

**The Republic of the Union of Myanmar**  
**Ministry of Transport and Communications**  
**Department of Civil Aviation**



# **Myanmar Civil Aviation Requirements**

## **Part 12 – Operation of General Aviation Aeroplanes**

**Published by**  
**Flight Standards Division**

**Third Edition – 2018**

**CIVIL AVIATION REQUIREMENTS MYANMAR**

**MCAR PART –12 – OPERATION OF GENERAL AVIATION AEROPLANES  
THIRD EDITION-MAY- 2018**

**[THIS PAGE INTENTIONALLY LEFT BLANK]**

## Foreword

- a) In exercise of the powers conferred by Section 5 (A) (C) of the Myanmar Aircraft Act (Amended 15<sup>th</sup> October ,2013) and the delegated powers from the Ministry of Transport and Communications as per Notification No.118/2009 dated 9 October 2009, the requirements for the MCAR Part – 12 Operation of General Aviation Aeroplanes (May 2018) is prescribed and shall take effect from 1<sup>st</sup> July 2018.

This Third Edition of Part –12 superseded Revised Edition of April -2012 of MCAR Part –12 Volume (I) Operation of General Aviation Aeroplane.

- b) The content of this MCAR is intended to be harmonized with contents of other related MCARs issued by DCA, Myanmar.
- c) “SAFETY is our top priority” and will never be compromised. Which are hereby strongly encouraged to all safety concerns and sustainable development for all operators.



Min Lwin  
Director General  
Department of Civil Aviation

**TABLE OF DISTRIBUTION LIST OF FLIGHT STANDARDS DIVISION (MCARs)**

No	Description	Subject	Last Issue	Distribution List
1.	MCAR Part.12	Operation of General Aviation Aeroplanes	Third Edition May, 2018	DG Office DY-DG Office(Operations and Inspections) DY-DG Office (Planning and Safety Oversight) DCA Library All Divisions & All Airlines



**CONTENTS**

Part 12 – General Aviation Requirement- Aeroplane

**SECTION 1**

**12.0(a) Introduction.....1**  
**12.0(b) Applicability.....1**

**SECTION 2**

**12.1 Definition.....2**  
**12.2 General.....13**  
12.2.1 Compliance with laws ,regulations and procedures.....13  
12.2.2 Dangerous Goods.....13  
12.2.3 Prohibition of use of psychoactive substances.....13  
12.2.4 Reporting of accidents incidents and occurrences.....14  
12.2.5 Specific approvals.....14  
**12.3 Flight Operations.....14**  
12.3.1 Operating facilities.....14  
12.3.2 Operational Management.....14  
12.3.3 Flight Preparation.....15  
12.3.4 In-Flight Procedures.....18  
12.3.5 In-Flight Management.....20  
12.3.6 Instrument Approach Procedures.....21  
12.3.7 Duties of Pilot-In-Command.....21  
12.3.8 Cabin Baggage (Take-off and Landing).....21  
**12.4 Aeroplane Performance operating limitations.....22**  
12.4.1 General.....22  
**12.5 Aeroplane Instrument ,Equipment and Flight Documents.....23**  
12.5.1 General.....23  
12.5.2 Aeroplane on all flights.....23  
12.5.3 Aeroplanes operated as VFR flights.....25  
12.5.4 Aeroplanes on flight over water.....26  
12.5.5 Aeroplanes on extended flights over water.....26  
12.5.6 Aeroplanes on flights over designated land areas.....27  
12.5.7 Aeroplanes on high altitude flights.....27

12.5.8 Aeroplanes operated in accordance with the instrument flight rules.....27

12.5.9 Aeroplanes when operated at night.....28

12.5.10 Aeroplanes complying with the noise certification standards.....28

12.5.11 Mach Number Indicator.....28

12.5.12 Aeroplanes required to be equipped with ground proximity warning systems  
(GPWS).....28

12.5.13 Emergency locator transmitter (ELT).....29

12.5.14 Aeroplanes Required to be equipped with a pressure –altitude reporting  
Transponder.....29

12.5.15 Microphones.....29

12.5.16 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).....30

12.5.17 Flight Recorders.....30

**12.6 Aeroplane communication and navigation equipment.....31**

12.6.1 Communication equipment.....31

12.6.2 Navigation equipment.....31

**12.7 Aeroplane Maintenance.....32**

**12.8 Aeroplane Flight Crew.....33**

12.8.1 Composition of the flight crew.....33

12.8.2 Qualifications.....33

**12.9 Manuals ,Logs and Records.....34**

12.9.1 Flight Manual.....34

12.9.2 Journey log/ Technical log book.....34

12.9.3 Records of emergency and survival equipment carried.....34

**12.10 Security.....35**

12.10.1 Security of aircraft.....35

12.10.2 Reporting acts of unlawful interference.....35

**SECTION 3 . Large an Turbojet Aeroplanes**

**12.11 General.....36**

12.11.1 Corporate aviation operations.....36

12.11.2 Compliance with laws ,regulations and procedures.....36

12.11.3 Safety Management System.....37

**12.12 Flight Operations.....37**

12.12.1 Operating facilities.....37



12.12.2 Operational management.....	37
12.12.3 Flight Preparation.....	39
12.12.4 In-flight procedures.....	43
12.12.5 Duties of pilot-in-command.....	44
12.12.6 Cabin baggage (take-off and landing).....	44
<b>12.13 Aeroplane performance operating limitations.....</b>	<b>44</b>
12.13.1 General.....	44
<b>12.14 Aeroplane instrument ,equipment and flight documents.....</b>	<b>46</b>
12.14.1 General.....	46
12.14.2 Aeroplanes on all flights.....	46
12.14.3 Aeroplanes in icing conditions.....	48
12.14.4 Aeroplanes operated in accordance with the instrument flight rules.....	48
12.14.5 Pressurised aeroplanes when carrying passengers –weather -detecting equipment.....	48
12.14.6 Aeroplanes operated above 15000 m (49000ft) –radiation indicator.....	49
12.14.7 Aeroplanes required to be equipped with ground proximity warning systems (GPWS).....	49
12.14.8 Aeroplanes carrying passengers-cabin crew seats.....	49
12.14.9 Aeroplanes required to be equipped with an airborne collision avoidance system (ACAS).....	49
12.14.10Aeroplanes required to be equipped with a pressure-altitude reporting Transponder.....	50
12.14.11Microphones.....	50
<b>12.15 Aeroplane communication and navigation equipment.....</b>	<b>50</b>
12.15.2 Installation.....	50
12.15.3 Electronic navigation data management.....	50
<b>12.16 Aeroplane Maintenance.....</b>	<b>51</b>
<b>12.17 Aeroplane flight crew.....</b>	<b>52</b>
12.17.1 Composition of the flight crew.....	52
12.17.2 Flight crew member emergency duties.....	52
12.17.3 Flight crew member training programmes.....	52
12.7.4 Qualification.....	52
<b>12.18 Flight Operations Officer /Flight Dispatcher.....</b>	<b>54</b>
<b>12.19 Manuals,Logs and Records.....</b>	<b>54</b>
12.19.1 Operator’s maintenance control manual.....	54
<b>12.20 Maintenance Programme.....</b>	<b>54</b>
<b>12.21 Flight recorder record.....</b>	<b>54</b>
<b>12.22 Cabin Crew.....</b>	<b>55</b>

12.22.1 Assignment of emergency duties.....55

12.22.2 Cabin crew at emergency evacuation stations.....55

12.22.3 Protection of cabin crew during.....55

12.22.4 Training.....55

**12.23 Security.....55**

12.23.1 Security Programme.....55

Appendix A Company Operations Manual .....56

Appendix B General Aviation Specific Approvals .....57



**SECTION 1****Part- 12 GENERAL AVIATION REQUIREMENT –AEROPLANE****12.0 (a) INTRODUCTION**

- (1) This Requirements lays down provisions for an aircraft operation other than commercial air transport operation or an aerial work operation for aeroplanes registered in Myanmar and engaged in general aviation and lays down the minimum operational equipment and instrument requirements.
- (2) This Requirements has been issued under the provision of Section 5A (c) of the Aircraft Act 1934 as amended for adoption of the minimum operational equipment and instrument requirement of ICAO as per Annex 6 Part II and up to contained amendment 1-34 A International General Aviation.

**(b) APPLICABILITY**

- (1) This provisions of this Requirement are applicable to Myanmar registered aeroplanes engaged in general aviation which include aeroplanes to general Aviation such as certified in private or passenger category for state governments, corporate business houses ,individual owner (s) or when such aeroplanes are not engaged in commercial air transport operations and and aerial work.
- (2) **Section-2** of these Requirements is applicable to all the general aviation operations of aeroplanes and Section-3 adds additional requirements when general aviation operations are conducted with the following
  - (a) Aeroplanes with a maximum certificate take-off mass exceeding 5700 kg;
  - (b) Aeroplanes equipped with one or more turbine engines ,or
  - (c) Aeroplanes with a seating configuration of more than 9 passengers seats.
- (3) The above applicability does not preclude a general aviation operator form satisfying the requirements of **Section “3”** when it may be to the operator’s advantage or tin the interest of safety. Section “3” shall be subject to the International aviation operations with
  - (a) aeroplanes with a maximum certificated take – off mass exceeding 5700 kg ; or
  - (b) aeroplanes equipped with one or more turbojet engines.

