

ROYAL GOVERNMENT OF BHUTAN



BHUTAN AIR NAVIGATION REGULATIONS (BANRs)

2021



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Bhutan Civil Aviation Authority
Royal Government of Bhutan



BCAA/Legal/04/2020-2021/ 265

25/02/2021

Foreword

In pursuance of the powers granted under section 27 of the Civil Aviation Act of Bhutan 2016, the Board shall approve Rules and Regulations for the effective implementation of the Act. The Board is authorised by the Act under section 28 to issue directives to the Head of the Authority to develop rules and regulations on the matters considered necessary. Therefore, the Chairman of the Board hereby authorises to carry out necessary revision and publish section 1 to 19 of Bhutan Air Navigation Regulations for the effective implementation of the Act.

This regulation shall come into effect from 25th February 2021.

Signature:.....

Chairperson of the Board
Bhutan Civil Aviation Authority

BHUTAN AIR NAVIGATION REGULATIONS

REVISION RECORD

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BHUTAN AIR NAVIGATION REGULATIONS

LIST OF EFFECTIVE PAGES

Section, Page	Date
Cover page	25/02/2021
Revision Record -Page-i	25/02/2021
List of Effective -Pages- ii	25/02/2021
Distribution Lists – Page - iii	25/02/2021
Table of Contents- Page-iv	25/02/2021
Section 1: Introduction and Definitions -Page 1-52	25/02/2021
Section 12 : Aircraft Nationality and Registration Marks- Page 1-2	25/02/2021
Section 3: Air Operations -Page: 1-9	25/02/2021
Section 4 : General Aviation -Page 1-12	25/02/2021
Section 5 : Transportation of Dangerous Goods by Air – Page 1-6	25/02/2021
Section 6 : Aircraft Accident and Incident Investigation- Page 1-1	25/02/2021
Section 7 : Air Traffic Management/ Air Navigation Services – Page 1-20	25/02/2021
Section 8 : Rules of Air – Page 1-27	25/02/2021
Section 9 : Documents and Records - Page 1-2	25/02/2021
Section 10 : Airworthiness of Aircraft – Page 1-2	25/02/2021
Section 11 : Personnel Licensing – Page 1- 1	25/02/2021
Section 12 : Fees and charges- Page 1-9	25/02/2021
Section 13 : Aerial Work- Page 1-1	25/02/2021
Section 14 : Aerodromes – Page 1-20, Section 14B : Heliports- Page 1-6	25/02/2021
Section 15 : Search and Rescue – Page 1-1	25/02/2021
Section 16 : Environment Protection – Page 1- 7	25/02/2021
Section 17:Safety Management System – Page 1-1	25/02/2021
Section 18: Aeronautical Charts- Page- 1-1	25/02/2021
Section 19 : Units of measurement- Page -1-1	25/02/2021

BHUTAN AIR NAVIGATION REGULATIONS

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BHUTAN AIR NAVIGATION REGULATIONS

TABLE OF CONTENTS

Foreword	
Revision Records	i
List of Effective Pages	ii
Distribution List	iii
Table of Contents	iv
SECTION 1 - Preliminary and Definitions	1-52
SECTION 2 - Aircraft Nationality and Registration Marks	1-2
SECTION 3 - Air Operations	1-9
SECTION 4 - General Aviation	1-12
SECTION 5 - Transport of Dangerous Goods by Air	1-6
SECTION 6 - Aircraft Accident and incident Investigation	1-1
SECTION 7 - Air Traffic management / Air Navigation Services	1-20
SECTION 8 - Rules of the Air	1-27
SECTION 9 - Documents and Records	1-2
SECTION 10 - Airworthiness of Aircraft	1-2
SECTION 11 - Personnel Licensing	1-1
SECTION 12 - Fees and Charges	1-9
SECTION 13 - Aerial Work	1-1
SECTION 14 – Aerodromes	1-20
SECTION 14B - Heliports	1-6
SECTION 15 - Search and Rescue	1-1
SECTION 16– Environmental Protection	1-7
SECTION 17 – Safety Management System	1-1
SECTION 18 – Aeronautical Charts	1-1
SECTION 19 – Units of Measurement	1-1

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 1 – Preliminary and Definitions

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

1. Preliminary

In exercise of the powers granted by Civil Aviation Act of Bhutan 2016 under Section 27, 28, 29 and 30 to develop and approve the Rules and Regulations by the Board for the effective implementation of the Act, the Bhutan Civil Aviation Authority, hereafter referred to as BCAA has revised and promulgated the Bhutan Air Navigation Regulations 2021. The Bhutan Air Navigation Regulations is developed in line with the ICAO SARPS in order to facilitate compliance of Rules and Regulations. The Bhutan Civil Aviation Requirements/Standards (BCARs), Manuals, Technical Guidance Materials are developed in accordance with the BANRs and ICAO requirements.

1.1 Title

This regulation shall be known as the Bhutan Air Navigation Regulations 2021, hereafter referred to as BANRs 2021.

