other applicable areas.

(c) Where required by BCAR-OPS 1.990 to carry more than one cabin crew member, The Operator shall not appoint a person to the post of senior cabin crew member unless that person has at least one year's experience as an operating cabin crew member and has completed an appropriate course (See AMC OPS 1.1000(c)).

(d) The Operator shall establish procedures to select the next most suitably qualified cabin crew member to operate as senior cabin crew member in the event of the nominated senior cabin crew member becoming unable to operate. Such procedures must be acceptable to the BDCA and take account of a cabin crew member's operational experience.

(e) CRM training: The Operator shall ensure that all relevant elements in Appendix 2 to BCAR-OPS 1.1005 / 1.1010 / 1.1015 Table 1, Column (a) are integrated into the training and covered to the level required by Column (f), Senior Cabin Crew Course.

(f) The operator should develop senior cabin crew member incapacitation procedures to select the next most qualified cabin crew member to act as cabin crew, the procedures must be acceptable to the BDCA and take into account the cabin crew member's operating experience.

BCAR-OPS 1.1005 Initial training

(See Appendix 1 to BCAR-OPS 1.1005)
(See Appendix 2 to BCAR-OPS 1.1005/ 1.1010 / 1.1015)
(See AMC OPS 1.1010/1.1015/1.1020)
(See AMC OPS 1.1005/ 1.1010/1.1015)
(See AMC OPS 1.1005/ 1.1010/1.1015)

(a) The Operator shall ensure that each cabin crew member has, before undertaking conversion training, successfully completed initial safety training covering at least the subjects listed in Appendix 1 to BCAR-OPS 1.1005.

(b) Training courses shall, at the discretion of the Authority, and subject to its approval, be provided either:

(1) by the operator
(A) directly, or

(B) indirectly through a training organisation acting on behalf of the operator; or

(2) by an approved training organisation.

(c) The programme and structure of the initial training courses shall be in accordance with the applicable requirements and shall be subject to prior approval of the Authority.

(d) At the discretion of the Authority, the Authority, the operator or the approved training organisation providing the training course, shall deliver an attestation of safety training to a cabin crew member after he/she has completed the initial safety training and successfully passed the check referred to in BCAR OPS 1.1025.

(e) Where the BDCA authorises The Operator or an approved training centre to deliver the attestation of safety training to a cabin crew member, such attestation shall clearly state a reference to the approval of the Authority.

(f) The instructor in charge of giving ground, flight and simulator training should not be the same person that conducts the proficiency check.

BCAR-OPS 1.1010 Conversion and differences training

(See Appendix 1 to BCAR-OPS 1.1010)
(See AMC OPS 1.1005/1.1010/1.1015/1.1020)

(See AMC OPS 1.1005/ 1.1010/1.1015)
(See Appendix 2 to AMC OPS 1.1005 / 1.1010 / 1.1015)

(a) The Operator shall ensure that each cabin crew member has completed appropriate training, as specified in the Operations Manual, before undertaking assigned duties as follows:

(1) *Conversion training*: a conversion course must be completed before being:

(i) First assigned by the operator to operate as a cabin crew member; or

(ii) Assigned to operate another aeroplane type; and

(2) *Differences training*: differences training must be completed before operating:

(i) On a variant of an aeroplane type currently operated; or
(ii) With different safety equipment, safety equipment location, or normal and emergency procedures on currently operated aeroplane types or variants.

(b) The Operator shall determine the content of the conversion or differences training taking account of the cabin crew member's previous training as recorded in the cabin crew member's training records required by BCAR-OPS 1.1035.

(c) Without prejudice to BCAR OPS 1.995 (a) (3), related elements of both initial training (BCAR OPS 1.1005) and conversion and differences training (BCAR OPS 1.1010) may be combined.

(d) The Operator shall ensure that:

(1) Conversion training is conducted in a structured and realistic manner, in accordance with Appendix 1 to BCAR-OPS 1.1010;

(2) Differences training is conducted in a structured manner; and

(3) Conversion training, and if necessary, differences training, includes the use of all safety equipment and all normal and emergency procedures applicable to the type or variant of aeroplane and involves training and practice on either a representative training device or on the actual aeroplane.

(e) Conversion and differences training programmes, in accordance with Appendix 1 to BCAR-OPS 1.1010, shall be approved by the BDCA.

(f) The Operator shall ensure that each cabin crew member completes the Operator's CRM Training and Aeroplane Type Specific CRM, in accordance with Appendix 1 to BCAR-OPS 1.1010 (k), prior to assigned duties. Cabin crew who are already operating as cabin crew members with The Operator, and who have not previously completed the Operator's CRM Training, shall complete this training by the time of the next required recurrent training and checking in accordance with Appendix 1 to BCAR-OPS 1.1010 (l), including Aeroplane Type Specific CRM, as relevant.

BCAR-OPS 1.1012 Familiarization

(See AMC OPS 1.1012)

The Operator shall ensure that, following completion of conversion training, each cabin crew member undertakes familiarization prior to operating as one of the minimum numbers of cabin crew required by BCAR-OPS 1.990.

BCAR-OPS 1.1015 Recurrent training

(See Appendix 1 to BCAR-OPS 1.1015)
(See AMC OPS 1.1015)
(See AMC OPS 1.1005/1010/1015/1020)
(See AMC OPS 1.1005/ 1.1010/1.1015
(See Appendix 2 to AMC OPS 1.1005 / 1.1010/1.1015)

(a) The Operator shall ensure that each cabin crew member undergoes recurrent training, covering the actions assigned to each crew member in normal and emergency procedures and drills relevant to the type(s) and/or variant(s) of aeroplane on which they operate in accordance with Appendix 1 to BCAR-OPS 1.1015.

(b) The Operator shall ensure that the recurrent training and checking programme, approved by the BDCA, includes theoretical and practical instruction, together with individual practice, as prescribed in Appendix 1 to BCAR-OPS 1.1015.

(c) The period of validity of recurrent training and the associated checking required by BCAR-OPS 1.1025 shall be 12 calendar months in addition to the remainder of the month of issue. If issued within the final 3 calendar months of validity of a previous check, the period of validity shall extend from the date of issue until 12 calendar months from the expiry date of that previous check.

BCAR-OPS 1.1020 Refresher training

(See Appendix 1 to BCAR-OPS 1.1020)
(See AMC OPS 1.1020)
(See AMC OPS 1.1020(a))
(See AMC OPS 1.1005/1010/1015/1020)

(a) The Operator shall ensure that each cabin crew member who has been absent from all flying duties for more than 3 months and remains within the period of validity of the previous check required by BCAR-OPS 1.1025 (b) (3), completes refresher training specified in the

Operations Manual as prescribed in Appendix 1 to BCAR-OPS 1.020. (See AMC OPS 1.1020(a))

(b) The Operator shall ensure that when a cabin crew member has not been absent from all flying duties, but has not, during the preceding 6 months, undertaken duties on a type of aeroplane as a cabin crew member required by BCAR-OPS 1.990(b), before undertaking such duties on that type, the cabin crew member either:

(1) completes refresher training on the type; or

(2) operates two refamiliarization sectors as defined in AMC-OPS 1.1012, paragraph 3.

BCAR-OPS 1.1025 Verification

(See AMC OPS 1.1025)

(a) The Operator shall ensure that during or following completion of the training required by BCAR-OPS 1.1005, 1.1010 and 1.1015 each cabin and flight crew member undergoes a check covering the training received to verify his/her proficiency in carrying out normal and emergency safety duties. These checks must be performed by personnel acceptable to the BDCA.

(b) The Operator shall ensure that each cabin crew member undergoes checks as follows:

(1) *initial training*. The items listed in Appendix 1 to BCAR-OPS 1.1005;

(2) *conversion and differences training*. The items listed in Appendix 1 to BCAR-OPS 1.1010; and

(3) *recurrent training*. The items listed in Appendix 1 to BCAR-OPS 1.1015 as appropriate.

(4) *refresher training*. The items listed in Appendix 1 to BCAR OPS 1.1020.

BCAR-OPS 1.1030 Operation on more than one type or variant

(See AMC OPS 1.1030)

(a) The Operator shall ensure that each cabin crew member does not operate on more than three aeroplane types except that, with the approval of the BDCA the cabin crew member may operate on four aeroplane types, provided that for at least two of the types:

(1) non-type specific normal and emergency procedures are identical; and

(2) safety equipment and type specific normal and emergency procedures are similar.

(b) For the purposes of subparagraph (a) above, variants of an aeroplane type are different types if they are not similar in each of the following aspects:

(1) emergency exit operation;

(2) location and type of portable safety equipment; and

(3) type specific emergency procedures.

BCAR-OPS 1.1035 Training records

(See AMC OPS 1.1035)

(a) The operator shall:

(1) maintain records of all training and checking required by BCAR-OPS 1.1005, 1.1010, 1.1015, 1.1020, and 1.1025; and

(2) make the records of all initial, conversion and recurrent training and checking available, on request, to the cabin crew member concerned.

BCAR* OPS 1.1036 Cabin crew instructors for a *AOC

(a) A cabin crew instructor is a person who is qualified to instruct cabin crew members in the type of airplane to be operated;

(b) All candidates must have the qualifications as a member of the cabin crew to start and maintain as an instructor while in the service of the operator.

(c) Must have passed a course of instruction, fundamentals of instruction, or the like.

(d) Must be evaluated by this Authority and submitted for approval for renewal as an instructor, at least every 12 months.

(e) To act as a cabin crew instructor in a training program established in this subpart, with respect to the type of aircraft, each applicant must comply with the following:

(1) The Operator must submit the request to the Authority for the respective approval:

(2) Be the holder of the cabin crew license issued in accordance with the BCAR LPTA and the corresponding valid ratings.

(3) have at least 5 years of cabin crew experience on the type of aircraft in which training is to be provided.

(4) The BDCA may consider previous experience (5 years) in the event that the aircraft type is new to the operator's fleet;

(5) These requirements do not prevent an expert in a given subject from being authorized to give instruction related to his specialty.
(6) Each instructor, in order to maintain their competencies in the type of aircraft and company procedures, must perform at least one operation in 4 sectors, as regular cabin crew, every 3 months in the authorized equipment.

(7) Have satisfactorily completed the phases of training appropriate to the airplane, including recurrent training and appropriate academic aptitude assessments and appropriate competency checks, required to serve as a cabin crew member;

(8) Have satisfactorily completed the training and verification requirements prescribed in Appendix 1 to BCAR OPS 1.1036, required to perform as a cabin crew instructor.

(f) The period of validity of the recurrent training and its corresponding verifications, which are required in BCAR OPS 1.1005, BCAR OPS 1.1010, BCAR OPS 1.1015, BCAR OPS 1.1020, BCAR OPS 1.1025 must be 12 calendar months counted from the last day of the month in which they were made.

(g) The experience and qualifications of the instructors authorized by the Authority shall be established in the operator's training program.

(h) The validity period of the recurrent training as Cabin Crew Instructor established in Appendix 1 to BCAR OPS 1.1036 will be 24 calendar months in order to keep their knowledge updated, in correspondence with the tasks and responsibilities assigned and based on the Program. instructions established in the Operations Manual.

(i) The instruction indicated in Paragraph (e) above must include training in the knowledge and skills related to human performance, refresher courses in new technology and training techniques for the knowledge imparted or verified.

Appendix 1 to BCAR-OPS 1.1005

Conversion training
(See AMC to Appendix 1 to BCAR-OPS 1.005/1.1015))
(See AMC to Appendix 1 to BCAR-OPS 1.1005/1.1015)
(See AMC to Appendix 1 to BCAR-OPS 1.1005/1.1015/1.1020)
(See AMC to Appendix 1 to BCAR-OPS 1.1005/1.1010/1.1015/1.1020 (AMC) and AMC to Appendix 1 to BCAR OPS 1.1005/1.1010/1.1015/1.1020)
(See Appendix 3 to BCAR OPS 1.1005/1.1010/1.1015)

(a) The operator shall establish and maintain a training programme, approved by the Operator’s BDCA, to be completed by all persons before being assigned as a cabin crew

member. Cabin crew members shall complete a recurrent training programme annually. These training programmes shall ensure that each person is:

(1) competent to execute those safety duties and functions which the cabin crew member is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;

(2) drilled and capable in the use of emergency and life-saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment, first-aid and universal precaution kits, and automated external defibrillators.

(3) When serving on aeroplanes operated above 3 000 m (10 000 ft.), knowledgeable as regards the effect of lack of oxygen and, in the case of pressurized aeroplanes, as regards physiological phenomena accompanying a loss of pressurization;

(4) aware of other crew members' assignments and functions in the event of an emergency so far as is necessary for the fulfilment of the cabin crew member's own duties;

(5) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and

(6) knowledgeable about human performance as related to passenger cabin safety duties including flight crew - cabin crew coordination.

(b) *Fire and smoke training*. The Operator shall ensure that fire and smoke training includes:

(1) Emphasis on the responsibility of cabin crew to deal promptly with emergencies involving fire and smoke and, in particular, emphasis on the importance of identifying the actual source of the fire;

(2) The importance of informing the flight crew immediately, as well as the specific actions necessary for coordination and assistance, when fire or smoke is discovered;

(3) The necessity for frequent checking of potential fire-risk areas including toilets, and the associated smoke detectors;

(4) The classification of fires and the appropriate type of extinguishing agents and procedures for particular fire situations, the techniques of application of extinguishing agents, the consequences of misapplication, and of use in a confined space; and

(5) The general procedures of ground- based emergency services at aerodromes.