## SECTION 2

### 12.1 DEFINITIONS

12.1.1 For the purposes of this MCAR, the following definitions shall apply :

**Acts of unlawful interference.** These are acts or attempted acts such as to jeopardize the safety of civil aviation and air transport, i.e.:

- unlawful seizure of aircraft in flight,
- unlawful seizure of aircraft on the ground,
- hostage-taking on board an aircraft or on aerodromes,
- forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility,
- introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes,
- communication of false information as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility.

**Aerial work.** An aircraft operation in which an aircraft is used for specialized services such as 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) as appropriate to the type and/or category of the operation.

**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.

**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.

***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).

***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 at the aerodrome of intended landing where the necessary services and facilities 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 would be able to land should this become necessary shortly after take-off and 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 in the event that a diversion becomes necessary while en route.

***Destination alternate.*** An alternate aerodrome at which an aircraft would be able to land 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.

***Area navigation (RNAV).*** A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or spaced-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.*

***'Authority'*** means Department of Civil Aviation, Myanmar.

**Cabin crew member.** A crew member who performs, in the interest of 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.

**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 or mail for remuneration or hire.

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

**Continuous descent final approach (CDFA).** A technique, consistent with stabilized approach procedures, for flying the final approach segment of a non-precision instrument approach 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 should begin for the type of aircraft flown.

**Corporate aviation operation.** The non-commercial operation or use of aircraft by a company for the carriage of passengers or goods as an aid to the conduct of company business, flown by a professional pilot(s) employed to fly the aircraft.

**Dangerous goods.** Articles or substances which are capable of posing a 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 Annex 18, Chapter 3.*

**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.

*Note 1.— Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.*

*Note 2.— 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 Category III operations with a decision height the required visual reference is that specified for the particular procedure and operation.*

*Note 3.— For convenience where both expressions are used they may be written in the form “decision altitude/height” and abbreviated “DA/H”.*

**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 aircraft 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 aircraft, stowed so as 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).** A system to display electronic real-time images of the external scene achieved through the use of image sensors.

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

**Extended flight over water.** A flight operated over water at a distance of more than 93 km (50 NM), or 30 minutes at normal cruising speed, whichever is the lesser, away from land suitable for making an emergency landing.

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



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

**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 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.

*Automatic deployable flight recorder (ADFR).* A combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft.

**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. aircraft 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. aircraft 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 aircraft 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.

*Note.— 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.*

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

**Head-up display (HUD).** A display system that presents flight information into the pilot's forward external field of view.

**Industry codes of practice.** Guidance material developed by an industry body, for a particular sector of the aviation industry to comply with the requirements of the International Civil Aviation Organization's Standards and Recommended Practices, other aviation safety requirements and the best practices deemed appropriate.

*Note.— Some States accept and reference industry codes of practice in the development of regulations to meet the requirements of Annex 6, Part II, and make available, for the industry codes of practice, their sources and how they may be obtained.*

**Instrument approach operations.** An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing 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.

*Note.— 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 maneuvers 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 vertical navigation (VNAV) guidance calculated by on-board equipment (see PANSOPS (Doc 8168), Volume I, Part I, Section 4, Chapter 1, 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.*

*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.

*Note.— Refer to MCAR Part 8 for instrument approach operation types.*

***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.

*Note.— The specified minima for visual meteorological conditions are contained in Chapter 4 of Annex 2.*

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

***Large aeroplane.*** An aeroplane of a maximum certificated take-off mass of over 5 700 kg.

***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 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, either in accordance with the approved data and the procedures described in the maintenance organization's procedures manual or under an equivalent system.

***Meteorological information.*** Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

***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.

*Note 1.— 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.*

*Note 2.— 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.*

*Note 3.— For convenience when both expressions are used they may be written in the form “minimum descent altitude/height” and abbreviated “MDA/H”.*

**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.

*Note 1.— The Performance-based Navigation (PBN) Manual (Doc 9613), Volume II, contains detailed guidance on navigation specifications*

*Note 2.— The term RNP, previously defined as “a statement of the navigation performance necessary for operation within a defined airspace”, has been removed from this Annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this Annex 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 GM PBN.*

**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.*

**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.

*Note 1.— 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 procedure is referenced to the aerodrome elevation.*

*Note 2.— For convenience when both expressions are used they may be written in the form “obstacle clearance altitude/height” and abbreviated “OCA/H”.*

**Operating base.** The location from which operational control is exercised.

*Note.— An operating base is normally the location where personnel involved in the operation of the aeroplane work and the records associated with the operation are located. An operating base has a degree of permanency beyond that of a regular point of call.*

**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 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.

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

*Note.— In the context of Annex 6, Part II, the operator is not engaged in the transport of passengers, cargo or mail for remuneration or hire.*

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

*Note.— 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.

*Note.— 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.

*Note.— 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.*

**Pilot-in-command.** The pilot designated by the operator or 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.

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

**Repair.** The restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with the design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate for the respective aircraft type, after it has been damaged or subjected to wear.

**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.

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

**State of Registry.** The State on whose register the aircraft is entered.

*Note.— In the case of the registration of aircraft 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 Aircraft 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.

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

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

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

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

*Note.— The specified minima are contained in Chapter 4 of Annex 2.*

**CHAPTER 2 GENERAL AVIATION OPERATIONS****12.2 GENERAL****12.2.1 Compliance with laws, regulations and procedures**

12.2.1.1 The *pilot-in-command* shall –

- (a) comply with the laws, regulations and procedures of those States in which operations are conducted;
- (b) be familiar with the laws, regulations and procedures, pertinent to the performance of his or her duties, prescribed for the areas to be traversed, the *aerodromes* to be used and the air navigation facilities relating thereto. The *pilot-in-command* 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*;
- (c) have responsibility for *operational control*;
- (d) notify the appropriate authority without delay, if an emergency situation which endangers the safety or security of the *aeroplane* or persons necessitates the taking of action which involves a violation of regulations, requirements or procedures. 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 copy of it to the DCA during the next working day from the time of landing;
- (e) have available on board the *aeroplane* the essential information concerning the search and rescue services in the area over which the *aeroplane* will be flown;
- (f) ensure that *flight crew members* demonstrate the ability to speak and understand the language used for aeronautical radio telephony communications.

**12.2.2 Dangerous goods**

12.2.2.1 An *aeroplane* shall not carry any *dangerous goods* unless approval by granted by authority.

12.2.2.2 Further provisions and information on the carriage of dangerous goods can be found in the MCAR part 1.

**12.2.3 Prohibition of use of psychoactive substances**

12.2.3.1 No member of a flight crew shall perform any function specified in the privileges applicable to his licence if he is under the influence of any psychoactive substance which may render him unable to perform such functions in a safe and proper manner.



12.2.3.2 No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired.

No such person shall engage in any kind of problematic use of substances.

#### **12.2.4 Reporting of accidents, incidents and occurrences**

12.2.4.1 Refer to MCAR AIG .

#### **12.2.5 Specific approvals**

The pilot-in-command shall not conduct operations for which a specific approval is required unless such approval has been issued by the DCA Myanmar. Specific approvals shall follow the layout and contain at least the information listed in **Appendix B**.

### **12.3 FLIGHT OPERATIONS**

#### **12.3.1 Operating facilities**

12.3.1.1 The *pilot-in-command* shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the *aeroplane*, are adequate for the type of operation under which the flight is to be conducted.

#### **12.3.2 Operational management**

12.3.2.1 Operating instructions – general

(a) An *aeroplane* shall not be taxied on the movement area of an *aerodrome* unless the person at the controls is an appropriately qualified pilot or:

- (1) has been duly authorised by the *operator*;
- (2) is fully competent to taxi the *aeroplane*;
- (3) is qualified to use the radio if radio communications are required; and
- (4) has received instruction from a competent person in respect of *aerodrome* layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe *aeroplane* movement at the *aerodrome*.

12.3.2.2 Aerodrome Operating minima

(a) Instrument approach operations are classified in MCAR Part -8

12.3.2.3 Passengers

(a) The *pilot-in-command* shall ensure that passengers are made familiar with the location and use of:

- (1) seat belts;

- (2) emergency exits;
  - (3) life jackets, if the carriage of life jackets is prescribed;
  - (4) oxygen dispensing equipment; and
  - (5) other emergency equipment provided for individual use,
  - (6) including passenger emergency briefing cards.
- (b) The *pilot-in-command* shall ensure that:
- (1) all persons on board are aware of the location and general manner of use of the principal emergency equipment carried for collective use;
  - (2) passengers are instructed in such emergency action as may be appropriate to the circumstances in an emergency during flight; and
  - (3) during take-off and landing and whenever considered necessary by reason of turbulence or any emergency occurring during flight, all passengers on board an *aeroplane* shall be secured in their seats by means of the seat belts or harnesses provided.