1.2. Extent and commencement

- (a) These regulations shall apply to all persons operating or maintaining the following -
 - 1) Bhutan registered aircraft;
 - 2) Aircraft registered in another Contracting State that are operated by a person licensed by Bhutan, and must be maintained in accordance with the standards of the aircraft State of Registry, wherever that maintenance is performed;
 - 3) Aircraft of other Contracting States operating in Bhutan.
- (b) Aviation document holders and applies also to any person who engages in an operation governed by any Section of these regulations without the appropriate certificate, operations specification, or similar document required as part of the certification.
- (c) Regulations that addresses AOC holder shall apply only to operators certified by BCAA.

1.3 Rules of Construction

1.3.1 Wording

- (a) Throughout these regulations the following word usage applies:
 - 1) **Shall** indicate a mandatory requirement.
 - 2) The words “**no person may...**” or “**a person may not...**” mean that no person is required, authorised, or permitted to do an act described in a regulation.
 - 3) **May** indicates that discretion can be used when performing an act described in a regulation.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

- 4) **Will** indicates an action incumbent upon the BCAA.
- 5) **Includes** means “includes but is not limited to.”
- 6) **Approved** means the BCAA has reviewed the method, procedure, or policy in question and issued a formal written approval.
- 7) **Prescribed** means the BCAA has issued written policy or methodology which imposes either a mandatory requirement, if the written policy or methodology states “shall” or a discretionary requirement if the written policy or methodology states “may”.

1.4 Supersession

All existing regulations, notification and circulars in force concerning the subjects, which are covered by the BANRs 2021, shall be deemed to have been superseded from the effective date of this regulation.

1.5 Exemptions and Equivalent Safety Case

- a. The section 28 (1) of Civil Aviation Act of Bhutan empower Board to issue directives for developing rules and regulation for exemptions in the public interest and safety of the Aviation.
- b. Exemptions shall be dealt as per the Exemption Policy and Procedure Manual.
- c. No person may introduce procedures contrary to those prescribed in these regulations unless needed and an equivalent safety case has first been approved by the BCAA.

1.6 Authority for amendment

The authority for amendment and interpretation of any provision under BANRs 2021 shall vest with the BCAA and its interpretation shall be final and binding.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

1.6 Definitions

For the purpose of these regulations, the following definitions shall apply:

1. Accident

An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:

- a) A person is fatally or seriously injured as a result of:
 - i. Being in the aircraft, or
 - ii. Direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
 - iii. Direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or
- b) The aircraft sustains damage or structural failure which:
 - i. Adversely affects the structural strength, performance or flight characteristics of the aircraft, and
 - ii. Would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or
- c) The aircraft is missing or is completely inaccessible.

2. Accountable Manager

The manager who has the responsibility for ensuring all prescribed actions are performed to the standard required by the Bhutan Civil Aviation Authority (BCAA). When authorised by the Authority, the Accountable manager may delegate all or part of his or her authority in writing to another person within the organisation, who becomes the Accountable manager for the matters delegated.

3. Accredited representative

A person designated by a Bhutan, on the basis of his or her qualifications, for the purpose of participating in an investigation conducted by another State.

4. Acrobatic flight

Manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

5. Acts of unlawful interference

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

- a) Unlawful seizure of aircraft in flight,
- b) Unlawful seizure of aircraft on the ground,
- c) Hostage-taking on board aircraft or on aerodromes,
- d) Forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility,
- e) Introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes,
- f) communication of false information such 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.

6. ADS-C agreement

A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to using ADS-C in the provision of air traffic services).

7. Advisory airspace

An Airspace of defined dimensions, or designated route, within which air traffic advisory services are available.

8. Advisory route

A designated route along which air traffic advisory service is available.

9. Aerial work

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

10. Aerobatic flight

An intentional manoeuvre involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight.

11. 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.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

12. Aerodrome beacon

Aeronautical beacon used to indicate the location of an aerodrome from the air.

13. Aerodrome certificate.

A certificate issued by the BCAA, under applicable regulations for the operation of an aerodrome.

14. Aerodrome climatological summary

Concise summary of specified meteorological elements at an aerodrome, based on statistical data.

15. Aerodrome climatological table

Table providing statistical data on the observed occurrence of one or more meteorological elements at an aerodrome.

16. Aerodrome control service

Air traffic control service for aerodrome traffic.

17. Aerodrome control tower

A unit established to provide air traffic control service to aerodrome traffic.

18. Aerodrome elevation

The elevation of the highest point of the landing area.

19. Aerodrome facilities and equipment

Facilities and equipment, inside or outside the boundaries of an aerodrome, that are constructed or installed and maintained for the arrival, departure and surface movement of aircraft.

20. Aerodrome identification sign

A sign placed on an aerodrome to aid in identifying the aerodrome from the air.

21. Aerodrome manual

The manual that forms part of the application for an aerodrome certificate pursuant to these regulations, including any amendments thereto accepted/approved by the Bhutan Civil Aviation Authority in Bhutan.