(c) *Water survival training.* The Operator shall ensure that water survival training includes the actual donning and use of personal flotation equipment in water by each cabin crew member. Before first operating on an aeroplane fitted with life rafts or other similar

equipment, training must be given on the use of this equipment, as well as actual practice in water.

(d) *Survival training*. The Operator shall ensure that survival training is appropriate to the areas of operation, (e.g., polar, desert, jungle, or sea).

(e) *Medical aspects and first aid*. The operator shall ensure that medical and first aid training includes:

(1) instruction on medical aspects and first aid, first-aid kits, emergency medical kits, their contents and emergency medical equipment;

(2) First aid associated with survival training and appropriate hygiene; and

(3) The physiological effects of flying and with particular emphasis on hypoxia.

(f) *Passenger handling.* The Operator shall ensure that training for passenger handling includes the following:

(1) advice on the recognition and management of passengers who are, or become, intoxicated with alcohol or are under the influence of drugs or are aggressive;

(2) methods used to motivate passengers and the crowd control necessary to expedite an aeroplane evacuation;

(3) regulations covering the safe stowage of cabin baggage (including cabin service items) and the risk of it becoming a hazard to occupants of the cabin or otherwise obstructing or damaging safety equipment or aeroplane exits;

(4) the importance of correct seat allocation with reference to aeroplane weight and balance. Particular emphasis shall also be given on the seating of disabled passengers, and the necessity of seating able-bodied passengers adjacent to unsupervised exits;

(5) duties to be undertaken in the event of encountering turbulence including securing the cabin;

(6) precautions to be taken when live animals are carried in the cabin;

(7) dangerous goods training as prescribed in Subpart R; and

(8) security procedures, including the provisions of Subpart S.

(g) *Communication*. The Operator shall ensure that, during training, emphasis is placed on the importance of effective communication between cabin crew and flight crew including technique, common language, and terminology.

(h) *Discipline and responsibilities.* The Operator shall ensure that each cabin crew member receives training on:

(1) the importance of cabin crew performing their duties in accordance with the Operations Manual;

(2) continuing competence and fitness to operate as a cabin crew member with special regard to flight and duty time limitations and rest requirements;

(3) an awareness of the aviation regulations relating to cabin crew and the role of the Authority;

(4) general knowledge of relevant aviation terminology, theory of flight, passenger distribution, meteorology and areas of operation;

(5) pre-flight briefing of the cabin crew and the provision of necessary safety information with regard to their specific duties;

(6) the importance of ensuring that relevant documents and manuals are kept up to date with amendments provided by the operator.

(7) the importance of identifying when cabin crew members have the authority and responsibility to initiate an evacuation and other emergency procedures; and

(8) the importance of safety duties and responsibilities and the need to respond promptly and effectively to emergency situations.

(i) *Crew resource management* (CRM)

The Operator shall ensure that CRM training satisfies the following:

(1) Introductory CRM course:

(i) The operator shall ensure that a cabin crew member has completed an introductory CRM course before being first assigned to operate as a cabin crew member. Cabin crew, who are already operating as cabin crew members in commercial air transport and who have not previously completed an introductory course, shall complete an introductory CRM Course by the time of the next required recurrent training and/or checking.

(ii) The training elements in Appendix 2 to BCAR-OPS 1.1005/1.1010/1.1015 Table 1, Column (a) shall be covered to the level required in column (b), Introductory CRM Course.

(iii) The introductory CRM course shall be conducted by at least one cabin crew CRM instructor.

Appendix 1 to BCAR-OPS 1.1010 Conversion and differences training
(See AMC to Appendix 1 to BCAR-OPS 1.1010/1.1015)
(See AMC to Appendix 1 to BCAR-OPS 1.1005/1.1010/1.1015/1.1020)
(See AMC to Appendix 1 to BCAR OPS 1.1005/1.1010/1.1015/1.1020)
(See AMC OPS 1.005/1.1010/1.1015)
(See AMC OPS 1.001/1.1010/1.1015/1.1020)
(See Appendix 3 to BCAR OPS 1.1005/1.1010/1.1015)

(a) *General*. The operator shall ensure that:

(1) conversion and differences training are conducted by suitably qualified persons; and

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

(b) *Fire and smoke training*. The operator shall ensure that:

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

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

(ii) the donning and use of protective breathing equipment by each cabin crew member in an enclosed, simulated smoke-filled environment.

(c) *Operation of doors and exits*. The Operator shall ensure that:

(1) Each cabin crew member operates and opens each type or variant of normal and emergency exits in the normal and emergency modes, including failure of power assist systems where fitted. This is to include the action and forces required to operate and deploy evacuation slides. This training shall be conducted in an aeroplane or representative training device; and

(2) The operation of all other exits, such as flight deck windows is demonstrated.

(d) *Evacuation slide training*. The Operator shall ensure that:

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

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

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

(e) *Evacuation procedures and other emergency situations*. The operator shall ensure that:

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

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

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

(ii) severe air turbulence;

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

(iv) other in-flight emergencies.

(f) *Crowd control.* The Operator shall ensure that training is provided on the practical aspects of crowd control in various emergency situations, as applicable to the aeroplane type.

(g) *Pilot incapacitation*. The Operator shall ensure that, unless the minimum flight crew is more than two, each cabin crew member is trained in the procedure for flight crew member incapacitation. This training shall include a demonstration of:

(1) pilot's seat mechanism;

(2) fasten/unfasten of pilot’s seat harness;

(3) use of flight crew members’ oxygen system; and

(4) use of the flight crew members’ checklists.

(h) *safety equipment*. The Operator shall ensure that each cabin crew member is given realistic training on, and demonstration of, the location and use of safety equipment including the following:

(1) slides, and where non-self-supporting slides are carried, the use of any associated ropes;
(2) life-rafts and slide-rafts, including the equipment attached to, and/or carried in, the raft;

(3) lifejackets, infant lifejackets and flotation cots;

(4) dropout oxygen system;

(5) first-aid oxygen;

(6) fire extinguishers;

(7) fire axe or crow-bar;

(8) emergency lights including torches;

(9) communications equipment, including megaphones;

(10) survival packs, including their contents;

(11) pyrotechnics (Actual or representative devices);

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

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

2. *Passenger briefing/safety demonstrations*. The Operator shall ensure that training is given in the preparation of passengers for normal and emergency situations in accordance with BCAR-OPS 1.285.

3. The Operator shall ensure that all appropriate BCAR-OPS requirements are included in the training of cabin crew members.

4. When initial medical aspects and first aid training has not included the avoidance of infectious diseases, especially in tropical and sub-tropical climates, such training shall be provided if The Operator's route network is extended or changed to include such areas.

5. CRM, The Operator shall ensure that:

(1) each cabin crew member completes the operator's CRM training covering the training elements in Appendix 2 to BCAR-OPS 1.1005/1.1010/1.1015 Table 1, column (a) to the level required in column (c) before undertaking subsequent aeroplane type specific CRM and/or recurrent CRM training.

(2) when a cabin crew member undertakes a conversion course on another aeroplane type, the training elements in Appendix 2 to BCAR-OPS 1.1005 / 1.1010 / 1.1015 Table 1, column (a), shall be covered to the level required in column (d), aeroplane type specific CRM.

(3) the Operator's CRM Training and aeroplane type specific CRM shall be conducted by a least one cabin crew CRM instructor.

Appendix 1 to BCAR-OPS 1.1015 Recurrent training

(See AMC to Appendix 1 to BCAR-OPS 1.1005/1.1010/1.1015/1.1020)
(See AMC to Appendix 1 to BCAR-OPS 1.1005/1.1010/1.1015/1.1020)
(See AMC OPS 1.1005/1.1010/1.1015/1.1020)

(a) The Operator shall ensure that recurrent training is conducted by suitably qualified persons.

(b) The Operator shall ensure that every 12 calendar months the programme of practical training includes the following:

(1) emergency procedures including pilot incapacitation;

(2) evacuation procedures including crowd control techniques;

(3) touch-drills by each cabin crew member for opening normal and emergency exits for passenger evacuation;

(4) the location and handling of emergency equipment, including oxygen systems, and the donning by each cabin crew member of lifejackets, portable oxygen and protective breathing equipment (PBE);

(5) first aid and its contents.

(6) stowage of articles in the cabin;

(7) security procedures;

(8) incident and accident review; and

(9) crew resource management. The Operator shall ensure that CRM training satisfies the following:

(i) the training elements in Appendix 2 to BCAR-OPS 1.1005 / 1.1010 / 1.1015 Table 1, column (a) shall be covered within a three-year cycle to the level required by column (e), Annual Recurrent CRM Training;

(ii) the definition and implementation of this syllabus shall be managed by a cabin crew CRM instructor;

(iii) when CRM training is provided by stand-alone modules, it shall be conducted by at least one cabin crew CRM instructor.

(c) The Operator shall ensure that, at intervals not exceeding 3 years, recurrent training also includes:

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

(2) demonstration of the operation of all other exits including flight deck windows;

(3) each cabin crew member being given realistic and practical training in the use of all firefighting equipment, including protective clothing, representative of that carried in the aeroplane. This training must include:

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

(ii) the donning and use of protective breathing equipment by each cabin crew member in an enclosed, simulated smoke-filled environment.

(4) use of pyrotechnics (actual or representative devices); and

(5) demonstration of the use of the life raft, or slide-raft, where fitted.

(6) The Operator shall ensure that, unless the minimum flight crew is more than two, each cabin crew member is trained in the procedure for flight crew member incapacitation and shall operate the flight crew members' seat and harness mechanisms. Training in the use of the flight crew members' oxygen system and use of flight crew member's checklists, where required by the operator's SOPs, shall be conducted by a practical demonstration.

(d) The Operator shall ensure that all appropriate BCAR-OPS requirements are included in the training of cabin crew members.

Appendix 1 to BCAR-OPS 1.1020 Refresher training

(See AMC OPS 1.1005/1.1010/1.1015/1.1020)
(See AMC to Appendix 1 to BCAR OPS 1.1005/1.1010/1.1015/1.1020)

(a) The Operator shall ensure that refresher training is conducted by suitably qualified persons and that each cabin crew member is, at least, provided with the following:

(1) emergency procedures including pilot incapacitation;

(2) evacuation procedures including crowd control techniques;

(3) the operation and actual opening of each type or variant of normal and emergency exit in the normal and emergency modes, including failure of power assist systems where fitted. This is to include the action and forces required to operate and deploy evacuation slides. This training shall be conducted in an aeroplane or representative training device;

(4) demonstration of the operation of all other exits including flight deck windows; and

(5) the location and handling of emergency equipment, including oxygen systems, and the donning by each cabin crew member of lifejackets, portable oxygen, and protective breathing equipment (PBE).

Appendix 2 to BCAR-OPS 1.1005/1.1010/1.1015 Training

(See AMC to Appendix 2 to BCAR-OPS 1.1005/ 1.1010/1.1015)

(a) The CRM training syllabi, together with CRM methodology and terminology, shall be included in the Operations Manual

(b) Table 1 indicates which elements of CRM shall be included in each type of training.

Table 1 CRM TRAINING:

Training Elements (a)	Introductory CRM Course (b)	Operator's CRM course (c)	Aeroplane Type Specific CRM (d)	Annual Recurrent CRM Training (e)	Senior Cabin Crew Course (f)
General Principles					
Human factors in aviation General instructions on CRM principles and objectives	In depth	Not required	Not required	Not required	Overview
Human performance and limitations					
From the perspective of the individual cabin crew member					
Personality awareness, human errors, reliability, attitudes and behaviours	In depth	Not required	Not required	Overview (3-year cycle)	Not required
Stress and stress management					
Fatigue and vigilance					
Assertiveness					
Situation awareness, information acquisition and processing					
From the perspective of the whole aeroplane crew					
Error prevention and detection	Not required	In depth	Relevant to the type(s)	Overview (3-year cycle)	Reinforcement (relevant to the senior cabin crew duties)
Shared situation awareness, information acquisition & processing					
Workload management					
Effective communication and coordination between all crew members including the flight crew as well as inexperienced cabin crew members, cultural differences					
Leadership, co-operation, synergy, decision making, and delegation					
Individual and team responsibilities, decision making, and actions					
Identification and management of the passenger human factors: crowd control, passenger stress, conflict management, medical factors					

Specifics related to the aeroplane types (narrow / Wide bodies, single / multi deck), flight crew and cabin crew composition and number of passengers		Not required	In depth		

From the perspective of the operator and the organisation					
Company safety culture, SOPs, organisational factors, factors linked to the type of operations	Not required	In depth	Relevant to the type(s)	Overview (3-year cycle)	Reinforcement (relevant to the Senior cabin crew duties)
Effective communication and coordination with other operational personnel and ground services					
Participation in cabin safety incident and accident reporting					
Case based studies (see note)		Required		Required	

(c) In column (d), if relevant aeroplane types of specific case studies are not available, then case based studies relevant to the scale and scope of the operation shall be considered.