### 12.3.3 Flight preparation

12.3.3.1 A flight shall not be commenced until the *pilot-in-command* is satisfied that:

- (a) the *aeroplane* is airworthy, duly registered and that appropriate certificates as required under the MCARs are aboard the *aeroplane*;
- (b) the instruments and equipment installed in the *aeroplane* are appropriate, taking into account the expected flight conditions;
- (c) any necessary *maintenance* has been performed in accordance with MCAR Part 21;
- (d) the mass of the *aeroplane* and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- (e) any load carried is properly distributed and safely secured; and
- (f) the *aeroplane* operating limitations, contained in the *flight manual*, or its equivalent, will not be exceeded.

#### 12.3.3.2 Flight Planning

- (a) Before commencing a flight the *pilot-in-command* shall be familiar with all available *meteorological information* appropriate to the intended flight. Preparation for a flight away from the vicinity of the place of departure, and for every flight under the instrument flight rules, shall include:
  - (1) a study of available current weather reports and forecasts; and
  - (2) the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of weather conditions.

### 12.3.3.3 Meteorological conditions

- (a) A flight to be conducted in accordance with the visual flight rules 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 the visual flight rules will, at the appropriate time, be such as to render 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 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 12.3.3.4, (Alternate Aerodrome) 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 aerodrome operating minima for that operation.
- (c) The DCA Myanmar shall establish criteria to be used for the estimated time of use of an aerodrome including a margin of time.
- (d) 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.
- (e) 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.

### 12.3.3.4 Alternate aerodromes

#### *Destination alternate aerodromes*

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 flight plans, unless:

- (a) 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:
  - (1) the approach and landing may be made under visual meteorological conditions; and

- (2) 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
- (b) the aerodrome of intended landing is isolated and:
  - (1) a standard instrument approach procedure is prescribed for the aerodrome of intended landing;
  - (2) a point of no return has been determined; and
  - (3) a flight shall not be continued past the point of no return unless available current meteorological information indicates that the following meteorological conditions will exist at the estimated time of use:
    - (i) a cloud base of at least 300 m (1 000 ft) above the minimum associated with the instrument approach procedure; and
    - (ii) visibility of at least 5.5 km (3 NM) or of 4 km (2 NM) more than the minimum associated with the instrument approach procedure.

#### 12.3.3.5 Fuel and oil requirements

- (a) 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 and oil to ensure that it can safely complete the flight. The amount of fuel to be carried must permit:
  - (1) when the flight is conducted in accordance with the instrument flight rules and a *destination alternate aerodrome* is not required in accordance with alternate aerodrome , flight to the *aerodrome* of intended landing, and after that, for at least 45 minutes at normal cruising altitude; or
  - (2) when the flight is conducted in accordance with the instrument flight rules and a *destination alternate aerodrome* is required, flight from the *aerodrome* of intended landing to an *alternate aerodrome*, and after that, for at least 45 minutes at normal cruising altitude; or
  - (3) when the flight is conducted in accordance with the visual flight rules by day, flight to the *aerodrome* of intended landing, and after that, for at least 30 minutes at normal cruising altitude; or
  - (4) when the flight is conducted in accordance with the visual flight rules by *night*, flight to the *aerodrome* of intended landing and thereafter for at least 45 minutes at normal cruising altitude.
- (b) 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.

**12.3.3.6 Refuelling with passenger on board**

- (a) An *aeroplane* shall not be refuelled when passengers are embarking, onboard or disembarking unless it is attended by the *pilot-in-command* or other qualified personnel ready to initiate and direct an evacuation of the *aeroplane* by the most practical and expeditious means available.
- (b) When refuelling with passengers embarking, on board or disembarking, two way communications shall be maintained by the *aeroplane's* inter - communication system or other suitable means between the ground crew supervising the refuelling and the *pilot-in-command* or other qualified personnel required by above paragraph (a)

**12.3.3.7 Oxygen supply**

- (a) The PIC shall ensure that breathing oxygen is available to crew members and passengers in sufficient quantities for all flights at such altitudes where a lack of oxygen might result in impairment of the faculties of crew members or harmfully affect passengers.

Note.1. - Guidance on the carriage and use of oxygen is given in MCAR Part -8.

Note.2. - Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in the text of MCAR Part -8 as follows:

Absolute pressure	Metres	Feet
700 hpa	3000	10000
620 hpa	4000	13000
376 hpa	7600	25000

**12.3.4 In-Flight Procedures****12.3.4.1 Aerodrome operating minima**

- (a) 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 affected at that *aerodrome* or at least one *destination alternate aerodrome*, in compliance with the operating minima.
- (b) An instrument approach shall not be continued below 300m (1000 ft) above the aerodrome elevation or into the *final approach segment* unless the reported visibility or controlling RVR is at or above the aerodrome minima.

*Note:- Criteria for the Final Approach Segment is contained in PANS-OPS (Doc 8168), Volume II.*

- (a) If, after entering the *final approach segment* or after descending below 300 m (1000 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 beyond a point at which the limits of the *aerodrome operating minima* would be infringed.

#### 12.3.4.2 Weather reporting by pilots

When weather conditions likely to affect the safety of other *aircraft* are encountered, they shall be reported as soon as possible.

#### 12.3.4.3 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*.

#### 12.3.4.4 Flight crew members at duty stations

- (a) Take-off and landing. All *flight crew members* required to be on flight deck duty shall be at their stations.
- (b) En route. 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.
- (c) Seat belts. All *flight crew members* shall keep their seat belts fastened when at their stations.
- (d) Safety harness. When safety harnesses are provided, any *flight crew member* occupying a pilot's seat shall keep the safety harness fastened during the takeoff 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.

#### 12.3.4.5 Use of oxygen

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 prescribed in paragraph **12.3.3.7**.

12.3.4.6 Safeguarding of cabin crew and passengers in pressurised *aeroplanes* in the event of loss of pressurization

A flight shall not be commenced unless cabin crew are 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 pressurisation and, in addition, they shall have such means of protection as will enable them to administer first aid to passengers during stabilised flight following the emergency. Passengers shall also 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 pressurisation.

**12.3.5 In-Flight Fuel Management**

12.3.5.1 The pilot-in-command shall monitor the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining.

12.3.5.2 The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome, or other air traffic delays, may result in landing with less than the planned final reserve fuel.

*Note.— The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.*

12.3.5.3 The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

*Note 1.— The planned final reserve fuel refers to the value calculated in 2.2.3.6 and is the minimum amount of fuel required upon landing at any aerodrome.*

*Note 2.— The words “MAYDAY FUEL” describe the nature of the distress conditions as required in Annex 10, Volume II, 5.3.2.1.1, b) 3).*

**12.3.6 Instrument Approach Procedures**

- 12.3.6.1 One or more instrument approach procedures designed to support instrument approach operations shall be approved and promulgated by the State in which the aerodrome is located to serve each instrument runway or aerodrome utilized for instrument flight operations.
- 12.3.6.2 Aeroplanes operated in accordance with the instrument flight rules shall comply with the instrument approach procedures approved by the State in which the aerodrome is located.

**12.3.7 Duties of Pilot-In-Command**

- 12.3.7.1 The *pilot-in-command* shall be responsible for –
- (a) the operation, safety and security of the *aeroplane* and the safety of all crew members, passengers and cargo on board;
  - (b) ensuring that a flight –
    - (1) will not be commenced if any *flight crew member* is incapacitated from performing duties by any cause such as injury, sickness, fatigue, the effects of any psychoactive substance; and
    - (2) will not be continued beyond the nearest suitable *aerodrome* when *flight crew members'* capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness or lack of oxygen
  - (c) notifying the nearest appropriate authority by the quickest available means of any *accident* involving the *aeroplane*, resulting in serious injury or death of any person or substantial damage to the *aeroplane* or property.

**12.3.8 Cabin Baggage (Take-Off And Landing)**

- 12.3.8.1 The *pilot-in-command* shall ensure that all baggage carried onto an *aeroplane* and taken into the passenger cabin is securely stowed.



## 12.4 AEROPLANE PERFORMANCE OPERATING LIMITATIONS

### 12.4.1 General

12.4.1.1 An *aeroplane* shall be operated :

- (a) in compliance with the terms of its airworthiness certificate or equivalent approved document;
- (b) within the operating limitations prescribed by the authority and
- (c) if applicable, within the mass limitations imposed by compliance with the applicable noise certificate issued by the authority, 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.

12.4.1.2 A flight shall not be commenced unless placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the authority for visual presentation, are displayed in the *aeroplane*.

12.4.1.3 The *pilot-in-command* shall determine that *aeroplane* performance will permit the take-off and departure to be carried out safely.

## 12.5 AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

### 12.5.1 General

12.5.1.1 In addition to the minimum equipment necessary for the issuance of a certificate of airworthiness, an *aeroplane* shall not fly unless the instruments, equipment and flight documents prescribed in the following paragraphs are installed or carried, as appropriate, in *aeroplanes* according to the *aeroplane* used and to the circumstances under which the flight is to be conducted. The prescribed instruments and equipment, including their installation, shall be complied with MCAR Part -7.

### 12.5.2 *Aeroplanes on all flights*

12.5.2.1 An *aeroplane shall be* 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 the expected operating conditions.

12.5.2.2 *Aeroplanes on all flights shall be equipped with:*

- (a) an accessible first-aid kit;
- (b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the *aeroplane*. At least one shall be located in:
  - (1) the pilot's compartment; and
  - (2) each passenger compartment that is separate from the pilot's compartment and not readily accessible to the Flight Crew ;
- (c)
  - (1) a seat or berth for each person over an age of two years ; and
  - (2) a seat belt for each seat and restraining belts for each berth;
- (d) the following manuals, charts and information
  - (1) the *flight manual* or other documents or information concerning any operating limitations prescribed for the *aeroplane* by the Authority required for the application of any specific approval.
  - (2) current and suitable charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;
  - (3) procedures for pilots-in-command of intercepted *aircraft prescribd in MCAR Part 1*;
  - (4) visual signals for use by intercepting and intercepted *aircraft* contained in MCAR Part 1.
  - (5) the journey log book for the *aeroplane*

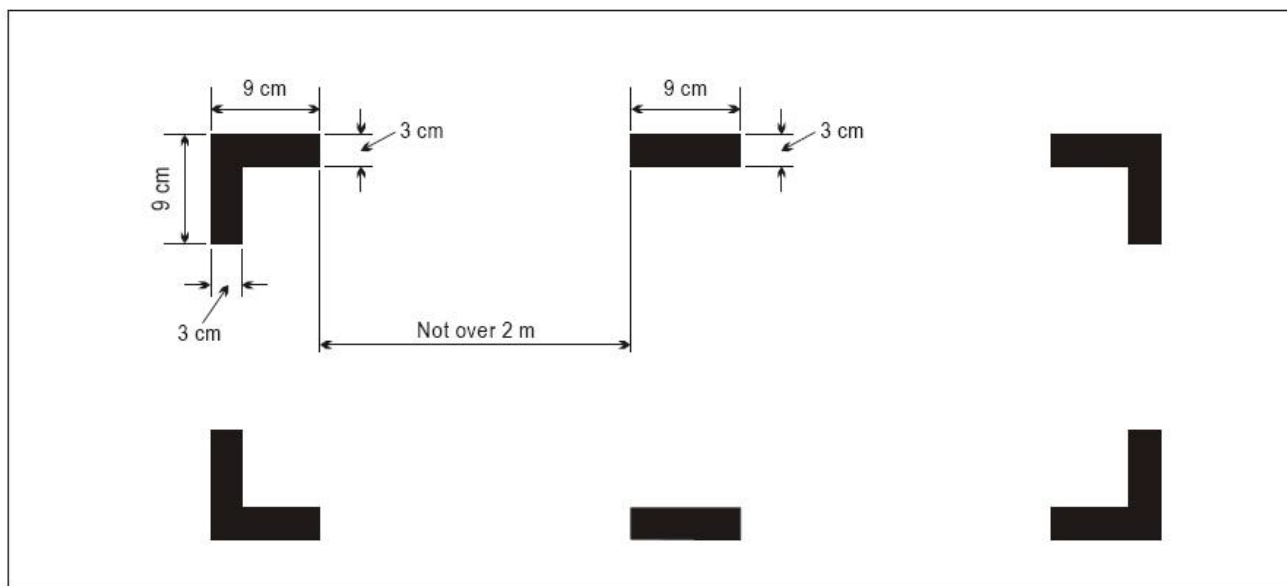
(6) any specific approval issued by the State of Registry, if applicable, for the operation(s) to be conducted;

(e) where the *aeroplane* is fitted with fuses that are accessible in flight, spare electrical of appropriate ratings for replacement of those fuses.

12.5.2.3 **Aeroplanes on all flights shall be equipped with the ground-air signal codes for search and rescue purposes.**

12.5.2.4 *Aeroplanes* on all flights shall be equipped with a safety harness for each *flight crew member* seat. Safety harness includes shoulder strap(s) and a seat belt which may be used independently.

12.5.2.5 Marking of break- in points



### MARKINGS OF BREAK-IN POINTS

- (a) 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 (see figure following). The colour of the markings shall be red or yellow, and if necessary they shall be outlined in white to contrast with the background.
- (b) If the corner markings are more than 2 m apart, intermediate lines 9 cm x 3 cm shall be inserted so that there is no more than 2 m between adjacent markings.

**12.5.2.6 Documents to be Carried Onboard**

Aeroplanes on all flight shall be carried onboard following current and approved documents

- (b) Certificate of Aircraft Registration issued to the owner.
- (c) Certificate of Airworthiness
- (d) Aircraft journey Log
- (e) Aircraft Radio License for international flights.
- (f) List of passenger names and points of embarkation and destination ,if applicable.
- (g) Cargo manifest including special loads information.
- (h) The appropriate licenses for each member of the flight crew.
- (i) Copy of the release to service ,if any, in force with respect to the aircraft or technical log, as applicable.
- (j) Noise certificate , if required.
- (k) AFM for aeroplanes
- (l) Category II or III Manual, as applicable.
- (m) Operational Flight Plan ,for all international flights.
- (n) NOTAMS briefing documentation
- (o) Maps and charts for routes of proposed flight or possibly diverted flights.
- (p) Forms for complying with the reporting requirement of the Authority.
- (q) For international flights , a general declaration for customs.
- (r) Search and rescue information, for international flights.
- (s) Any documentation that may be required by the Authority or States concerned with a proposed flight.

**12.5.3 Aeroplanes operated as VFR flights**

12.5.3.1 A VFR flight shall not be commenced unless the *aeroplane* is equipped with:

- (a) a means of measuring and displaying:
  - (1) magnetic heading;
  - (2) the time in hours, minutes and seconds;
  - (3) pressure altitude;
  - (4) indicated airspeed; and
- (b) equipped with, or shall carry, a means of measuring and displaying time in hours, minutes and seconds; and
- (c) such additional equipment as may be prescribed by the appropriate authority.

## 12.5.4 Aeroplanes on flights over water

### 12.5.4.1 Seaplanes

Seaplanes for all flights shall be equipped with:

- (a) one life jacket, or equivalent individual floatation device, for each person on board, stowed in a position readily accessible from the seat or berth;
- (b) equipment for making the sound signals prescribed in the International Regulations for Preventing Collisions at Sea, where applicable;
- (c) one anchor; and
- (d) one sea anchor (drogue), when necessary to assist in manoeuvring.

### 12.5.4.2 Landplanes

#### *Single-engined landplanes*

#### (a) *All single-engined landplanes:*

- (1) when flying en route over water beyond gliding distance from the shore;  
or
- (2) when taking off or landing at an aerodrome where, in the opinion of the pilot-in-command, 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; should carry one life jacket or equivalent individual floatation 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.

*Note.— “Landplanes” includes amphibians operated as landplanes.*

## 12.5.5 Aeroplanes on extended flights over water

- (a) All *aeroplanes* operated on extended flights over water shall be equipped with, at a minimum, one life jacket or equivalent individual floatation 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.
- (b) The *pilot-in-command* of an *aeroplane* operated on an extended flight over water shall determine the risks to survival of the occupants of the *aeroplane* in the event of a ditching. The *pilot-in-command* shall take into account the operating environment and conditions such as, but not limited to, sea state and sea and air temperatures, the distance from land suitable for making an emergency landing, and the availability of search and rescue facilities. Based upon the assessment of these risks, the *pilot-in-command* shall, in addition to the equipment required in above paragraph(a) , ensure that the flight is only commenced if the *aeroplane* is equipped with:
  - (1) life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with

- such lifesaving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and
- (2) equipment for making the distress signals.

### **12.5.6 Aeroplanes on flights over designated land areas**

- (a) An aeroplane when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, shall not be commenced unless the *aeroplane* is equipped with such signalling devices and lifesaving equipment (including means of sustaining life) as may be appropriate to the area over flown.

### **12.5.7 Aeroplanes on high altitude flights**

12.5.7.1 An *aeroplane* shall not be operated at high altitudes unless it is equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in paragraph 12.3.3.7.

12.5.7.2 A pressurised *aeroplanes* shall not be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa unless it is equipped with a device to provide positive warning to the flight crew of any dangerous loss of pressurisation.

### **12.5.8 Aeroplanes operated in accordance with the instrument flight rules**

12.5.8.1 *Aeroplanes* when operated in accordance with the instrument flight rules, or when the *aeroplane* cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

- (a) a means of measuring and displaying:
- (1) magnetic heading (standby compass);
  - (2) barometric altitude;
  - (3) indicated airspeed, with a means of preventing malfunctioning due to either condensation or icing;
  - (4) turn and slip;
  - (5) *aircraft* attitude; and
  - (6) stabilised *aircraft* heading;

*Note.* - The requirements of 4), 5) and 6) may be met by combinations of instruments or by integrated flight director systems provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

- (7) whether the supply of power to the gyroscopic instruments is adequate;
- (8) the outside air temperature;
- (9) rate-of-climb and descent; and

- (b) equipped with, or shall carry, a means of measuring and displaying time in hours, minutes and seconds; and
- (c) equipped with such additional instruments or equipment as may be prescribed by the appropriate authority.

### **12.5.9      *Aeroplanes when operated at night***

12.5.9.1      An *aeroplane* shall not be operated at *night*, unless it is equipped with:

- (a) the equipment specified in 12.5.8; and
- (b) navigation and anti-collision lights for *aircraft* in flight or operating on the movement area of an *aerodrome*;
- (c) a landing light;
- (d) illumination for all flight instruments and equipment that are essential for the safe operation of the *aeroplane* that are used by the flight crew;
- (e) lights in all passenger compartments; and
- (f) an independent portable light for each crew member station.