Appendix 3 to BCAR OPS 1.1005/1.1010/1.1015 Medical aspects and first aid training

(See Appendix 1 to BCAR OPS 1.1005, 1.1010, 1.1015)

Medical aspects and first aid training shall include the following subjects:

(1) physiology of flight including oxygen requirements and hypoxia;

(2) medical emergencies in aviation including:

i. asthma;

ii. choking;

iii. heart attacks;

iv. stress reactions and allergic reactions;

v. shock;

vi. stroke;

vii. epilepsy;

viii. diabetes;

ix. air sickness;

x. hyperventilation;

xi. gastro-intestinal disturbances; and

xii. emergency childbirth;

(3) practical cardio-pulmonary resuscitation by each cabin crew member having regard to the aeroplane environment and using a specifically designed dummy;

(4) basic first aid and survival training including care of:

i. the unconscious;

ii. burns;

iii. wounds; and

iv. fractures and soft tissue injuries;

(5) travel health and hygiene including:

i. the risk of contact with infectious diseases especially when operating into tropical and sub-tropical areas.

ii. hygiene on board;

iii. death on board;

iv. handling of clinical waste;

v. aeroplane disinfection; and

vi. alertness management, physiological effects of fatigue, sleep physiology, circadian rhythm, and time zone changes.

(6) The use of appropriate aeroplane equipment including first aid kits, emergency medical kits, first aid oxygen and emergency medical equipment.

Appendix 1 to BCAR OPS 1.1036 Training requirements

(a) Initial and recurrent training for cabin crew instructors must include the following:

(1) Duties, roles, responsibilities, and limitations of the cabin crew instructor;

(2) Applicable regulations and operator policies and procedures;

(3) Appropriate methods, procedures, and techniques for conducting both face-to-face and virtual instruction, if applicable;

(4) Fundamental principles of the learning process;

(5) Appropriate evaluation of cabin crew performance.

(6) Personal characteristics of the cabin crew that could adversely affect flight safety.

(7) Appropriate corrective action in the event of unsatisfactory checks.

(8) Crew Resource Management (CRM) and Dangerous Goods Training

SUBPART P – MANUALS, LOGS, AND RECORDS

BCAR-OPS 1.1040 General rules for operations manuals

(See AMC OPS 1.1040(b))
(See AMC OPS 1.1040(c))

(a) The Operator shall ensure that the Operations Manual contains all instructions and information necessary for operations personnel to perform their duties.

(b) The Operator shall ensure that the contents of the Operations Manual, including all amendments or revisions, do not contravene the conditions contained in the Air Operator Certificate (AOC) or any applicable regulations and are acceptable to, or, where applicable, approved by, the BDCA. (See AMC OPS 1.1040 (b)).

(c) Unless otherwise approved by the BDCA or prescribed by national regulations The Operator must prepare the Operations Manual in English language. In addition, The Operator may translate and use that manual, or parts thereof, into another language. (See AMC OPS 1.1040(c)).

(d) Should it become necessary for The Operator to produce new Operations Manuals or major parts/volumes thereof, it must comply with subparagraph (c) above.

(e) The Operator may issue an Operations Manual in separate volumes.

(f) The Operator shall ensure that all operations personnel have easy access to a copy of each part of the Operations Manual which is relevant to their duties. In addition, the operator shall supply crew members with a personal copy of, or sections from, Parts A and B of the Operations Manual as are relevant for personal study.

(g) The Operator shall ensure that the Operations Manual is amended or revised so that the instructions and information contained therein are kept up to date. The operator shall ensure that all operations personnel are made aware of such changes that are relevant to their duties.

(h) Each holder of an Operations Manual, or appropriate parts of it, shall keep it up to date with the amendments or revisions supplied by the operator.

(i) The Operator shall supply the BDCA with intended amendments and revisions in advance of the effective date. When the amendment concerns any part of the Operations Manual which must be approved in accordance with BCAR-OPS, this approval shall be obtained before the amendment becomes effective. When immediate amendments or revisions are required in the interest of safety, they may be published and applied immediately, provided that any approval required has been applied for.

(j) The Operator shall incorporate all amendments and revisions required by the BDCA.

(k) The Operator must ensure that information taken from approved documents, and any amendment of such approved documentation, is correctly reflected in the Operations Manual and that the Operations Manual contains no information contrary to any approved documentation. However, this requirement does not prevent The Operator from using more conservative data and procedures.

(l) The Operator must ensure that the contents of the Operations Manual are presented in a form in which they can be used without difficulty. The design of the Operations Manual shall observe human factors principles.

(m) The Operator may be permitted by the BDCA to present the Operations Manual or parts thereof in a form other than on printed paper. In such cases, an acceptable level of accessibility, usability and reliability must be assured.

(n) The use of an abridged form of the Operations Manual does not exempt the operator from the requirements of BCAR-OPS 1.130.

BCAR-OPS 1.1045 Operations Manual – Structure and contents

(See Appendix 1 to BCAR-OPS 1.1045)
(See AMC-OPS 1.1045)

(a) The Operator shall ensure that the main structure of the Operations Manual is as follows:

Part A. *General*

This part shall comprise all non-type-related operational policies, instructions and procedures needed for a safe operation.

Part B. *Aeroplane operating matters*

This part shall comprise all type-related instructions and procedures needed for a safe operation. It shall take account of any differences between types, variants or individual aeroplanes used by the operator.

Part C. *Route and aerodrome instructions and information*

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

Part D. *Training*

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

(b) The Operator shall ensure that the contents of the Operations Manual are in accordance with Appendix 1 to BCAR-OPS 1.1045 and relevant to the area and type of operation.

(c) The Operator shall ensure that the detailed structure of the Operations Manual is acceptable to the BDCA. (See AMC OPS 1.1045 (c)).

BCAR-OPS 1.1050 Aircraft Operating manual

The flight manual shall be updated according to the changes that the State of Registry has established as mandatory. The operator shall provide operations personnel and flight crew with an up-to-date aircraft operating manual, or equivalent document, for each aeroplane operated, containing the normal, abnormal and emergency procedures relating to the operation of the aeroplane. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual shall observe human factors principles.

BCAR-OPS 1.1055 Journey log

(See AMC OPS 1.1055(a) (12))
(See AMC OPS 1.1055(b))

(a) The Operator shall retain the following information for each flight in the form of a journey log:

(1) aeroplane registration;

(2) date;

(3) name(s) of crew members;

(4) duty assignment of crew member(s);

(5) place of departure;

(6) place of arrival;

(7) time of departure (off-block time);

(8) time of arrival (on-block time);

(9) hours of flight;

(10) nature of flight;

(11) incidents, observations (if any); and

(12) pilot in command's signature (or equivalent). (See AMC OPS 1.1055(a) (12)).

(b) The Operator may be permitted not to keep an aeroplane journey log, or parts thereof, by the BDCA if the relevant information is available in other documentation. (See AMC OPS 1.1055 (b)).

(c) The Operator shall retain a completed journey log to provide a continuous record of the last six month's operations. All entries shall be made currently and with indelible ink.

BCAR-OPS 1.1060 Operational flight plan

(a) The Operator must ensure that an operational flight plan is prepared for every intended flight. The operational flight plan shall be approved and signed by the pilot-in-command and, where applicable, signed by the flight operations officer/flight dispatcher, and a copy shall be filed with the operator or a designated agent, or, if these procedures are not possible, it shall be left with the aerodrome authority or on record in a suitable place at the point of departure.

(b) The Operator must ensure that the operational flight plan used, and the entries made during flight contain the following items:

(1) aeroplane registration;

(2) aeroplane type and variant;

(3) date of flight;

(4) flight identification;

(5) names of flight crew members;

(6) duty assignment of flight crew members;

(7) place of departure;

(8) time of departure (actual off-block time, take-off time);

(9) place of arrival (planned and actual);

(10) time of arrival (actual landing and on-block time);

(11) type of operation (VFR, ferry flight, etc);

(12) route and route segments with checkpoints/waypoints, distances, time and tracks;

(13) planned cruising speed and flying times between check-points/waypoints. Estimated and actual times overhead;

(14) safe altitudes and minimum levels;

(15) planned altitudes and flight levels;

(16) fuel calculations (records of in-flight fuel checks);

(17) fuel on board when starting engines;

(18) alternate(s) for destination and, where applicable, take-off and en-route, including information required in subparagraphs (12), (13), (14), and (15) above;

(19) initial ATS flight plan clearance and subsequent clearance;

(20) in-flight re-planning calculations;

(21) relevant meteorological information; and

(22) signature of pilot-in-command and dispatcher.

(c) Items which are readily available in other documentation or from another acceptable source or are irrelevant to the type of operation may be omitted from the operational flight plan.

(d) The Operator must ensure that the operational flight plan and its use are described in the Operations Manual.

(e) The Operator shall ensure that all entries on the operational flight plan are made concurrently and that they are permanent in nature.

BCAR-OPS 1.1065 Document storage periods

The Operator shall ensure that all records and all relevant operational and technical information for each individual flight are stored for the periods prescribed in Appendix 1 to BCAR-OPS 1.1065.

BCAR-OPS 1.1070 Operator's Maintenance Management Exposition (MME)

The Operator shall keep a current approved Maintenance Management Exposition as prescribed in BCAR-OPS 1.905. Unless the BDCA states something different, or specified by national regulations, the operator shall prepare the Maintenance Management Exposition in English. Furthermore, the operator may translate and use this manual or some parts in another language.

BCAR-OPS 1.1071 **Aeroplane technical log**

The Operator shall keep an aeroplane technical log as prescribed in BCAR-OPS 1.915.

BCAR-OPS 1.1072 Information on continuing airworthiness

(a) The operator of an aircraft whose maximum certificated take-off mass is greater than 5,700 kg shall monitor and evaluate the maintenance and operational experience with respect to continuing airworthiness and shall provide the information prescribed by the BDCA.

(b) The operator of an airplane with a maximum certificated take-off mass greater than 5,700 kg shall obtain and evaluate information relating to continuing airworthiness and the recommendations available from the entity responsible for the type design and apply the resulting measures considered required in accordance with a procedure acceptable to the State of Registry.

Appendix 1 to BCAR-OPS 1.1045 Operational Manual Contents

(See AMC to Appendix 1 to BCAR-OPS 1.1045)

The Operator shall ensure that the Operations Manual contains the following:

A. GENERAL

ADMINISTRATION AND CONTROL OF OPERATIONS MANUAL

0.1 *Introduction*

(a) A statement that the manual complies with all applicable regulations and with the terms and conditions of the applicable Air Operator Certificate (AOC).

(b) A statement that the manual contains operational instructions that are to be complied with by the relevant personnel.

(c) A list and brief description of the various parts, their contents, applicability, and use.

(d) Explanations and definitions of terms and words needed for the use of the manual.

0.2 *System of amendment and revision*

(a) Details of the person(s) responsible for the issuance and insertion of amendments and revisions.

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

(c) A statement that handwritten amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of 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). Amendments to the operation manual will be indicated by a vertical bar in the left margin, next to the line, section, or figure that is being affected.

(g) Temporary revisions.

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

1 ORGANISATION AND RESPONSIBILITIES

1.1 *Organizational structure.* A description of the organizational structure including the general company organogram and operations department organogram. The organogram must depict the relationship between the operations department and the other departments of the company. In particular, the subordination and reporting lines of all divisions, departments etc, which pertain to the safety of flight operations must be shown.

1.2 *Nominated postholders.* The name of each nominated postholder responsible for flight operations, the maintenance system, crew training and ground operations, as prescribed in BCAR 1.175(j). A description of their function and responsibilities must be included.

1.3 *Responsibilities and duties of operations management personnel.* A description of the duties, responsibilities and authority of operations management personnel pertaining to the safety of flight operations and ground operations in compliance with the applicable regulations.

1.4 *Authority, duties, and responsibilities of the pilot in command.* A statement defining the authority, duties, and responsibilities of the pilot in command.

1.5 *Duties and responsibilities of crew members other than the pilot in command.*

2 OPERATIONAL CONTROL AND SUPERVISION

2.1 *Supervision of the operation by the operator.* A description of the system for supervision of the operation by the operator (See BCAR 1.175(h)). 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

2.2 *System of promulgation of additional operational instructions and information.* A description of any system for promulgating information which may be of an operational nature but is supplementary to that in the Operations Manual. The applicability of this information and the responsibilities for its promulgation must be included.

2.3 *Accident prevention and flight safety programme.* A description of the main aspects of the flight safety programme.

(a) The operator shall establish a flight safety data system for the usage and guidance of personnel in charge of the operations as part of the safety management system.

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

2.5. *Powers of the BDCA.* A description of the powers of the BDCA and guidance to staff on how to facilitate inspections by Authority personnel.

3 QUALITY SYSTEM

A description of the quality system adopted including at least:

(a) quality policy;

(b) a description of the organisation of the quality system; and

(c) Allocation of duties and responsibilities.

(d) Ground handling arrangements and procedures.

4 CREW COMPOSITION

4.1 *Crew composition.* An explanation of the method for determining crew compositions taking account of the following:

(a) the type of aeroplane being used;

(b) the area and type of operation being undertaken;

(c) the phase of the flight;

(d) the minimum crew requirement for each type of operation, indicating command succession and flight duty period planned;

(e) experience (total and on type), recency and qualification of the crew members;

(f) the designation of the pilot in command and, if necessitated by the duration of the flight, the procedures for the relief of the pilot in command or other members of the flight crew. (See Appendix 1 to BCAR OPS 1.940)

(g) the designation of the senior cabin crew member and, if necessitated by the duration of the flight, the procedures for the relief of the senior cabin crew member and any other member of the cabin crew.

(h) operators shall verify that crew members show the ability to talk and understand the language used for the aeronautical radio communications according to ICAO Annex 1.

4.2 *designation of the pilot in command.* The rules applicable to the designation of the pilot in command.

4.3 *flight crew incapacitation.* Instructions on the succession of command in the event of flight crew incapacitation.

4.4 *operation on more than one type.* A statement indicating which aeroplanes are considered as one type for the purpose of:

(a) flight crew scheduling; and

(b) cabin crew scheduling.

5 QUALIFICATION REQUIREMENTS

5.1 A description of the required licence, rating(s), qualification/competency (e.g., for routes and aerodromes), experience, training, checking and recency for operations personnel to conduct their duties. Consideration must be given to the aeroplane type, kind of operation and composition of the crew.

5.2 *Flight crew*

(a) Pilot in command

(b) Pilot relieving the pilot in command

(c) Co-pilot

(d) Pilot under supervision

(e) Flight engineer

(f) Operation on more than one aeroplane type or variant

5.3 *Cabin crew*

(a) Senior cabin crew member

(b) Cabin crew member:

(i) required cabin crew members

(ii) additional cabin crew member and cabin crew member during familiarisation flights.

(c) Operation on more than one aeroplane type or variant

5.4 *Training, checking and supervision personnel*

(a) For flight crew

(b) For cabin crew

5.5 *Other operations personnel*

6 CREW HEALTH AND HYGENE PRECAUTIONS

6.1 *Crew health and hygiene precautions*. The relevant regulations and guidance to crew members concerning health including:

(a) alcohol and other intoxicating liquor;

(b) narcotics;

(c) drugs;

(d) sleeping tablets;

(e) pharmaceutical preparations;

(f) immunisation;

(g) deep diving;

(h) blood donation;

(i) meal precautions prior to and during flight;

(j) sleep and rest; and

(k) surgical operations.

7 FLIGHT TIME LIMITATIONS

7.1 *Flight, and duty time limitations, and rest requirements.* The scheme developed by the operator in accordance with Subpart Q (or existing national requirements until such time as Subpart Q has been adopted).

7.2 *Exceedances of flight, duty time limitations and/or reductions of rest periods*. Conditions under which flight and duty time may be exceeded or rest periods may be reduced, and the procedures used to report these modifications must be included.

8 OPERATING PROCEDURES

8.1 *Flight preparation instructions.* As applicable to the operation:

8.1.1 *Minimum flight altitudes*. A description of the method of determination and application of minimum altitudes including:

(a) a procedure to establish the minimum altitudes/flight levels for VFR flights; and

(b) a procedure to establish the minimum altitudes/flight levels for IFR flights.

8.1.2 *Criteria and responsibilities for the authorisation of the use of aerodromes, considering the applicable requirements of Subparts D, E, F, G, H, I and J.*

8.1.3 *Methods for establishing aerodrome operating minima*. The method for establishing aerodrome operating minima for IFR flights in accordance with BCAR-OPS 1 Subpart E must be included. Reference must be made to procedures for the determination of the visibility and/or runway visual range and for the applicability of the actual visibility observed by the pilots, the reported visibility, and the reported runway visual range.

8.1.4 En-route operating minima for VFR flights or VFR portions of a flight and, where single engine aeroplanes are used, instructions for route selection with respect to the availability of surfaces which permit a safe forced landing.

8.1.5 *Presentation and application of aerodrome and en-route operating minima.*

8.1.6 *Interpretation of meteorological information*. Explanatory material on the decoding of MET forecasts and MET reports relevant to the area of operations, including the interpretation of conditional expressions.

8.1.7 *Determination of the quantities of fuel, oil and water methanol carried*. The methods by which the quantities of fuel, oil, and water methanol to be carried are determined and monitored in flight. This section must also include instructions on the measurement and distribution of the fluid carried on board. Such instructions must take account of all circumstances likely to be encountered on the flight, including the possibility of in-flight re-planning and of failure of one or more of the aeroplane's powerplants. The system for maintaining fuel and oil records must also be described in accordance with Appendix 1 to BCAR-OPS 1.1065.

8.1.8 *Weight and balance*. The general principles of weight and centre of gravity including:

(a) definitions;

(b) methods, procedures and responsibilities for preparation and acceptance of weight and centre of gravity calculations;

(c) the policy for using standard and/or actual weights;

(d) the method for determining the applicable passenger, baggage and cargo weight;

(e) the applicable passenger and baggage weights for various types of operations and aeroplane type;

(f) general instruction and information necessary for verification of the various types of weight and balance documentation in use;

(g) last minute changes (LMC) procedures;

(h) specific gravity of fuel, oil, and water methanol; and

(i) seating policy/procedures.

8.1.9 *ATS flight plan*. Procedures and responsibilities for the preparation and acceptance of the operational flight plan. Factors to be considered include the means of submission for both individual and repetitive flight plans.

8.1.10 *Operational flight plan*. Procedures and responsibilities for the preparation and acceptance of the operational flight plan. The use of the operational flight plan must be described including samples of the operational flight plan formats in use.

8.1.11 *Operator's aeroplane technical log*. The responsibilities and the use of the operator's aeroplane technical log must be described, including samples of the format used.

8.1.12 List of documents, forms, and additional information to be carried.

8.2 *Ground handling instructions*

8.2.1 *Fuelling procedures*. A description of fuelling procedures, including:

(a) safety precautions during refuelling and defueling including when an APU is in operation or when a turbine engine is running, and the prop-brakes are on**;**

(b) refuelling and defueling when passengers are embarking, on board or disembarking; and

(c) precautions to be taken to avoid mixing fuels.

8.2.2 *Aeroplane, passengers and cargo handling procedures related to safety*. A description of the handling procedures to be used when allocating seats and embarking and disembarking passengers and when loading and unloading the aeroplane. Further procedures, aimed at achieving safety whilst the aeroplane is on the ramp, must also be given. Handling procedures must include:

(a) children/infants, sick passengers and persons with reduced mobility (PRM);

(b) transportation of inadmissible passengers, deportees or persons in custody;

(c) permissible size and weight of hand baggage;

(d) loading and securing of items in the aeroplane;

(e) special loads and classification of load compartments;

(f) positioning of ground equipment;

(g) operation of aeroplane doors;

(h) safety on the ramp, including fire prevention, blast and suction areas;

(i) start-up, ramp departure and arrival procedures;

(j) servicing of aeroplanes;

(k) documents and forms for aeroplane handling; and

(l) multiple occupancy of aeroplane seats.

8.2.3 *Procedures for the refusal of embarkation*.

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 and medication, except medical patients under proper care are refused embarkation.

8.2.4 *De-icing and anti-icing on the ground*.
A description of the de-icing and anti-icing policy and procedures for aeroplanes on the ground. These shall include descriptions of the types and effects of icing and other contaminants on aeroplanes whilst stationary, during ground movements and during take-off. In addition, a description of the fluid types used must be given including:

(a) proprietary or commercial names;

(b) characteristics;

(c) effects on aeroplane performance;

(d) hold-over times; and

(e) precautions during usage

8.3 *Flight procedures*

8.3.1 *VFR/IFR policy*. A description of the policy for allowing flights to be made under VFR, or of requiring flights to be made under IFR, or of changing from one to the other.

8.3.2 *Navigation procedures*. A description of all navigation procedures relevant to the type(s) and area(s) of operation. Consideration must be given to:

(a) standard navigational procedures including policy for carrying out independent cross-checks of keyboard entries where these affect the flight path to be followed by the aeroplane;

(b) A list of the navigational equipment to be carried including any requirements relating to operations where performance-based navigation is prescribed;

(c) MNPS and polar navigation and navigation in other designated areas;

(d) RNAV;

(e) in-flight replanning;

(f) procedures in the event of system degradation; and

(g) RVSM.

8.3.3 *Altimeter setting procedures*

8.3.4 *Altitude alerting system procedures*

8.3.5 *Ground proximity warning system*

8.3.6 *Criteria, instructions, procedures, and training requirements to prevent collisions and use of TCAS/ACAS*

8.3.7 *Policy and procedures for in-flight fuel management*

8.3.8 *Adverse and potentially hazardous atmospheric conditions.* Procedures for operating in, and/or avoiding, adverse and potentially hazardous atmospheric conditions including*:*

(a) thunderstorms

(b) icing conditions

(c) turbulence

(d) windshear

(e) Jetstream

(f) volcanic ash clouds

(g) heavy precipitation

(h) sandstorms

(i) mountain waves; and

(j) significant temperature inversions

8.3.9 *Wake turbulence*. Wake turbulence separation criteria, considering aeroplane types, wind conditions and runway location.

8.3.10 *Crew members at their stations*. The requirements for crew members to occupy their assigned stations or seats during the different phases of flight or whenever deemed necessary in the interest of safety.

8.3.11 *Use of safety belts for crew and passengers*. The requirements for crew members and passengers to use safety belts and/or harnesses during the different phases of flight or whenever deemed necessary in the interest of safety.

8.3.12 *Admission to flight deck*. The conditions for the admission to the flight deck of persons other than the flight crew. The policy regarding the admission of inspectors from the Authority must also be included.

8.3.13 *Use of vacant crew seats*. The conditions and procedures for the use of vacant crew seats.

8.3.14 *Incapacitation of crew members.* Procedures to be followed in the event of incapacitation of crew members in flight. Examples of the types of incapacitation and the means for recognizing them must be included.

8.3.15 *Cabin safety requirements*. Procedures covering:

(a) passengers cabin preparation for flight, in-flight requirements and preparation for landing including procedures for securing the cabin and galleys;

(b) procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aeroplane;

(c) procedures to be followed during passenger embarkation and disembarkation; and

(d) procedures when refuelling/defueling with passengers embarking, on board or disembarking;

(e) smoking on board.

8.3.16 *Passenger briefing procedures*. The contents, means and timing of passenger briefing in accordance with BCAR–OPS 1.285.

8.3.17 *Procedures for aeroplanes operated whenever required cosmic or solar radiation detection equipment is carried*. Procedures for the use of cosmic or solar radiation detection equipment and for recording its readings including actions to be taken if limit values specified in the Operations Manual are exceeded. In addition, the procedures, including ATS procedures, to be followed if a decision to descend or reroute is taken.

8.3.18 Policy on the use of autopilot and auto throttle in IMC.

8.4 *AWO*. A description of the operational procedures associated with all-weather operations. (See BCAR-OPS Subparts D and E).

8.5 *EDTO*. A description of the EDTO operational procedures.

8.6 *Use of the Minimum Equipment (MEL) and Configuration Deviation List(s) (CDL)*.

8.7 *Nonrevenue flights*. Procedures and limitations for:

(a) training flights;

(b) test flights;

(c) delivery flights;

(d) ferry flights;

(e) demonstration flights; and

(f) positioning flights, including the kind of persons who may be carried on such flights.

8.8 *Oxygen requirements*

8.8.1 An explanation of the conditions under which oxygen must be provided and used.

8.8.2 The oxygen requirements specified for:

(a) flight crew;

(b) cabin crew; and

(c) passengers.

9 DANGEROUS GOODS AND WEAPONS

9.1 Information, instructions and general guidance on the transport of dangerous goods including:

(a) operator's policy on the transport of dangerous goods;

(b) guidance on the requirements for acceptance, labelling, handling, stowage and segregation of dangerous goods;

(c) special notification requirements in the event of an accident or occurrence when dangerous goods are being carried;

(d) procedures for responding to emergency situations involving dangerous goods;

(e) duties of all personnel involved as per BCAR-OPS 1.1215; and

(f) instructions on the carriage of the operator's employees.

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

10 *SECURITY*

10.1 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.

10.2 A description of preventative security measures and training.

10.3 A search procedure checklist according to BCAR-OPS 1.1250. Parts of the security instructions and guidance may be kept confidential.

11 HANDLING, NOTIFYING AND REPORTING OCCURRENCES

Procedures for the handling, notifying, and reporting Occurrences. This section must include:

(a) definition of occurrences and of the relevant responsibilities of all persons involved;

(b) illustrations of forms used for reporting all types of occurrences (or copies of the forms themselves), instructions on how they are to be completed, the addresses to which they should be sent, and the time allowed for this to be done;

(c) in the event of an accident, descriptions of which company departments, authorities and other organisations that have to be notified, how this will be done and in what sequence;

(d) procedures for verbal notification to air traffic service units of incidents involving ACAS RAs, bird hazards, dangerous goods and hazardous conditions;

(e) procedures for submitting written reports on air traffic incidents, ACAS RAs, bird strikes, dangerous goods incidents or accidents, and unlawful interference;

(f) reporting procedures to ensure compliance with BCAR-OPS 1.085(b) and 1.420. These procedures must include internal safety related reporting procedures to be followed by crew members, designed to ensure that the pilot in command is informed immediately of any incident that has endangered, or may have endangered safety during flight and that he/she is provided with all relevant information.

12 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 aeroplanes;

(1) procedures, as prescribed in BCAR 02, for pilots-in-command of intercepted aeroplane; and

(2) visual signals for use by intercepting and intercepted aeroplane, as contained in BCAR 02.