*Note.* - Specifications for lights to be displayed by MCAR Part 7.

### **12.5.10     *Aeroplanes complying with the noise certification standards***

An aeroplane shall carry a document attesting noise certification according to Annex 16, Volume I.

### **12.5.11     *Mach Number Indicator***

12.5.11.1     Aeroplanes with speed limitations expressed in terms of Mach number shall be equipped with a means of displaying Mach number.

### **12.5.12     *Aeroplanes required to be equipped with ground proximity warning systems (GPWS)***

12.5.12.1     A flight operated with turbine engine *aeroplanes* of a maximum certificated take-off mass in excess of 5700 kg or authorised to carry more than nine passengers shall not be commenced unless the *aeroplanes* are equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

12.5.12.2     A ground proximity warning system shall provide automatically a timely and distinctive warning to the flight crew when the *aeroplane* is in potentially hazardous proximity to the earth's surface.

12.5.12.3 A ground proximity warning system shall provide, as a minimum, warnings of at least the following circumstances:

- (a) excessive descent rate;
- (b) excessive altitude loss after take-off or go-around;
- (c) unsafe terrain clearance.

12.5.12.4 A ground proximity warning system installed in turbine – engine *aeroplanes* of a maximum certificated take-off mass in excess of 5700 kg or authorised to carry more than nine passengers for which the individual certificate of airworthiness was first issued after 1 January 2011 shall provide, as a minimum, warning of at least the following circumstances:

- (a) excessive descent rate
- (b) excessive terrain closure rate
- (c) excessive altitude loss after take-off or go-around
- (d) unsafe terrain clearance while not in landing configuration
  - (1) gear not locked down
  - (2) flaps not in a landing position; and
- (e) excessive descent below the instrument glide path.

### **12.5.13 Emergency locator transmitter (ELT)**

12.5.13.1 A flight shall not be commenced unless the *aeroplane* is equipped with an automatic emergency locator transmitter (ELT).

### **12.5.14 Aeroplanes Required To Be Equipped With A Pressure-Altitude Reporting Transponder**

12.5.14.1 A flight shall not be commenced unless the *aeroplane* is equipped with a pressure-altitude reporting transponder which operates in accordance with the MCAR Part 7.

12.5.14.2 A VFR flight shall not be commenced unless the *aeroplane* is equipped with a pressure-altitude reporting transponder which operates in accordance with the MCAR Part 7.

### **12.5.15 Microphones**

12.5.15.1 When operating under the instrument flight rules all *flight crew members* required to be on flight deck duty shall communicate through boom or throat microphones below the transition level/altitude.



**12.5.16      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)**

12.5.16.1      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, criteria for the use of such systems for the safe operation of an aeroplane shall be approved by Authority.

**12.5.17      Flight Recorders**

Refer to MCAR Part -7

## **12.6 AEROPLANE COMMUNICATION AND NAVIGATION EQUIPMENT**

### **12.6.1 Communication equipment**

12.6.1.1 An *aeroplane* shall not be operated in accordance with the instrument flight rules or at *night* unless it is provided with radio communication equipment. Such equipment shall be capable of conducting two-way communication with those aeronautical stations and on those frequencies prescribed by the Authority.

12.6.1.2 When compliance with **12.6.1.1** requires that more than one communication equipment unit be provided, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

12.6.1.3 An *aeroplane* shall not be operated in accordance with the visual flight rules as a controlled flight, unless it is provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the Authority. This requirement applies unless when it is exempted by the *Authority*.

12.6.1.4 An *aeroplane* shall not be operated on extended flights over water or across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, unless it is provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the Authority.

12.6.1.5 The radio communication equipment required in accordance with 12.6.1.1 to 12.6.1.4. shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

12.6.1.6 For flight operations in defined portions of airspace or on routes where an RCP type has been prescribed, an *aeroplane* shall, in addition to the requirements specified in **12.6.1.1 to 12.6.1.5**:

- (a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP type(s); and
- (b) be authorised by the Authority for such operations.

### **12.6.2 Navigation equipment**

12.6.2.1 A flight shall not be commenced unless the *aeroplane* is provided with navigation equipment which will enable it to proceed

- (a) in accordance with the *flight plan*; and

- (b) in accordance with the requirements of air traffic services; except when, if not so precluded by the appropriate authority, navigation for flights under the visual flight rules is accomplished by visual reference to landmarks.

12.6.2.2 For operations where a navigation specification for PBN has been prescribed, an *aeroplane* shall, in addition to the requirements specified in 12.6.2.1:

- (a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s) according to MCAR Part (1) and Part (8) and
- (b) be authorised by the Authority for such operations.

12.6.2.3 A flight in defined portions of airspace where, based on regional air navigation agreement, a reduced vertical separation minimum (RVSM) of 300 m (1000 ft) is applied between FL 290 and FL 410 inclusive, shall not be commenced unless the *aeroplane*:

- (a) is provided with equipment which is capable of:
  - (1) indicating to the flight crew the flight level being flown;
  - (2) automatically maintaining a selected flight level;
  - (3) providing an alert to the flight crew when a deviation occurs from the selected flight level. The threshold for the alert shall not exceed  $\pm 90$  m (300 ft); and
  - (4) automatically reporting pressure-altitude; and
- (b) is authorised by the Authority for operation in the airspace concerned; and
- (c) Shall demonstrate a vertical navigation performance in accordance with MCAR Part 8.

12.6.2.4 An *operator* or an owner of Myanmar Registered *aeroplane* shall

- (a) ensure that the vertical navigation performance capability of the *aeroplane* satisfies the requirements specified in MCAR Part 1;
- (b) institute appropriate procedures in respect of continued airworthiness (*maintenance* and *repair*) practices and programmes; and
- (c) institute appropriate flight crew procedures for operations in RVSM airspace.

## 12.7 Aeroplane Maintenance

**Refer to MCAR Part M and Part 21.**

**12.8 AEROPLANE FLIGHT CREW****12.8.1 Composition of the *flight crew***

12.8.1.1 A flight shall not be commenced unless the number and composition of the flight crew is no less than that specified in the *flight manual* or other documents associated with the certificate of airworthiness.

**12.8.2 Qualifications**

12.8.2.1 The pilot-in-command shall:

- (a) ensure that each *flight crew member* holds a valid licence issued by the Authority;
- (b) ensure that *flight crew members* are properly rated;
- (c) be satisfied that *flight crew members* have maintained competency; and
- (d) ensure that each *flight crew member* has been appropriately trained to competency in the use of ACAS II equipment and the avoidance of collision, if the *aeroplane* is equipped with an airborne collision avoidance system (ACAS II).

**12.9 MANUALS, LOGS AND RECORDS****12.9.1 Flight manual**

12.9.1.1 An *operator* or an owner of a Myanmar registered *aeroplane* shall ensure that the *aeroplane flight manual* is updated by implementing changes made mandatory by the *aircraft* manufacturer and/or by the Authority.

**12.9.2 Journey log / Technical log book**

12.9.2.1 An *operator* or an owner of a Myanmar registered *aeroplane* shall ensure that a journey log / technical log book is maintained for every *aeroplane* engaged in international air navigation in which shall be entered particulars of the *aeroplane*, its crew and each journey.

12.9.2.2 The *aeroplane* journey / technical log shall contain the following items:

- (a) *aeroplane* nationality and registration;
- (b) date;
- (c) crew member names and duty assignments;
- (d) departure and arrival points and times;
- (e) purpose of flight;
- (f) observations regarding the flight; and
- (g) signature of the *pilot-in-command*.

**12.9.3 Records of emergency and survival equipment carried**

12.9.3.1 An *operator* or an owner of a Myanmar registered *aeroplane* shall at all times have available for immediate communication to rescue coordination centres, lists containing information on the emergency and survival equipment carried on board the *aeroplane* engaged in international air navigation. 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 the emergency portable radio equipment.

**12.10 SECURITY****12.10.1 Security of *aircraft***

12.10.1.1 The pilot-in-command shall be responsible for the security of the aircraft during its operation.

**12.10.2 Reporting acts of unlawful interference**

12.10.2.1 Following an act of unlawful interference, the pilot-in-command shall submit a report of such an act to the Authority.

**SECTION 3**  
**LARGE AND TURBOJET AEROPLANES**

**12.11 GENERAL**

**12.11.1 Corporate Aviation Operations**

A corporate aviation operation involving three or more aircraft that are operated by pilots employed for the purpose of flying the aircraft should be conducted in accordance with Section 3.

Note.— The term “aircraft” is used to indicate that a corporate aviation operation using a mix of aeroplanes and helicopters is subject to this Recommendation as long as at least one aeroplane is involved.