(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 aeroplane flying in or about to enter a restricted, prohibited or danger area;

(j) procedures for pilots-in-command observing an 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.

13 LEASING

A description of the operational arrangements for leasing, associated procedures and management responsibilities.

B AEROPLANE OPERATING MATTERS

Taking account of the differences between types, and variants of types, under the following headings:

0 GENERAL INFORMATION AND UNITS OF MEASUREMENT

3.1 aeroplane dimensions), including a description of the units of measurement used for the operation of the aeroplane type concerned and conversion tables.

LIMITATIONS

1.1 A description of the certified limitations and the applicable operational limitations including:

(a) certification status;

(b) passenger seating configuration for each aeroplane type including a pictorial presentation;

(c) types of operation that are approved;

(d) crew composition;

(e) weight and centre of gravity;

(f) speed limitations, including descent speed at touchdown, limitation on high rates of descent near the surface;

(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;

(m) system limitations;

(n) instructions on the use of autopilots and auto-throttles in IMC;

(o) pre-flight and in-flight planning data with different thrust/power and speed settings;

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

2 NORMAL PROCEDURES

2.1 The normal procedures and duties assigned to the crew, including the allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach and landing operations, the appropriate checklists, the system for use of the checklists and a statement covering the necessary coordination procedures between flight and cabin crew. The following normal procedures and duties must be included:

(a) pre-flight;

(b) pre-departure;

(c) altimeter setting and checking;

(d) taxi, take-off and climb;

(e) noise abatement;

(f) cruise and descent;

(g) approach, stabilised approach, landing preparation and briefing (Departure and approach briefings);

(h) VFR approach;

(i) instrument approach, the conditions required to commence or continue an instrument approach, and the instructions for the conduct of precision and non-precision instrument approach procedures;

(j) visual approach and circling;

(k) missed approach;

(l) normal landing;

(m) post landing; and

(n) operation on wet and contaminated runways.

3 ABNORMAL AND EMERGENCY PROCEDURES

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

(a) crew incapacitation;

(b) fire and smoke drills;

(c) unpressurised and partially pressurised flight;

(d) exceeding structural limits such as overweight landing;

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

(1) information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and

(2) procedures applicable if a decision to descend is taken, covering:

(i) the necessity of giving the appropriate ATS unit warning of the situation and of obtaining a provisional descent clearance; and

(ii) the action to be taken if communication with the ATS unit cannot be established or is interrupted.

(f) lightning strikes;

(g) distress communications and alerting ATC to emergencies.

(h) engine failure;

(i) system failure;

(j) guidance for diversion in case of serious technical failure;

(k) instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system (GPWS);

(l) Criteria, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS);

(m) windshear;

(n) emergency landing/ditching;

(o) departure contingency procedures (EOSID).

4 PERFORMANCES

4.0 Performance data must be provided in a form in which it can be used without difficulty.

4.1 *Performance data*. Performance material which provides the necessary data for compliance with the performance requirements prescribed in BCAR-OPS 1 Subparts F, G, H and I and I must be included to allow the determination of:

(a) take-off climb limits – weight, altitude, temperature;

(b) take-off field length (dry, wet, contaminated);

(c) net flight path data for obstacle clearance, calculation or, where applicable, take-off flight path;

(d) the gradient losses for banked climbouts;

(e) en-route climb limits;

(f) approach climb limits;

(g) landing climb limits;

(h) landing field length (dry, wet, contaminated) including the effects of an in-flight failure of a system or device, if it affects the landing distance;

(i) brake energy limits; and

(j) speeds applicable for the various flight stages (also considering wet or contaminated runways).

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

4.1.2 If performance data, as required for the appropriate performance class, is not available in the approved AFM, then other data acceptable to the BDCA 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.

4.2 *Additional performance data*. Additional performance data where applicable including:

(a) all engine climb gradients;

(b) drift-down data;

(c) effect of de-icing/anti-icing fluids;

(d) flight with landing gear down;

(e) for aeroplanes with 3 or more engines, one engine inoperative ferry flights;

(f) flights conducted under the provisions of the CDL;

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

5 FLIGHT PLANNING

5.1 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 (particularly the one-engine-inoperative cruise speed and maximum distance to an adequate aerodrome determined in accordance with BCAR-OPS 1.245) and flights to isolated aerodromes must be included.

5.2 The method for calculating fuel needed for the various stages of flight, in accordance with BCAR-OPS 1.255.

6 WEIGHT AND BALANCE

Instructions and data for the calculation of the weight and balance including:

(a) calculation system or index system;

(b) information and instructions for completion of weight and balance documentation, including manual and computer generated types;

(c) limiting weight and centre of gravity for the types, variants or individual aeroplanes used by the operator; and

(d) dry Operating weight and corresponding centre of gravity or index.

7 LOADING

Procedures and provisions for loading and securing the load in the aeroplane.

8 CONFIGURATION DEVIATION LIST

The configuration deviation list(s) (CDL), if provided by the manufacturer, taking account of the aeroplane types and variants operated including procedures to be followed when an aeroplane is being despatched under the terms of its CDL.

9 MINIMUM EQUIPMENT LIST

9.1 The minimum equipment list (MEL) taking account of the aeroplane types and variants operated and the type(s)/area(s) of operation. The MEL must include the navigational equipment and consider the required navigation performance for the route and area of operation.

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

10 SURVIVAL AND EMERGENCY EQUIPMENT INCLUDING OXYGEN

10.1 A list of the survival and emergency equipment to be carried for the routes to be flown and the procedures for checking the serviceability of this equipment prior to take-off shall be considered. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated checklist(s), and the ground-air visual sign code

10.2 s for use by survivors, as contained in BCAR 02, must also be included.

10.2 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.

11 EMERGENCY EVACUATION PROCEDURES

11.1 Instructions for preparation for emergency evacuation including crew coordination and emergency station assignment.

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

12 AEROPLANE SYSTEMS

A description of the aeroplane systems, related controls and indications and operating instructions (See AMC OPS to appendix 1 to BCAR-OPS 1.1045).

C ROUTES AND AERODROMES

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

(b) 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; COM-failure procedures;

(c) Availability of aeronautical information and MET services;

(d) The minimum flight altitudes for each route to be flown;

(e) Search and rescue facilities in the area over which the aeroplane is to be flown;

(f) En-route COM/NAV procedures;

(g) Aerodrome categorisation for flight crew competence qualification (See AMC OPS 0.975);

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

(i) Approach, missed approach and departure procedures including noise abatement procedures;

(j) COM-failure procedures;

(k) The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities;

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

(1) take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;

(2) take-off climb limitations;

(3) en-route climb limitations;

(4) approach climb limitations and landing climb limitations;

(5) landing runway length requirements for dry, wet, and contaminated conditions, including systems failures which affect the landing distance; and

(6) supplementary information, such as tire speed limitations.

(m) Instructions for determining aerodrome operating minima for instrument approaches using HUD and EVS.

D TRAINING

1 Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight.

2 Training syllabi and checking programmes must include:

2.1 *For flight crew*. All relevant items prescribed in Subparts E and N;

2.2 *For cabin crew*. All relevant items prescribed in Subpart O;

2.3 *for operations personnel concerned, including crew members:*

(a) all relevant items prescribed in Subpart R (Transport of Dangerous Goods by Air); and

(b) all relevant items prescribed in Subpart S (Security).

2.4 *for operations personnel other than crew members* (e.g., dispatcher, handling personnel etc.). All other relevant items prescribed in BCAR-OPS pertaining to their duties.

3 *Procedures*

3.1 Procedures for training and checking.

a. The learning process.

b. Effective teaching elements.

c. Evaluation and exams of students.

d. Course development.

e. Lesson planning.

f. Training techniques in the classroom.

g. The areas of knowledge appropriate to the course to be taught.

h. To perform as a Theoretical Instructor, he must be evaluated in practice in one of the topics that he intends to teach, for this purpose, the candidate will make a presentation of at least 0:30 minutes in front of an Evaluating Group made up of three examiners.

i. For this evaluation, the examiners will evaluate which the minimum grade to pass will be 70%.

j. Demonstrate their competence, this ability to impart instruction and knowledge of the subject will be previously verified through a supervised practical evaluation which will be scheduled and executed in a prescribed manner by designated BDCA inspectors.

k. The rest of the topics and courses may be taught by qualified personnel, prior authorization granted by the BDCA, after having evaluated their competence.

3.2 Procedures to be applied in the event that personnel do not achieve or maintain the required standards.

3.3 Procedures to ensure that abnormal or emergency situations requiring the application of part or all of abnormal or emergency procedures and simulation of IMC by artificial means are not simulated during commercial air transport flights.

4 *Training*

4.1 Training and verification procedures.

4.2 Procedures applicable if personnel do not achieve or maintain the required standards.

4.3 Procedures to ensure that abnormal or emergency situations that require the application of part or all ~~of~~ the abnormal or emergency procedures and the simulation of IMC by artificial means are not simulated during commercial air transport flights. Description of documentation to be stored and storage periods. (See Appendix 1 to BCAR-OPS 1.1065).

5 Description of the documentation to be filed and the filing periods. (See Appendix 1 of BCAR-OPS 1.1065).

6. Instructor Minimum Requirements

6.1 The operator before selecting its instructors, must verify they meet the minimum requirements which include but not limited to;

a) techniques of applied instruction;
b) assessment of student performance in those subjects in which ground instruction is given;
c) the learning process;
d) elements of effective teaching;
e) student evaluation and testing, training philosophies;
g) experience in the topic given;
h) classroom instructional techniques;
i) use of training aids,;

6.2 The instructors of initial and recurrent training must demonstrate or be assessed as competent in instruction and the function(s) that they will instruct prior to delivering such training.

6.3 Instructors delivering initial and recurrent training must deliver two (2) courses at least every 24 months to remain current, in the absence of this, the instructor shall attend recurrent training of train the trainer or similar in compliance with Appendix 1 of BCAR 1.1045 subsection 6.

Appendix 1 to BCAR-OPS 1.1065 Document storage periods

The Operator shall ensure that the following information/documentation is stored in an acceptable form, accessible to the BDCA, for the periods shown in the tables below. Additional information relating to maintenance records is prescribed in **Subpart M**.

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

Information used for the preparation and execution of the flight as described in BCAR-OPS 1.135	
Operational flight plan	3 months
Aeroplane technical log	24 months after the date of the last entry
Route specific NOTAM/AIS briefing documentation if edited by the operator	3 months
Weight and balance documentation	3 months
Notification of special loads including written information to the pilot in command about dangerous goods	3 months
Fuel and oil records	3 months

Table 2 - Reports

Reports	
Journey log	6 months
Flight report(s) for recording details of any occurrence, as prescribed in BCAR-OPS 1.420 or any event which the pilot in command deems necessary to report/record.	3 months
Reports on exceedances of	3 months

duty and/or reducing rest periods	

Table 3 – Flight crew records

Flight crew records	
Flight, duty and rest time	15 months
Licence	If the flight crew member is exercising the privileges of the licence for the operator
Conversion training and checking	3 years
Command course (including checking)	3 years
Recurrent training and checking	3 years
Training and checking to operate in either pilot's seat	3 years
Recent experience (See BCAR-OPS 1.970)	15 months
Route and aerodrome competence (See BCAR-OPS 1.975)	3 years
Training and qualification for specific operations when required by BCAR-OPS	3 years

(e.g., EDTO CAT II/III operations)	
Dangerous goods training, as appropriate	3 years

Table 4 – Cabin crew records

Cabin crew records	
Flight, duty, and rest time	15 months
Initial training, conversion and differences training (including checking)	As long as the cabin crew member is employed by the operator
Recurrent training and refresher (including checking)	Until 12 months after the cabin crew member has left the employ of the operator
Dangerous goods training, as appropriate	3 years

Table 5 – Records for other operations personnel

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

Table 6 – Other records

Other records	
Records on cosmic and solar radiation dosage	Until 12 months after the crew member has left the employ of the operator
Quality system records	5 years
Dangerous Goods Transport Document	3 months after completion of the flight
Dangerous Goods Acceptance Checklist	3 months after completion of the flight

SUBPART Q FLIGHT AND DUTY TIME LIMITATIONS AND REST REQUIREMENTS

BCAR OPS 1.1080 Applicability

(a) This Subpart Q prescribes flight time limitations, duty, and rest requirements for all flight crew members, cabin crew, dispatchers, and maintenance personnel of AOC holders who carry out passenger operations according to BCAR-OPS 1, these limitations will be based on scientific principles and knowledge and operational experiences, their purpose will be to guarantee that flight and cabin crew members are performing with with an adequate alert level.

(b) All operators holding a AOC that carry out passenger operations according to BCAR-OPS 1, must include in their operations manuals the limitations of flight time, service and rest requirements of all crew members and personnel. Flight time limitations and maximum service periods may not exceed those established here, likewise; rest periods may not be less than those established in this regulation. However, for specific cases, the operator may request the Authority to exceed the flight time limitations and the maximum periods of service as long as it presents:

(i) Formal request in this regard, including justifications;
(ii) Risk analysis accompanied by the respective mitigation measures.

Based on the foregoing, the BDCA will analyse the request and determine if it is appropriate to grant the authorization.

(c) The operators holding a AOC and the crew members and ground technical personnel are individually responsible for not exceeding the maximum flight and duty times established herein.

BCAR OPS 1.1085 Reserved

BCAR OPS 1.1090 Fitness for duty

(a) Each flight crew member must report for any flight duty period rested and prepared to perform his/her assigned duties.

(b) No certificate holder may assign, and no flight crew member may accept assignment to a flight duty period if the flight crew member has reported for such flight duty period too fatigued to safely perform his/her assigned duties.

(c) No AOC holder may permit a crew member to continue a flight duty period if the crew member has reported him/herself too fatigued to continue the assigned flight duty period.

(d) As part of the dispatch or flight release, as applicable, each crew member must affirmatively state he/she is fit for duty prior to commencing flight.

BCAR OPS 1.1095 Fatigue risk management system

(See AMC-OPS 1.1095)

(a) The BDCA has established this section for the purposes of fatigue management. This section is based on principles, scientific knowledge and operational experience and its purpose is to ensure that flight and cabin crew members are performing at an appropriate level of alertness, in accordance with the following:

(1) this Subpart Q has been established, where it is regulated what is related to flight time limitations, flight duty periods, duty periods and rest period requirements.~~, Y~~
(2) Fatigue Risk Management Systems (FRMS), where the operator is authorized to use an FRMS for the purpose of managing fatigue.

(b) The Authority requires that the operator, in accordance with paragraph (a) above and for the purpose of managing its safety risks related to fatigue, establish:

(1) Flight time limitations, flight duty periods, duty periods, and rest period requirements that are within the prescriptive fatigue management regulations established by the BDCA; either

(2) a fatigue risk management system (FRMS) in accordance with BCAR OPS 1.1095 (f) for all operations; either

(3) an FRMS that meets BCAR-OPS 1.1095 (f) for part of its operations and the requirements of BCAR OPS 1.1095 (b) for the rest of its operations.

(c) Where an operator adopts prescriptive fatigue management regulations for part or all its operations, the BDCA may, in exceptional circumstances, approve variations of these regulations based on a risk assessment provided by the operator. Approved variations shall provide a level of safety equal to, or better than, the prescriptive fatigue management regulations.

(d) The BDCA shall approve the operator's FRMS before said system can replace any or all the prescriptive fatigue management regulations. Approved FRMS will provide a level of safety equal to, or better than, the level achieved by prescriptive fatigue management regulations.

(e) States that approve the operator's FRMS must establish a process to ensure that the FRMS provides a level of safety equivalent to, or better than, the level achieved by the prescriptive fatigue management regulations of this subpart. As part of this process, the BDCA:

1) requires the operator to establish maximum values for flight time and/or flight duty periods and duty periods, and minimum values for rest periods. These values must be based on scientific principles and knowledge, subject to safety assurance processes, and must be acceptable to the BDCA;

2) must require a reduction of the maximum values or an increase of the minimum values when the data of the operator indicates that these values are very high or very low, respectively;

3) must approve an increase in maximum values or a decrease in minimum values only after evaluating the operator's justification for making such changes, based on FRMS experience and fatigue data.

(f) The operator that implements an FRMS to manage safety risks related to fatigue must, at a minimum:

1. incorporates scientific principles and knowledge into the FRMS;

2. constantly identifies fatigue-related safety hazards and resulting risks;

3. ensures the prompt application of corrective measures necessary to effectively mitigate the risks associated with the hazards;

4. facilitates the permanent monitoring and periodic evaluation of the mitigation of the risks related to fatigue that is achieved with said measures;

5. facilitates continuous improvement of the overall performance of the FRMS.

(g) The operator must keep records of flight time, flight duty periods, duty periods and rest periods for all members of its flight and cabin crews in accordance with the provisions of Appendix 1 to the BCAR -OPS 1.1065.

(h) The BDCA shall require that, where the operator has an FRMS, it is integrated with the operator’s SMS.

BCAR OPS 1.1100 Fatigue education and awareness training programme

(See AMC-OPS 1.1095)

(a) Each AOC holder must develop and implement an education and awareness training programme, approved by the BDCA. This programme must provide annual education and awareness training to all employees of the AOC holder responsible for administering the provisions of this Subpart, including crew members, dispatchers, individuals directly involved in the scheduling of crew members, individuals directly involved in operational control, and any employee providing direct management oversight of those areas.

(b) The fatigue education and awareness training programme must be designed to increase awareness of:

(1) Fatigue;

(2) The effects of fatigue on pilots; and

(3) fatigue countermeasures

(c) Every two years, the AOC holder must update the training program to educate and raise awareness of fatigue; In addition, he must submit the update to the BDCA for review and approval.

(d) From the date of presentation of the program to educate and raise awareness about fatigue, required in (c) of this section, the BDCA has a period of no more than 12 months to review the update, and approve or reject it. In the latter case, the BDCA will provide the corresponding modification suggestions so that the program can be subjected to a new review.

BCAR-OPS 1.1105 Flight time limitation

(a) Flight time limitations, flight duty periods, duty periods, and rest period requirements that are within the prescriptive fatigue management regulations established by the BDCA.

(b) No AOC holder may schedule, and no crew member may accept an assignment or continue an assigned flight duty period, if the total flight time:

(1) Will exceed the limits specified in **Table A** of this Subpart if the operation is conducted with the minimum required crew.

(2) Will exceed 13 hours if the operation is conducted with a 3-pilot flight crew.

(3) Will exceed 17 hours if the operation is conducted with a 4-pilot flight crew.

(c) If unforeseen operational circumstances arise after take-off that are beyond the AOC holder's control, a flight crew member may exceed the maximum flight time specified in paragraph (a) of this section and the cumulative flight time limits in BCAR-OPS 1.1135 (b) to

the extent necessary to safely land the aeroplane at the next destination airport or alternate, as appropriate.

(d) Each AOC holder must report to the BDCA within 10 working days any flight time that exceeded the maximum flight time limits permitted by this section or BCAR-OPS 1.1135(b). The report must contain a description of the extended flight time limitation and the circumstances surrounding the need for the extension.

BCAR OPS 1.1110 Flight duty period, unaugmented operations

(a) Except as provided for in BCAR OPS 1.1115, no AOC holder may assign, and no crew member may accept an assignment for an unaugmented flight operation if the scheduled flight duty period will exceed the limits in Table B of this Subpart.

(b) If the crew member is not acclimated:

(1) The maximum flight duty period in Table B of this Subpart is reduced by 30 minutes.

(2) The applicable flight duty period is based on the local time of the region where the crew member was last acclimated.

BCAR-OPS 1.1115 Flight duty period, split duty

For an unaugmented operation only, if a crew member is provided with a rest opportunity (an opportunity to sleep) in a suitable accommodation during his/her flight duty period, the time that the crew member spends in the suitable accommodation is not part of that crew member's flight duty period if all ~~of~~ the following conditions are met:

(a) The rest opportunity is provided between the hours of 22:00 and 05:00 local time.

(b) The time spent in the suitable accommodation is at least 3 hours, measured from the time that the crew member reaches the suitable accommodation.

(c) The rest opportunity is scheduled before the beginning of the flight duty period in which that rest opportunity is taken.

(d) The rest opportunity that the crew member is provided may not be less than the rest opportunity that was scheduled.

(e) The rest opportunity is not provided until the first segment of the flight duty period has been completed.

(f) The combined time of the flight duty period and the rest opportunity provided in this section does not exceed 14 hours.

BCAR OPS 1.1120 Flight duty period, augmented flight crew

(a) For flight operations conducted with an acclimated augmented crew, no AOC holder may assign, and no crew member may accept an assignment if the scheduled flight duty period will exceed the limits specified in Table C of this Subpart.

(b) If the crew member is not acclimated:

(1) The maximum flight duty period in Table C of this part is reduced by 30 minutes.

(2) The applicable flight duty period is based on the local time at the theatre in which the crew member was last acclimated.

(c) No AOC holder may assign, and no crew member may accept an assignment under this section unless during the flight duty period:

(1) Two consecutive hours in the second half of the flight duty period are available for in-flight rest for the pilot flying the aeroplane during landing.

(2) Ninety consecutive minutes are available for in-flight rest for the pilot performing monitoring duties during landing.

(d) No AOC holder may assign, and no crew member may accept an assignment involving more than three flight segments under this section.

(e) At all times during flight, at least one flight crew member qualified in accordance with Subpart N and Section 1.310 of Subpart D of this regulation must be at the flight controls.

BCAR OPS 1.1125 Flight duty period extensions

(a) For augmented and unaugmented operations, if unforeseen operational circumstances arise prior to take-off:

(1) The pilot in command and the AOC holder may extend the maximum flight duty period permitted in Tables B or C of this Subpart up to 2 hours. The pilot in command and the AOC holder may also extend the maximum combined flight duty period and reserve availability period limits specified in BCAR OPS 1.1130(c)(3) and (4) of this Subpart up to 2 hours.

(2) An extension in the flight duty period under paragraph (a)(1) of this section of more than 30 minutes may occur only once prior to receiving a rest period described in BCAR-OPS 1.1140(b).

(3) A flight duty period cannot be extended under paragraph (a)(1) of this section if it causes a crew member to exceed the cumulative flight duty period limits specified in BCAR-OPS 1.1135(c).

(4) Each AOC holder must report to the BDCA within 10 working days any flight duty period that exceeded the maximum flight duty period permitted in Tables B or C of this Subpart by more than 30 minutes. The report must contain the following:

(i) A description of the extended flight duty period and the circumstances surrounding the need for the extension; and

(ii) If the circumstances giving rise to the extension were within the AOC holder's control, the corrective action(s) that the AOC holder intends to take to minimise the need for future extensions.

(5) Each AOC holder must implement the corrective action(s) reported in paragraph (a)(4) of this section within 30 days from the date of the extended flight duty period.

(b) For augmented and unaugmented operations, if unforeseen operational circumstances arise after take-off:

(1) The pilot in command and the AOC holder may extend maximum flight duty periods specified in Tables B or C of this Subpart to the extent necessary to safely land the aeroplane at the next destination airport or alternate airport, as appropriate.

(2) An extension of the flight duty period under paragraph (b)(1) of this section of more than 30 minutes may occur only once prior to receiving a rest period described in BCAR OPS 1.1140(b).

(3) An extension taken under paragraph (b) of this section may exceed the cumulative flight duty period limits specified in BCAR OPS 1.1135(c).

(4) Each AOC holder must report to the BDCA within 10 working days any flight duty period that either exceeded the cumulative flight duty periods specified in BCAR OPS 1.1135(c) or exceeded the maximum flight duty period limits permitted by Tables B or C of this Subpart by more than 30 minutes. The report must contain a description of the circumstances surrounding the affected flight duty period.

BCAR OPS 1.1130 Reserve status

(a) Unless specifically designated as airport/standby or short-call reserve by the AOC holder, all reserve is considered long-call reserve.

(b) Any reserve that meets the definition of airport/standby reserve must be designated as airport/standby reserve. For airport/standby reserve, all time spent in a reserve status is part of the crew member's flight duty period.

(c) For short call reserve,

(1) The reserve availability period may not exceed 14 hours.

(2) For a crew member who has completed a reserve availability period, no AOC holder may schedule, and no crew member may accept an assignment of a reserve availability period unless the crew member receives the rest required in BCAR OPS 1.1140(e).

(3) For an unaugmented operation, the total number of hours a crew member may spend in a flight duty period and a reserve availability period may not exceed the lesser of the maximum applicable flight duty period in Table B of this part plus 4 hours, or 16 hours, as measured from the beginning of the reserve availability period.

(4) For an augmented operation, the total number of hours a crew member may spend in a flight duty period and a reserve availability period may not exceed the flight duty period in Table C of this Subpart plus 4 hours, as measured from the beginning of the reserve availability period.

(d) For long call reserve, if an AOC holder contacts a crew member to assign him/her to a flight duty period that will begin before and operate into the crew member's window of circadian low, the crew member must receive a 12-hour notice of report time from the AOC holder.

(e) An AOC holder may shift a reserve crew member's reserve status from long-call to short-call only if the crew member receives a rest period as provided in BCAR OPS 1.1140(e).

BCAR OPS 1.1135 Cumulative limitations

(a) The limitations of this section include all flying by crew members on behalf of any AOC holder during the applicable periods.

(b) No AOC holder may schedule, and no crew member may accept an assignment if the crew member's total flight time will exceed the following:

(1) 100 hours in any 672 consecutive hours; or

(2) 1000 hours in any 365 consecutive calendar day period.

(c) No AOC holder may schedule, and no crew member may accept an assignment if the crew member's total flight duty period will exceed:

(1) 60 flight duty period hours in any 168 consecutive hours; or

(2) 190 flight duty period hours in any 672 consecutive hours.

BCAR OPS 1.1140 Rest period

(a) No AOC holder may assign, and no crew member may accept assignment to any reserve or duty with the AOC holder during any required rest period.

(b) Before beginning any reserve or flight duty period a crew member must be given at least 30 consecutive hours free from all duty within the past 168 consecutive hour period.

(c) If a crew member operating in a new theatre has received 36 consecutive hours of rest, that crew member is acclimated, and the rest period meets the requirements of paragraph (b) of this section.

(d) A crew member must be given a minimum of 56 consecutive hours rest upon return to home base if the crew member: (1) Travels more than 60° longitude during a flight duty period or a series of flight duty period, and (2) is away from home base for more than 168 consecutive hours during this travel. The 56 hours of rest specified in this section must encompass three physiological nights' rest based on local time.