**12.11.2 Compliance with laws, regulations and procedures**

- (a) The operator shall ensure that all employees know that they must comply with the laws, regulations and procedures of those States in which operations are conducted.
- (b) The operator shall ensure that all pilots are familiar with the laws, regulations and procedures, 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. 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.
- (c) The pilot-in-command is responsible for operational control. The operator shall describe the operational control system in the operations manual and identify the roles and responsibilities of those involved with the system.
- (d) The operator shall ensure that the pilot-in-command has available on board the aeroplane all the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.
- (e) The operator shall ensure that flight crew members demonstrate the ability to speak and understand the language used for aeronautical radiotelephony communications as specified in MCAR Part 2.

**12.11.3 Safety management system**

12.11.3.1 An *operator* shall establish and maintain a safety management system that is appropriate to the size and complexity of the operation according to MCAR SM .

**12.12 Flight Operations****12.12.1 Operating facilities**

12.12.1.1 An *operator* shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the *aeroplane*, are adequate for the type of operation under which the flight is to be conducted.

*Note.* - “Reasonable means” in these Requirements is intended to denote the use, at the point of departure, of information available to the operator either through official information published by the aeronautical information services or readily obtainable from other sources.

**12.12.2 Operational management**

## 12.12.2.1 Operations manual

- (a) An *operator* shall provide, for the use and guidance of personnel concerned, an *operations manual* containing all the instructions and information necessary for operations personnel to perform their duties. The *operations manual* shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be issued to all personnel that are required to use this manual.

*Note.1* - Appendix A contains guidance on the organisation and content of an *operations manual*.

## 12.12.2.2 Operating instructions — general

- (a) An *operator* shall
- (1) ensure that all operations personnel are properly instructed in their particular duties and responsibilities and the relationship of such duties to the operation as a whole.



### 12.12.2.3 In-flight simulation of emergency situations

- (a) An *operator* shall ensure that when passengers are being carried, no emergency or abnormal situations shall be simulated.

### 12.12.2.4 Checklists

- (a) An *operator* shall provide checklists to be used by flight crews prior to, during and after all phases of operations, and in emergencies, to ensure compliance with the operating procedures contained in the *aircraft* operating manual and the *aeroplane flight manual* or other documents associated with the certificate of airworthiness and otherwise in the *operations manual*, are followed. The design and utilisation of checklists shall observe Human Factors principles.

### 12.12.2.5 Minimum flight altitudes

- (a) An *operator* shall specify, for flights which are to be conducted in accordance with the instrument flight rules, the method of establishing terrain clearance altitudes.

### 12.12.2.6 Aerodrome operating minima

- (a) An *operator* shall ensure that no *pilot-in-command* operates to or from an *aerodrome* using operating minima lower than those which may be established for that *aerodrome*.

### 12.12.2.7 Fatigue management programme

- (a) An *operator* shall establish and implement a fatigue management programme that ensures that all personnel involved in the operation and *maintenance* of *aircraft* do not carry out their duties when fatigued. The programme shall address flight and duty times and be included in the *operations manual*.

### 12.12.2.8 Passengers

- (a) An *operator* shall ensure that passengers are made familiar with the location and use of:
  - (1) seat belts;
  - (2) emergency exits;
  - (3) life jackets, if the carriage of life jackets is prescribed;
  - (4) oxygen dispensing equipment, if the provision of oxygen for the use

- of passengers is prescribed; and
- (5) other emergency equipment provided for individual use, including passenger emergency briefing cards.
- (b) An *operator* shall ensure that
- (1) all persons on board are aware of the location and general manner of use of the principal emergency equipment carried for collective use;
  - (2) in an emergency during flight, passengers are instructed in such emergency action as may be appropriate to the circumstances; and
  - (3) during take-off and landing and whenever considered necessary, by reason of turbulence or any emergency occurring during flight, all passengers on board an *aeroplane* are secured in their seats by means of the seat belts or harnesses provided.

### 12.12.3 Flight preparation

12.12.3.1 An *operator* shall develop procedures to ensure that a flight is not commenced unless:

- (a) the *aeroplane* is airworthy, duly registered and that appropriate certificates with respect thereto are aboard the *aeroplane*;
- (b) the instruments and equipment installed in the *aeroplane* are appropriate, taking into account the expected flight conditions;
- (c) any necessary *maintenance* has been performed in accordance with paragraph 8 of this Chapter.
- (d) the mass of the *aeroplane* and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- (e) any load carried is properly distributed and safely secured; and
- (f) the *aeroplane* operating limitations, contained in the *flight manual*, or its equivalent, will not be exceeded.

#### 12.12.3.2 Operational flight planning

- (a) An *operator* shall specify flight planning procedures to provide 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. These procedures shall be included in the *operations manual*.

### 12.12.3.3 Alternate Aerodromes - Take-off alternate aerodrome

- (a) A flight shall not be commenced unless a *take-off alternate aerodrome* is selected and specified in the flight plan if the weather conditions at the *aerodrome* of departure are at or below the applicable *aerodrome operating minima* or it would not be possible to return to the *aerodrome* of departure for other reasons.
- (b) The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure:
  - (i) 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
  - (ii) 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.
- (c) 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 *aerodrome operating minima* for that operation.

### 12.12.3.4 Fuel Requirements

- (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) fuel consumption data:
    - (i) provided by the aeroplane manufacturer; or
    - (ii) if available, current aeroplane-specific data derived from a fuel consumption monitoring system; and
  - (2) the operating conditions for the planned flight including:
    - (i) anticipated aeroplane mass;
    - (ii) Notices to Airmen;
    - (iii) current meteorological reports or a combination of current reports and forecasts;
    - (iv) air traffic services procedures, restrictions and anticipated delays; and
    - (v) the effects of deferred maintenance items and/or configuration deviations.

- (c) The pre-flight calculation of usable fuel required shall include:
- (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 until landing at the destination aerodrome taking into account the operating conditions of 12.12.3.4(b)(2);
  - (3) *contingency fuel*, which shall be the amount of fuel required to compensate for unforeseen factors. It shall be not less than five per cent of the planned trip fuel;
  - (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:
      - (aa) perform a missed approach at the destination aerodrome;
      - (bb) climb to the expected cruising altitude;
      - (cc) fly the expected routing;
      - (dd) descend to the point where the expected approach is initiated; and
      - (ee) conduct the approach and landing at the destination alternate aerodrome; or
    - (ii) 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
    - (iii) where the aerodrome of intended landing is an isolated aerodrome:
      - (aa) 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
      - (bb) 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 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; or

- (ii) for a turbine-engine aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions;
- (6) additional fuel, which shall be the supplementary amount of fuel required to enable the aircraft to descend as necessary and proceed to land at an alternate aerodrome in the event of engine failure or loss of pressurization based on the assumption that such a failure occurs at the most critical point along the route;
- (7) discretionary fuel, which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.
- (d) Operators should determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure.
- (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.

#### 12.12.3.5 In-flight fuel management

- (a) The operator shall establish policies and procedures to ensure that in-flight fuel checks and fuel management are performed.
- (b) The pilot-in-command shall continually ensure that the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining upon landing.
- (c) The pilot-in-command shall request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.
- (d) The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.
- (e) The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

#### 12.12.3.6 Refuelling with passengers on board

- (a) An aeroplane shall not be refuelled when passengers are embarking, on board or disembarking unless it is properly attended by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available.

- (b) When refuelling with passengers embarking, on board or disembarking, two-way communication shall be maintained by the aeroplane's intercommunication system or other suitable means between the ground crew supervising the refuelling and the qualified personnel on board the aeroplane.

#### 12.12.3.7 Oxygen supply

- (a) A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 700 hPa 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 in excess of 30 minutes that the pressure in compartments occupied by them will be between 700 hPa and 620 hPa; and
  - (2) the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 620 hPa.
- (b) A flight to be operated with a pressurised aeroplane shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurisation, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa. In addition, when an *aeroplane* is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, if operated at flight altitudes at which the atmospheric pressure is more than 376 hPa and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, there shall be no less than a 10-minute supply for the occupants of the passenger compartment.

### 12.12.4 In-flight procedures

#### 12.12.4.1 Instrument approaches

- (a) An *operator* shall include operating procedures for conducting instrument approaches in the *aircraft operations manual*.

#### 12.12.4.2 Use of oxygen

- (a) 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 in 12.12.3.5(a) or (b) .
- (b) All *flight crew members* of pressurised *aeroplanes* operating above an altitude where the atmospheric pressure is less than 376 hPa shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand.

## 12.12.5 Duties of pilot-in-command

12.12.5.1 The pilot-in-command shall

- (a) ensure that the checklists specified in para 12.12.2.4 are complied with;
- (b) notify the nearest appropriate authority by the quickest available means of any *accident* involving the *aeroplane*, resulting in serious injury or death of any person or substantial damage to the *aeroplane* or property. In the event that the *pilot-in-command* is incapacitated the *operator* shall take the forgoing action;
- (c) report all known or suspected defects in the *aeroplane*, to the *operator*, at the termination of the flight; and
- (d) be responsible for the journey log / technical log book or the general declaration containing the information listed in 12.9.2

## 12.12.6 Cabin baggage (take-off and landing)

12.12.6.1 An *operator* shall specify procedures to ensure that all baggage carried onto an *aeroplane* and taken into the passenger cabin is adequately and securely stowed.