(e) No AOC holder may schedule, and no crew member may accept an assignment for any reserve or flight duty period unless the crew member is given a rest period of at least 10 consecutive hours immediately before beginning the reserve or flight duty period measured from the time the crew member is released from duty. The 10-hour rest period must provide the crew member with a minimum of 8 uninterrupted hours of sleep opportunity.

(f) If a crew member determines that a rest period under paragraph (e) of this section will not provide eight (8) uninterrupted hours of sleep opportunity, the crew member must notify the AOC holder. The crew member cannot report for the assigned flight duty period until he/she receives a rest period specified in paragraph (e) of this section.

(g) If a crew member engaged in deadhead transportation exceeds the applicable flight duty period in Table B of this part, the crew member must be given a rest period equal to the length of the deadhead transportation but not less than the rest required in paragraph (e) of this section before beginning a flight duty period.

BCAR OPS 1.1145 Consecutive night-time operations

An AOC holder may schedule, and a flight crew member may accept up to five consecutive flight duty periods that infringe on the window of circadian low if the AOC holder provides the

crew member with an opportunity to rest in a suitable accommodation during each of the consecutive night-time flight duty periods. The rest opportunity must be at least 2 hours, measured from the time that the crew member reaches the suitable accommodation, and must comply with the conditions specified in BCAR OPS 1.1115 (a), (c), (d), and (e). Otherwise, no AOC holder may schedule, and no crew member may accept more than three consecutive flight duty periods that infringe on the window of circadian low. For purposes of this section, any split duty rest that is provided by BCAR OPS 1.1115 counts as part of a flight duty period.

BCAR OPS 1.1146 Records

(a) For an AOC holder to be sure that the personnel scheduling scheme is working as intended and as approved, records must be kept for 15 months (See Appendix 1 to BCAR OPS 1.1065). Records of the duties performed and the rest periods covered must be kept facilitating the conduct of an inspection by the operator's authorised personnel as well as the conduct of an audit by the State of the Operator.

(b) The holder of an AOC shall ensure that, for each flight and cabin crew member, such records include at least the following:

(1) the start, duration, and end of each flight duty period;

(2) the start, duration, and end of each duty period;

(3) rest periods; and

(4) flight hours.

(c) The operator shall also keep records of the instances in which a pilot-in-command has decided (as described in BCAR-OPS 1.1135). If the decision needs to be applied for similar reasons in more than two percent of the times when flying on a particular route or route configuration, it is very likely that the purpose of Subpart Q has not been achieved and that an improper fatigue situation may be triggered. As a result, arrangements should be made to change itineraries or crew assignment procedures to reduce the occurrence of such events. The BDCA may require the submission of additional copies of some records.

(d) Flight crew members shall keep a personal record of their daily flight hours.

BCAR OPS 1.1147 Dispatcher's duty time limitations

(a) Each AOC holder shall establish the daily duty period for a dispatcher so that it begins at a time that allows him/her to become thoroughly familiar with existing weather conditions along the route before he/she dispatches any aeroplane. He/she shall remain on duty until each aeroplane dispatched by him/her has completed its flight, or has gone beyond his/her jurisdiction, or until he/she is relieved by another qualified dispatcher.

(b) Except in cases where circumstances or emergency conditions beyond control:

(1) No AOC holder may schedule a dispatcher for more than 10 consecutive hours of duty;

(2) If a dispatcher is scheduled for more than 10 hours of duty in 24 consecutive hours, the AOC holder shall provide him/her a rest period of at least eight hours;

(3) Each dispatcher must be relieved of all duty for at least an entire calendar day during any seven consecutive days.

(c) Notwithstanding paragraphs (a) and (b) of this section, an AOC holder may, if authorised by the BDCA, schedule an aeroplane dispatcher for more than 10 consecutive hours of duty in 24 hours if that aeroplane dispatcher is relieved of all duty with the AOC holder for at least eight hours during each 24 consecutive hour period.

BCAR OPS 1.1148 Maintenance personnel's duty time limitations

The Operator's maintenance personnel or each person performing maintenance for the operator's aeroplanes shall be given at least one calendar day of rest during any seven consecutive days.

Table A – Maximum flight time limits for unaugmented operations table

Time of report (acclimated)	Maximum flight time (hours)
00:00-04:59	8
05:00-19:59	9
20:00-23:59	8

Table B – Flight duty period: unaugmented operations

Scheduled time of start (acclimated time)	Maximum flight duty period (hours) for line holders based on number of flight segments						
	1	2	3	4	5	6	7 +
00:00-03:59	9	9	9	9	9	9	9
04:00-04:59	10	10	10	10	9	9	9
05:00-05:59	12	12	12	12	11.5	11	10.5
06:00-06:59	13	13	12	12	11.5	11	10.5
07:00-11:59	14	14	13	13	12.5	12	11.5
12:00-12:59	13	13	13	13	12.5	12	11.5
13:00-16:59	12	12	12	12	11.5	11	10.5
17:00-21:59	12	12	11	11	10	9	9

22:00-22:59	11	11	10	10	9	9	9
23:00-23:59	10	10	10	9	9	9	9

Table C – Flight duty period: augmented operations

Scheduled time of start (acclimated time)	Maximum flight duty period (hours) based on rest facility and number of pilots					
	Class 1 rest facility		Class 2 rest facility		Class 3 rest facility	
	3 pilots	4 pilots	3 pilots	4 pilots	3 pilots	4 pilots
00:00-05:59	15	17	14	15.5	13	13.5
06:00-06:59	16	18.5	15	16.5	14	14.5
07:00-12:59	17	19	16.5	18	15	15.5
13:00-16:59	16	18.5	15	16.5	14	14.5
17:00-23:59	15	17	14	15.5	13	13.5

SUBPART R – TRANSPORT OF DANGEROUS GOODS BY AIR

Operators must adhere to additional requirements to have a specific approval to transport dangerous goods as cargo contained in this BCAR-OPS 1; there are other requirements in BCAR 18 and the technical instructions (DOC 9284) that also needs to be complied.

BCAR-OPS 1.1150 Operators with no operational approval to transport dangerous goods as cargo.

The Operator not approved to transport dangerous goods should:

a) establish a dangerous goods training programme that meets the requirements of the relevant dangerous goods regulation, and the requirements of the Technical Instructions of ICAO Doc 9284, as appropriate. Details of the dangerous goods training programme shall be included in the operations manuals.

b) establish dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of the relevant dangerous goods regulation to allow operator personnel to:

1) identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and
2) report to the appropriate authorities of the State of the Operator and the State in which it occurred any:

i) o when undeclared dangerous goods are discovered in cargo or mail; and

ii) dangerous goods accidents and incidents.

BCAR-OPS 1.1151 Operators transporting dangerous goods as cargo

(See AMC OPS 1.1151)

The Operator approved to transport dangerous goods should:

a) Establish a dangerous goods training programme that meets the requirements in the relevant dangerous goods regulation, and the requirements of the Technical Instructions of ICAO Doc 9284, as appropriate. Details of the dangerous goods training programme shall be included in the operator's operations manuals;

b) Establish dangerous goods policies and procedures in its operations manual to meet, at a minimum, the aspects of the transport of dangerous goods listed in the Technical Instructions in Table 1-4 for operators holding a specific approval or Table 1-5 for operators without an approval. Recurrent training must be provided within 24 months of previous training, except as otherwise provided by the Technical Instructions, and to enable operator personnel to:

1) identify and reject undeclared or mis-declared dangerous goods, including COMAT classified as dangerous goods;

2) report to the appropriate authorities of the State of the Operator and the State in which it occurred any:

   (i) o when undeclared or mis-declared dangerous goods are discovered in cargo or mail; and

   (ii) dangerous goods accidents and incidents;

3) report to the appropriate authorities of the State of the Operator and the State of Origin o when dangerous goods are discovered to have been carried;

   (i) when not loaded, segregated, separated, or secured in accordance with BCAR 18 and the Technical Instructions of ICAO Doc 9284; and

   (ii) without information having been provided to the pilot-in-command;

4) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aeroplane; and

5) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

BCAR-OPS 1.1152 Provision of information

The operator shall ensure that all personnel, including third-party personnel, involved in the acceptance, handling, loading, and unloading of cargo are informed of the operator's operational approval and limitations with regard to the transport of dangerous goods.

BCAR-OPS 1.1153 Domestic commercial air transport operations

(See AMC OPS 1.1153)

The International Standards and Recommended Practices set forth in this Subpart should be applied by all operators conducting domestic commercial air transport operations.

SUBPART S – SECURITY

BCAR-OPS 1.1235 Security requirements

The Operator shall ensure that all personnel involved in the operations under this regulation are familiar and comply with the relevant requirements of the national security programmes of the State of the operator and the relevant AVSEC regulation.

BCAR-OPS 1.1240 Security of the flight crew compartment

(See AMC OPS 1.1240)

a) In all aeroplanes which are equipped with a flight crew compartment door, this door shall be capable of being locked, and means shall be provided by which cabin crew can discreetly notify the flight crew in the event of a suspicious activity or security breaches in the cabin.

b) All passenger aircraft:

(i) Of maximum certified take-off mass greater than 54,500 kg; either
(ii) Of maximum certificated take-off mass greater than 45,000 kg with passenger seating capacity greater than 19;
(iii) With a passenger seating capacity greater than 60, must be equipped with an approved flight crew compartment door and designed to resist penetration by small arms fire and shrapnel from grenades and forcible intrusions by unauthorized persons. This door can be locked and unlocked from any pilot station.

BCAR-OPS 1.1245 Aeroplane search procedure checklist

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

BCAR-OPS 1.1250 Training programmes

a) The operator shall establish and maintain an approved security training programme which ensures crew members act in the most appropriate manner to minimise the consequences of acts of unlawful interference. As a minimum, this programme shall include the following elements:

1) determination of the seriousness of any occurrence;
2) crew communication and coordination;
3) appropriate self-defence responses;
4) use of non-lethal protective devices assigned to crew members whose use is authorised by the BDCA;
5) understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
6) live situational training exercises regarding various threat conditions;
7) flight crew compartment procedures to protect the aeroplane; and
8) aeroplane search procedures and guidance on least-risk bomb locations where practicable.

b) The operator shall also establish and maintain a training programme 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 aeroplane; so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference in accordance with the relevant AVSEC regulation.

BCAR-OPS 1.1255 Reporting acts of unlawful interference

Following an act of unlawful interference on board an aeroplane, the pilot-in-command, or, in the absence of the pilot-in-command, the operator, shall submit without delay, a written report of such an act to the designated local authority in accordance with the relevant AVSEC regulation.

ANNEX 1 – APPLICABILITY

SUBPART A

BCAR OPS 1.001 Applicability

(AMC BCAR OPS 1.001 (c))

(a) **Annex 1** to **BCAR-OPS 1** is applicable to propeller-driven aeroplanes used for commercial operations and with a maximum seating configuration of 19 or less passengers or with a maximum take-off weight of 5 700 kg or less.

(b) BCAR-OPS 1 Section 1 requirements not listed in **Annex 1** shall be applied as described in such section.

(c) The requirements set out in **Section 1** shall be met entirely if international operations are conducted depending on the type of operation.

Terminology:

(1) A to A operations. Take-off and landing are made at the same place.

(2) A to B operations. Take-off and landing are made at different places.

(3) Night. The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the BDCA. (See Section 2, Annex 1, AMC to BCAR-OPS 1.005 (a)).

SUBPART B

BCAR OPS 1.003 Definitions

See AMC to BCAR OPS 1.003 Day/night.

BCAR-OPS 1.035 Quality system

In the case of organisations under **Annex 1**, the quality system may be integrated into the safety management system.

BCAR OPS 1.040 Additional flight crew members

It does not apply to operations conducted under this Annex.

BCAR OPS 1.085 Crew responsibilities

The provisions of this paragraph shall be fulfilled as applicable to the operations conducted under this Annex.

BCAR OPS 1.100 Admission to flight deck

For aeroplane operations under this Annex:

(a) The Operator must establish rules for the carriage of passengers in a pilot seat.
(b) The pilot in command must ensure that:

(1) Carriage of passengers in a pilot seat does not cause distraction and/or interference with the operation of the flight; and

(2) the passenger occupying a pilot seat is made familiar with the relevant restrictions and safety procedures.

(c) The final decision on the admission to the flight deck of the above mentioned passenger must be the responsibility of the Pilot-in-Command and subject to the provisions in BCAR-OPS 1.145.

BCAR-OPS 1.135 Additional information *and forms to be carried on board*.

(a) *For A to A VFR operation, the following documents need not be carried:*

(1) Notification of special categories of passengers

(2) Aeroplane technical log

(3) Operational flight plan

(b) *For A to B VFR operations by day:*

(1) the Operational Flight Plan may be in a simplified form and must meet the needs of the type of operation.

SUBPART C

BCAR-OPS 1.175 General rules for air operation certification

For commercial flights, two pilots holding a commercial pilot licence (CPL) and instrument rating (IR) issued or validated by the State of issue of the AOC are required, if operating with an aeroplane that carries more than 9 passengers.

SUBPART D

BCAR-OPS 1.195 Operational control and flight dispatch. Duties and responsibilities

For domestic flights, when flight dispatch is not available, the flight dispatch can be carried out by the pilot in command provided that:

(a) this flight dispatch procedure is clearly established in the Operations Manual and it is acceptable to the BDCA, and

(b) the pilot in command has received the corresponding training according to a training programme included in the Operations Manual and approved by the BDCA.