## 12.13 AEROPLANE PERFORMANCE OPERATING LIMITATIONS

### 12.13.1 General

12.13.1.1 The requirements contained in 12.13.1.2 to 12.13.1.8 inclusive are applicable to all *aeroplanes* of over 5700 kg maximum certificated take-off mass.

12.13.1.2 All *aeroplane* shall be operated in compliance with the terms of its certificate of airworthiness and within the approved operating limitations contained in its *flight manual*.

12.13.1.3 A flight shall not be commenced unless the performance information provided in the *flight manual* indicates that the requirements of 12.13.1.4 to 12.13.1.8 can be complied with for the flight to be undertaken.

12.13.1.4 In applying the requirements of this Chapter, account shall be taken of all factors that significantly affect the performance of the *aeroplane* (such as: mass, operating procedures, the pressure-altitude appropriate to the elevation of the *aerodrome*, temperature, wind, runway gradient and condition of runway, i.e. presence of slush, water and/or ice, for landplanes, water surface condition for seaplanes). Such factors shall be taken into account 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 operated.

## 12.13.1.5 Mass limitations

- (a) The mass of the *aeroplane* at the start of take-off shall not exceed the mass at which 12.13.1.6 is complied with, nor the mass at which 12.13.1.7 and 12.13.1.8 are complied with, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is envisaged in applying 12.13.1.7 and 12.13.1.8 and, in respect of *alternate aerodromes* 13.1.5(c) and 12.13.1.8.
- (b) 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.
- (c) 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.
- (d) 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 *aircraft* noise certification, 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.

## 12.13.1.6 Take-off

- (a) The *aeroplane* shall be able, in the event of a critical power-unit failing at any point in the take-off, either to discontinue the take-off and stop within the accelerate-stop distance available [or runway available], or to continue the take-off and clear all obstacles along the flight path by an adequate margin until the *aeroplane* is in a position to comply with 12.13.1.7.
- (b) 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.

## 12.13.1.7 En route — one engine inoperative

- (a) 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 the requirement of 12.13.1.8 can be met, without flying below the minimum *obstacle clearance altitude* at any point.



**12.13.1.8 Landing**

- (a) 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.

**12.14 AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS****12.14.1 General**

- 12.14.1.1 Where a master minimum equipment list (MMEL) is established for the *aircraft* type, the *operator* shall include in the *operations manual* a minimum equipment list (MEL) approved by the Authority which will enable the *pilot-in command* to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or systems become inoperative.

*Note.* – MCAR Part -1 contains guidance on the minimum equipment list.

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

**12.14.2 Aeroplanes on all flights**

- 12.14.2.1 In addition to the requirements contained in 12.5.2.2, a flight shall be not commenced unless the *aeroplane* is equipped with:
- (a) accessible and adequate medical supplies appropriate to the number of passengers the *aeroplane* is authorised to carry;
  - (b) medical supplies shall comprise one or more first aid kits; according to the MCAR Part 8;
  - (c) a safety harness for each flight crew seat. The safety harness for each pilot seat shall incorporate a device which will automatically restrain the occupant's torso in the event of rapid deceleration;

- (d) means of ensuring that the following information and instructions are conveyed to passengers:
  - (1) when seat belts are to be fastened;
  - (2) when and how oxygen equipment is to be used if the carriage of oxygen is required;
  - (3) restrictions on smoking;
  - (4) location and use of life jackets or equivalent individual flotation devices where their carriage is required;
  - (5) location of emergency equipment; and
  - (6) location and method of opening emergency exits.

12.14.2.2 A flight shall not be commenced unless the *aeroplane* carries:

- (a) the *operations manual* prescribed in 12.5.2.2, or those parts of it that pertain to flight operations;
- (b) the *flight manual* for the *aeroplane*, or other documents containing the *aeroplane* performance operating limitations and any other information necessary for the operation of the *aeroplane* within the terms of its certificate of airworthiness, unless these data are available in the *operations manual*; and
- (c) the checklists to which 12.12.2.4 refers.

12.14.2.3 *Aeroplanes on long-range over-water flights*

- (a) The *operator* operating an extended flight over water, shall determine the risks to survival of the occupants of the *aeroplane* in the event of a ditching. The *operator* shall take into account the operating environment and conditions such as, but not limited to, sea state and sea and air temperatures, the distance from land suitable for making an emergency landing, and the availability of search and rescue facilities. Based upon the assessment of these risks, the *operator* shall, in addition to the equipment required in 12.5.4, ensure that the *aeroplane* is appropriately equipped with:
  - (1) life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such lifesaving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and
  - (2) equipment for making the distress signals according to MCAR Part 1.
- (b) Each life jacket and equivalent individual flotation device, when carried in accordance with 12.5.4, shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons except where the requirement of 12.5.5(a) is met by the provision of individual flotation devices other than life jackets.

**12.14.3 Aeroplanes in icing conditions**

12.14.3.1 *Aeroplanes* shall be equipped with suitable de-icing and/or anti-icing devices when operated in circumstances in which icing conditions are reported to exist or are expected to be encountered.

**12.14.4 Aeroplanes operated in accordance with the instrument flight rules**

12.14.4.1 In addition to the requirements contained in 12.5.8, a flight operated in accordance with the instrument flight rules or when the *aeroplane* cannot be maintained in a desired attitude without reference to one or more flight instruments, shall not be commenced unless the *aeroplane* is equipped with two independent altitude measuring and display systems.

12.14.4.2 *Aeroplanes* over 5 700 kg —Emergency power supply for electrically operated attitude indicating instruments

- (a) A flight operated with aeroplanes of a maximum certificated take-off mass of over 5700 kg newly introduced into service after 1 January 1975 shall be fitted with an emergency power supply, independent of the main electrical generating system, for the purpose of operating and illuminating, for a minimum period of 30 minutes, an attitude indicating instrument (artificial horizon), clearly visible to the *pilot-in-command*. The emergency power supply shall be automatically operative after the total failure of the main electrical generating system and clear indication shall be given on the instrument panel that the attitude indicator(s) is being operated by emergency power.
- (b) *Aircraft* with advanced cockpit automation systems (glass cockpits) shall have system redundancy that provides the flight crew with attitude, heading, airspeed and altitude indications in case of failure of the primary system or display.
- (c) Instruments that are used by any one pilot shall be so arranged as to permit the pilot to see their indications readily from his or her station, with the minimum practicable deviation from the position and line of vision normally assumed when looking forward along the flight path.

**12.14.5 Pressurised aeroplanes when carrying passengers — weather-detecting equipment**

12.14.5.1 A flight operated with pressurised *aeroplanes* carrying passengers shall not be commenced unless the *aeroplane* is equipped with operative weather detecting equipment capable of detecting thunderstorms whenever such *aeroplanes* are being operated in areas where such conditions may be expected to exist along the route either at *night* or under instrument meteorological conditions.

**12.14.6 Aeroplanes operated above 15 000 m (49 000 ft) — radiation indicator**

12.14.6.1 A flight operated with an *aeroplane* intending to be primarily operated above 15 000 m (49 000 ft) shall not be commenced unless the *aeroplane* carries equipment 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. The display unit of the equipment shall be readily visible to a *flight crew member*.

**12.14.7 Aeroplanes required to be equipped with ground proximity warning systems (GPWS)**

12.14.7.1 A flight shall not be commenced unless the *aeroplane* is equipped in accordance with 12.5.12.

**12.14.8 Aeroplanes carrying passengers — cabin crew seats**

12.14.8.1 A flight shall not be commenced unless the *aeroplane* complies with the requirements pertaining to cabin crew seats shall be equipped with a forward or rearward facing seat (within 15 degrees of the longitudinal axis of the *aeroplane*), fitted with a safety harness for the use of each cabin crew member required to satisfy the intent of assignment of emergency duty in respect of emergency evacuation.

*Note. - Safety harness includes shoulder straps and a seat belt which may be used independently.*

12.14.8.2 Cabin crew seats provided in accordance shall be located near floor level and other emergency exits as required by the Authority for emergency evacuation.

**12.14.9 Aeroplanes required to be equipped with an airborne collision avoidance system (ACAS)**

12.14.9.1 All turbine - engine *aeroplanes* of a maximum certificated take-off mass in excess of 15 000 kg, or authorised to carry more than 30 passengers, for which the individual airworthiness certificate is first issued after 1 January 2007, shall be equipped with an airborne collision avoidance system (ACAS II) .

**12.14.10 Aeroplanes required to be equipped with a pressure-altitude reporting transponder**

12.14.10.1 A flight shall not be commenced unless the *aeroplane* is equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Annex 10 to the Convention on International Civil Aviation, Volume IV.

**12.14.11 Microphones**

12.14.11.1 All *flight crew members* required to be on flight deck duty shall communicate through boom or throat microphones below the transition level/altitude.

**12.14.12 Flight Recorders**

Refer to MCAR Part-7

**12.15 AEROPLANE COMMUNICATION AND NAVIGATION EQUIPMENT****12.15.1 Communication equipment**

12.15.1.1 In addition to the requirements of 12.6.1.1 to 12.6.1.5, a flight shall not be commenced unless the *aeroplane* is provided with radio communication equipment capable of:

- (a) conducting two-way communication for *aerodrome* control purposes;
- (b) receiving meteorological information at any time during flight; and
- (c) conducting two-way communication at any time during flight with at least one aeronautical station and with such other aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

*Note.* - *The requirements of 12.15.1 are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.*

**12.15.2 Installation**

12.15.2.1 A flight shall not be commenced unless the equipment installation on the *aeroplane* is such that the failure of any single unit required for either communications or navigation purposes or both will not result in the failure of another unit required for communications or navigation purposes.

**12.15.3 Electronic navigation data management**

12.15.3.1 An *operator* shall

- (a) not employ electronic navigation data products that have been processed for application in the air and on the ground unless the Authority 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 products are compatible with the intended function of the equipment that will use them. The Authority shall ensure that the *operator* continues to monitor both process and products; and

- (b) implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all *aeroplanes* that require it.

## **12.16 AEROPLANE MAINTENANCE**

**Refer to MCAR Part M and Part 21.**

**12.17 AEROPLANE FLIGHT CREW****12.17.1 Composition of the flight crew**12.17.1.1 Designation of *pilot-in-command*

(a) For each flight, the *operator* shall designate a pilot to act as *pilot-in-command*.

**12.17.2 Flight crew member emergency duties**

12.17.2.1 The *operator* shall, for each type of *aeroplane*, assign to all *flight crew members* the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation. Recurrent training in accomplishing these functions shall be contained in the *operator's* training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the *aeroplane*.

**12.17.3 Flight crew member training programmes**

12.17.3.1 The *operator* shall establish and maintain a training programme that is designed to ensure that a person who receives training acquires and maintains the competency to perform assigned duties, including skills related to human performance. Ground and flight training programmes shall be established either through internal programmes or through a training services provider, and shall include or make reference to a syllabus for those training programmes in the company *operations manual*. The training programme shall include training to competency for all equipment installed.

12.17.3.2 *Flight simulators* shall be used to the maximum extent practicable for initial and annual recurrent training.

**12.17.4 Qualifications**12.17.4.1 *Flight crew member* licensing

(a) The *operator* shall:

- (1) ensure that each flight crew member assigned to duty holds a valid licence; ensure that flight crew members are properly rated; and
- (2) be satisfied that flight crew members are competent to carry out assigned duties.

(b) The *operator* which is equipped with an airborne collision avoidance system (ACAS II) shall ensure that each *flight crew member* has been appropriately trained to competency in the use of ACAS II equipment and the avoidance of collisions.

- 12.17.4.2      Recent experience — *pilot-in-command*
- (a)      The *operator* shall not assign a pilot to act as *pilot-in-command* of an *aeroplane* unless that pilot has made at least three take-offs and landings within the preceding 90 days on the same type of *aeroplane* or in a *flight simulator* approved for the purpose.
- 12.17.4.3      Recent experience — co-pilot
- (a)      The *operator* shall not assign a co-pilot to operate at the flight controls of an *aeroplane* during takeoff and landing unless that pilot has made at least three take-offs and landings within the preceding 90 days on the same type of *aeroplane* or in a *flight simulator* approved for the purpose.
- 12.17.4.4      Pilot proficiency checks
- (a)      The *operator* shall ensure that piloting technique and the ability to execute emergency procedures is checked annually in such a way as to demonstrate the pilot's competence. Where the operation may be conducted under the instrument flight rules, an *operator* shall ensure that the pilot's competence to comply with such rules is demonstrated to either a check pilot of the *operator* or a representative of the Authority.



**12.18 FLIGHT OPERATIONS OFFICER/FLIGHT DESPATCHER**

12.18.1 The *operator* shall ensure that any person assigned as a flight operations officer/flight despatcher is trained and maintains familiarisation with all features of the operation which are pertinent to their duties, including knowledge and skills related to Human Factors according to MCAR Part 8.

**12.19 MANUALS, LOGS AND RECORDS****12.19.1 *Operator's maintenance control manual***

**Refer to MCAR Part 21 and Part M**

**12.20 MAINTENANCE PROGRAMME**

**Refer to MCAR Part 21 and Part M**

**12.21 FLIGHT RECORDER RECORDS**

**Refer to Airworthiness Notices**

**12.22 CABIN CREW****12.22.1 Assignment of emergency duties**

12.22.1.1 The requirement for cabin crew for each type of *aeroplane* shall be determined by the *operator*, based on seating capacity or the number of passengers carried, in order to effect a safe and expeditious evacuation of the *aeroplane*, and the necessary functions to be performed in an emergency or a situation requiring emergency evacuation. The *operator* shall assign these functions for each type of *aeroplane*.

**12.22.2 Cabin crew at emergency evacuation stations**

12.22.2.1 Each cabin crew member assigned to emergency evacuation duties shall occupy a seat provided in accordance with 12.14.8 during takeoff and landing and whenever the *pilot-in-command* so directs.

**12.22.3 Protection of cabin crew during flight**

12.22.3.1 Each cabin crew member shall be seated with seat belt or, when provided, safety harness fastened during takeoff and landing and whenever the *pilot-in command* so directs.

**12.22.4 Training**

12.22.4.1 The *operator* shall

- (a) ensure that a training programme is completed by all persons before being assigned as a cabin crew member; and
- (b) establish and maintain a cabin crew training programme that is designed to ensure that persons who receive training acquire the competency to perform their assigned duties and includes or makes reference to a syllabus for the training programme in the company *operations manual*. The training programme shall include Human Factors training.

**12.23 SECURITY****12.23.1 Security programme**

12.23.1.1 Refer to National Civil Aviation Security Programme of the Republic of the Union of Myanmar.

**APPENDIX A (12.12.2.1)**  
**COMPANY OPERATIONS MANUAL**

The following is the suggested content of a company *operations manual*. It may be issued in separate parts corresponding to specific aspects of an operation. It shall include the instructions and information necessary to enable the personnel concerned to perform their duties safely and shall contain at least the following information:

- (a) table of contents;
- (b) amendment control page and list of effective pages, unless the entire document is reissued with each amendment and the document has an effective date on it;
- (c) duties, responsibilities and succession of management and operating personnel;
- (d) *operator* safety management system;
- (e) *operational control* system;
- (f) MEL procedures (where applicable);
- (g) normal flight operations;
- (h) SOPs;
- (i) weather limitations;
- (j) flight and duty time limitations;
- (k) emergency operations;
- (l) accident/incident considerations;
- (m) personnel qualification and training;
- (n) record keeping;
- (o) a description of the maintenance control system;
- (p) security procedures (where applicable);
- (q) performance operating limitations;
- (r) use/protection of FDR/CVR records (where applicable); and
- (s) handling of *dangerous goods*; and
- (t) use of *head-up displays (HUD)* / *enhanced vision systems (EVS)*.

**APPENDIX B GENERAL AVIATION SPECIFIC APPROVALS**

*( Section 2, refer to 12.2.5 )*

**1. PURPOSE AND SCOPE**

1.1 Specific approvals shall have a standardized format which contains the minimum information required in the specific approval template.

*Note.— When the operations to be conducted require a specific approval, a copy of the document(s) needs to be carried on board .*

**2. SPECIFIC APPROVAL TEMPLATE**

<b>SPECIFIC APPROVAL</b>				
<b>ISSUING AUTHORITY and CONTACT DETAILS<sup>1</sup></b>				
Issuing Authority <sup>1</sup> _____				
Address _____				
Signature: _____ Date <sup>2</sup> : _____				
Telephone: _____ Fax: _____ Email: _____				
_____				
<b>OWNER/OPERATOR</b>				
Name <sup>3</sup> : _____ Address: _____				
_____				
Telephone: _____ Fax: _____ Email: _____				
_____				
Aircraft model <sup>4</sup> and registration marks:				
<b>SPECIFIC APPROVAL</b>	<b>YES</b>	<b>NO</b>	<b>DESCRIPTION<sup>5</sup></b>	<b>REMARKS</b>
Low visibility operations				
Approach and landing	<input type="checkbox"/>	<input type="checkbox"/>	CAT <sup>6</sup> : _____ RVR: _____ m DH: _____ ft	
Take-off	<input type="checkbox"/>	<input type="checkbox"/>	RVR <sup>7</sup> : _____ m	
Operational credit(s)	<input type="checkbox"/>	<input type="checkbox"/>		
RVSM				
AR navigation specifications for PBN operations				
Other <sup>10</sup>				

**Notes.—**

1. *Civil Aviation Authority name and contact details, including the telephone country code and email if available.*
2. *Issuance date of the specific approval (dd-mm-yyyy) and signature of the authority representative.*
3. *Owner or operator's name and address.*
4. *Insert the aeroplane make, model and series, or master series, if a series has been designated. The CAST/ICAO taxonomy is available at: [http:// www. Intlaviation standards.org/](http://www.Intlaviationstandards.org/).*
5. *List in this column the most permissive criteria for each approval or the approval type (with appropriate criteria).*
6. *Insert the applicable precision approach category (CAT II, IIIA, IIIB or IIIC). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category.*
7. *Insert the approved minimum take-off RVR in metres. One line per approval may be used if different approvals are granted.*
8. *List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.*
9. *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.*

*Other specific approvals or data can be entered here, using one line (or one multi-line block) per approval (e.g. specific approach operations approval, MNPS).*