(c) a flight tracking can be conducted using means of communication available and acceptable to the BDCA.

BCAR-OPS 1.215 Use of air traffic services

For VFR operations, non-mandatory contact with ATS shall be maintained to the extent appropriate to the nature of the operation and taking into account factors such as radio coverage, flight conditions, and ATS capacity. Search and rescue services must be ensured, when required, in accordance with BCAR-OPS 1.300.

BCAR-OPS 1.225 Aerodrome operating minima

For VFR operations, standard VFR operating minima shall be applied. When necessary, the operator shall specify additional requirements taking into account factors such as radio coverage, terrain, nature of the sites for take-off and landing, flight conditions, and ATS capacity.

BCAR-OPS 1.235 Noise abatement procedures

Not applicable to operations of single engine aeroplanes.

BCAR OPS 1.240 Routes and areas of operation

Subparagraph (a) (1) of BCAR OPS 1.240 is not applicable to A to A VFR operations of single engine aeroplanes by day.

BCAR-OPS 1.250 Establishment of minimum flight altitudes

For VFR operations, this requirement is applicable as follows:

The Operator shall ensure that operations are only conducted along such routes or within such areas for which a safe terrain clearance can be maintained and shall take account of such factors as temperature, terrain, unfavourable meteorological conditions (e.g., severe turbulence and descending air currents, corrections for temperature and pressure variations from standard values).

BCAR-OPS 1.255 Fuel policy

(a) For A to B flights – The Operator shall ensure that the pre-flight calculation of usable fuel required for a flight includes:

(1) *Taxi fuel*- Fuel consumed before take-off, if significant; and

(2) *Trip fuel* -Fuel to reach the destination aerodrome; and

(3) *Alternate fuel*- Fuel to reach the destination alternate if a destination alternate is required.

The amount of fuel required to enable the aeroplane to:

i) Perform a missed approach at the destination aerodrome.
ii) Climb to the expected cruise altitude;
iii)Fly the expected routing;
iv) Descend to the point where the expected approach is initiated; and
v) Conduct the approach and landing at the destination alternate aerodrome;

(4) *Reserve fuel*-

(i) *Contingency fuel* - Fuel that is not less than 5% of the planned trip fuel or, in the event of in-flight replanning, 5% of the trip fuel for the remainder of the flight; but in any case, shall not be lower than the amount required to fly for five minutes at holding speed at 450m (1500 ft) above the destination aerodrome in standard conditions.

(ii) *Final reserve fuel*- Fuel to fly for an additional period of 45 minutes (piston engines) or 30 minutes (turbine engines); and

(c) *Extra fuel*- Additional fuel that the pilot in command may require.

BCAR-OPS 1.265 Carriage of inadmissible passengers, deportees, or persons in custody

For aeroplanes where it is not intended to carry inadmissible passengers, deportees, or persons in custody, The Operator is not required to establish procedures for the carriage of such passengers.

BCAR-OPS 1.280 Passenger seating

(See AMC OPS 1 to BCAR OPS 1.280)
(See AMC OPS 2 to BCAR OPS 1.280)

The operator shall establish procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aeroplane.

BCAR-OPS 1.285 Passenger briefing

Demonstration and briefing shall be given as appropriate to the kind of operations. In single pilot operations, information shall be provided before the start of the flight.

BCAR-OPS 1.290 Flight preparation

(See AMC to BCAR OPS 1.290(b) (2) Annex 1)

(a) *A to B operations under VFR:*

The operational flight plan, which may have a simplified form, relevant to the type of operation and which shall fulfil the needs of the type of operation, is completed for each flight. This flight plan must be approved by the BDCA.

BCAR-OPS 1.295 Selection of aerodromes

For VFR operations, BCAR-OPS 1.295 applies only to those cases in which the operator establishes procedures to select the aerodromes and sites for take-off and landing for the flight plan.

BCAR-OPS 1.375 In-flight fuel management

Appendix 1 to BCAR-OPS 1.375 does not apply for VFR operations of single-engine aeroplanes by day.

SUBPART E

Reserved

SUBPART H

BCAR-OPS 1.530 Take-off

(a) Subparagraph (a) applies with the following addition: In the case of class B aeroplanes, the BDCA may accept other performance data produced by the operator and based on demonstration and/or documented experience.

(b) Subparagraphs (b) and (c) apply with the following addition: Where the requirements of subparagraphs (b) and (c) cannot be complied with due to physical limitations relating to extending the runway and there is a clear public interest and necessity for operation, the BDCA may accept, on a case by case basis, other performance data relating to special procedures, produced by the operator based on demonstration and/or documented experience.

(c) The Operator wishing to conduct operations according to subparagraph (a) of BCAR OPS 1.530 must have the prior approval of the BDCA. Such approval will:

(1) Specify the type of aeroplane.

(2) Specify the type of operation.

(3) Specify the aerodrome(s) and runways concerned.

(4) Restrict the take-off to be conducted under VMC.

(5) Be limited to aeroplanes whose first type certificate was issued before 1 January 2005.

(6) Specify the crew qualification.

(d) The operation must be accepted by the state in which the aerodrome is located.

BCAR-OPS 1.535 Take-off obstacle clearance – multi-engine aeroplanes

(a) Subparagraphs (a) (3), (a) (4), (a) (5), (b) (2), (c) (1) and (c) (2) are not applicable to VFR operations by day.

(b) For IFR or VFR operations by day, subparagraphs (b) and (c) apply with the following variations:

(1) Visual course guidance is considered available when the flight visibility is 1 500 m or more.

(2) The maximum corridor width required is 300 m when flight visibility is 1 500 m or more.

BCAR-OPS 1.545 Landing – destination and alternate aerodromes

(a) Where the requirements of this subparagraph cannot be complied with due to physical limitations relating to extending the runway and there is a clear public interest and necessity for operation, the BDCA may accept, on a case-by-case basis, other performance data relating to special procedures, produced by the operator based on demonstration and/or documented experience.

(b) The Operator wishing to conduct operations according to subparagraph (a) must have the prior approval of the BDCA. Such approval will:

(1) Specify the type of aeroplane.

(2) Specify the type of operation.

(3) Specify the aerodromes and runways concerned.

(4) Restrict the take-off to be conducted under VMC.

(5) Be limited to aeroplanes whose first type certificate was first issued before 1 January 2005.

(6) Specify the crew qualification.

(c) The operation must be accepted by the Authority where the aerodrome is located.

BCAR-OPS 1.550 Landing – dry runway

(a) Where the requirements of this subparagraph cannot be complied with due to physical limitations relating to extending the runway and there is a clear public interest and necessity for operation, the BDCA may accept, on a case-by-case basis, other performance data

relating to special procedures, produced by the operator based on demonstration and/or documented experience.

(b) The Operator wishing to conduct operations according to subparagraph (a) must have the prior approval of the BDCA. Such approval will:

(1) Specify the type of aeroplane.

Specify the type of operation BCAR-OPS 1.295 Selection of aerodromes.

For VFR operations, BCAR-OPS 1.295 applies only to those cases in which the operator establishes procedures to select the aerodromes and sites for take-off and landing for the flight plan.

SUBPART K

BCAR-OPS 1.650(a) Day VFR operations – Flight and navigation instruments and related equipment

For operations conducted in accordance with this annex, aeroplane must be equipped with the instruments required by the type certificate, and at least be equipped, but not be limited to those instruments required in **Section 1** of **BCAR OPS 1.650 (a) (1) (2), (3) and (4)**.

BCAR-OPS 1.730 Seats, safety belts, harnesses, and child restraint devices

(a)(3) This provision does not apply to operations conducted under this Annex.

(a)(4) The requirement of a device to prevent access to flight controls, in case of a pilot suffering of a sudden incapacitation, does not apply to aeroplane operating under this annex.

SUBPART M

BCAR-OPS 1.905 Operator's Maintenance Management Exposition

The MME may be adapted to the operation to be conducted (See **AMC to BCAR-OPS 1.1070** in **Annex 1**).

BCAR-OPS 1.915 Technical log

The BDCA may approve an abbreviated form of the technical log system.

SUBPART N

BCAR-OPS 1.940 Composition of flight crew

Subparagraphs (a) (2), (a) (4), and (b) are not applicable to VFR operations by day, except that (a) (4) must be applied in full where 2 pilots are required by BCAR-OPS 1.

BCAR-OPS 1.945 Conversion training and checking.

(a) Subparagraph (a) (7) – Line flying under supervision (LIFUS) – may be performed on any aeroplane within the applicable class. The amount of LIFUS required is dependent on the complexity of the operations to be performed.

(b) Subparagraph (a)(8) does not apply.

BCAR-OPS 1.955 Nomination as pilot in command

Subparagraph (b) applies as follows: The BDCA may accept an abbreviated command course relevant to the type of operation conducted.

BCAR-OPS 1.960 Pilot in command holding a commercial pilot license.

Subparagraph (a) (1) (i) is not applicable to VFR operations by day.

BCAR-OPS 1.965 Recurrent training and checking.

(a) Subparagraph (a) (1) shall be applied as follows for VFR operations by day: All training and checking shall be relevant to the type of operation and class of aeroplane on which the flight crew member operates with due account taken of any specialized equipment used.

(b) Subparagraph (a) (3) (ii) applies as follows: training in the aeroplane may be conducted by a Class Rating Examiner (CRE), a Flight Examiner (FE) or a Type Rating Examiner (TRE).

(c) Subparagraph (a)(4)(i) applies as follows: Operator proficiency check may be conducted by a Type Rating Examiner (TRE), Class Rating Examiner (CRE) or by a suitably qualified pilot in command, nominated by the operator and acceptable to the BDCA, trained in CRM concepts and the assessment of CRM skills.

(d) Subparagraph (b) (2) for local VFR operations: proficiency checks must be undertaken every 12 calendar months.

BCAR-OPS 1. 968 Pilot qualification for either pilot's seat.

It is not applicable to VFR operations of single engine aeroplanes by day.

BCAR-OPS 1. 975 Route and aerodrome competence

(a) For VFR operations by day, subparagraphs (b), (c) and (d) are not applicable, except that the operator shall ensure that in the cases where a special approval by the state of the aerodrome is required, the associated requirements are observed.

(b) For IFR operations or VFR operations by night, as an alternative to subparagraphs (b) - (d), route and aerodrome competence may be revalidated as follows:

(1) Except for operations to the most demanding aerodromes, by completion of at least 10 sectors within the area of operation during the preceding 12 months in addition to any required self-briefing.

(2) Operations to the most demanding aerodromes may be performed only if**:**

(i) The pilot in command has been qualified at the aerodrome within the preceding 36 months, by a visit as an operating flight crew member or as an observer.

(ii) The approach is performed in VMC from the applicable minimum sector altitude; and

(iii) An adequate self-briefing has been made prior to the flight.

BCAR-OPS 1. 980 Operation in more than one class or category

(a) Not applicable if operations are limited to single pilot classes of piston engine aeroplanes under VFR by day.

(b) For IFR and VFR Night Operations, the requirement in **Appendix 1** to **BCAR-OPS 1.980 (d) (2) (i)** for 500 hours in the relevant crew position before exercising the privileges of 2 licence endorsements, is reduced to 100 hours or 20 sectors if one of the endorsements is related to a class. A check flight must be completed before the pilot is released for duties as pilot in command.

BCAR-OPS 1.981 Operation of helicopters and aeroplanes

This subparagraph is not applicable if operations are limited to single pilot classes of piston engine aeroplanes.

SUBPART P

BCAR-OPS 1. 1045 Operations manual- structure and content

(See **AMC** to **BCAR-OPS 1.1045** in **Annex 1**)

BCAR-OPS 1. 1060 Operational flight plan

(a) Not required for A to A VFR/Day operations.

(b) For A to B VFR/day operations within Belize, a simplified operational flight plan including the following information is accepted:

(1) Aeroplane registration

(2) Date of flight

(3) Place of departure

(4) Place of arrival

(5) Type of operation (VFR or IFR)

(6) Route and route segments with checkpoints/waypoints, distances, time, and tracks. At least, the following checkpoints or waypoints shall be used: established compulsory reporting points TOC, TOD, course changeover points, and points separated by 30 minutes or more.

(7) Planned cruising speed and flying times between check-points/waypoints. Estimated and actual times overhead;

(8) Safe altitudes

(9) Planned altitudes

(10) Fuel calculations (records of in-flight fuel checks in the checkpoints)

(11) Fuel on board when starting engines;

(12) Alternate(s) for destination and, where applicable, take-off and en-route;

(13) If a simplified form of the operational flight plan is used, in-flight re-dispatch shall not be allowed.

SUBPART R

(See AMC to SUBPART R, Annex 1)

SUBPART S

(See **AMC** to **SUBPART S**, **Annex 1**)

BCAR-OPS 1.1235 Security requirements

(**AMC** to **BCAR-OPS 1.1235** in **Annex 1**)

BCAR-OPS 1.1240 Training programmes

The training programme shall be adapted to the kind of operations performed. A self-study training programme may be acceptable for VFR operations.

BCAR-OPS 1.1250 Aeroplane search procedure checklist

Not applicable for VFR operations by day.