22. Aerodrome meteorological office

An office, located at an aerodrome, designated to provide meteorological service for international air navigation.

23. Aerodrome operating minima

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

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 precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation;
- c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and
- d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions.

24. Aerodrome operator

In relation to a certificated aerodrome, means the aerodrome certificate holder.

25. Aerodrome reference point

The designated geographical location of an aerodrome.

26. Aerodrome traffic

All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

27. Aerodrome traffic density

- a) Light. Where the number of movements in the mean busy hour is not greater than 15 per runway or typically less than 20 total aerodrome movements.
- b) Medium. Where the number of movements in the mean busy hour is of the order of 16 to 25 per runway or typically between 20 to 35 total aerodrome movements.
- c) Heavy. Where the number of movements in the mean busy hour is of the order of 26 or more per runway or typically more than 35 total aerodrome movements.

28. Aerodrome traffic zone

An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

29. Aeronautical beacon

An aeronautical ground light visible at all azimuths, either continuously or intermittently, to designate a particular point on the surface of the earth.

30. Aeronautical experience

Pilot time obtained in an aircraft, approved flight simulator, or approved flight-training device for meeting the training and flight time requirements of these regulations.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

31. Aeronautical ground light

Any light specially provided as an aid to air navigation, other than a light displayed on an aircraft.

32. Aeronautical Information Publication (AIP)

A publication issued by or with the Bhutan Civil Aviation Authority of Bhutan, and containing aeronautical information of a lasting character essential to air navigation.

33. Aeronautical fixed service (AFS)

A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services.

34. Aeronautical fixed telecommunication network (AFTN)

A worldwide system of aeronautical fixed circuits provided, as part of the aeronautical fixed service, for the exchange of messages and/or digital data between aeronautical fixed stations having the same or compatible communications characteristics.

35. Aeronautical meteorological station

A station designated to make observations and meteorological reports for use in international air navigation.

36. Aeronautical mobile service

A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.

37. Aeronautical product

Any aircraft, aircraft engine, propeller, or subassembly, appliance, material, part, or component to be installed thereon.

38. Aeronautical station

A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.

39. Aeronautical telecommunication station

A station in the aeronautical telecommunication service.

40. 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.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

41. Aeroplane reference field length

The minimum field length required for take-off at maximum certificated take-off mass, sea level, standard atmospheric conditions, still air and zero runway slope, as shown in the appropriate aeroplane flight manual prescribed by the certificating authority or equivalent data from the aeroplane manufacturer. Field length means balanced field length for aeroplanes, if applicable, or take-off distance in other cases.

42. Agricultural aircraft operation

The operation of an aircraft for the purpose of:

- (a) Dispensing any economic poison;
- (b) Dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control; or
- (c) Engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.

43. Airborne

Entirely supported by aerodynamic forces.

44. Airborne collision avoidance system (ACAS)

An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

45. 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.

46. Aircraft avionics

A term designating any electronic device - including its electrical part - for use in an aircraft, including radio, automatic flight control and instrument systems.

47. Aircraft category

Classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon.

48. Aircraft classification number (ACN)

A number expressing the relative effect of an aircraft on a pavement for a specified standard sub grade category.

49. Aircraft component

Any component part of an aircraft up to and including a complete power plant and/or any operational/emergency equipment.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

50. Aircraft observation

The evaluation of one or more meteorological elements made from an aircraft in flight.

51. Aircraft security check

An inspection of the interior of an aircraft to which passengers may have had access and an inspection of the hold for the purposes of discovering suspicious objects, weapons, explosives or other dangerous devices, articles and substances.

52. Aircraft security search

A thorough inspection of the interior and exterior of the aircraft for the purpose of discovering suspicious objects, weapons, explosives or other dangerous devices, articles or substances.

53. Aircraft stand.

A designated area on an apron intended to be used for parking an aircraft.

54. Aircraft Technical Log.

A document attached to an aircraft for recording defects and malfunctions discovered during operation and for recording details of all maintenance carried out whilst the aircraft is operating between scheduled visits to the base maintenance facility. It also contains operating information relevant to flight safety and maintenance data that the operating crew need to know.

55. Aircraft - type of

All aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics.

56. Airframe

The fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors but excluding propellers and rotating airfoils of a power plant), and landing gear of an aircraft and their accessories and controls.

57. Air-ground control radio station

An aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area.

58. AIRMET information

Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

59. Air operator certificate (AOC)

A certificate authorizing an operator to carry out specified commercial air transport operations.

60. Aircraft operator

means the natural or juridical person operating and directing an aircraft, and putting it to use either personally or through his employees, agents or subsidiaries, and its crew members shall be under his instructions and commands, whether he is an owner, lessee or in possession thereof.

61. Airport operator:

means the party responsible to operate the airport and holds an Airport Operating Certificate.

62. Air-report

A report from an aircraft in flight prepared in conformity with requirements for position, and operational and/or meteorological reporting.

63. Airship

A power-driven lighter-than-air aircraft.

64. Air-taxiing

Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).

65. Air taxiway

A defined path on the surface established for the air taxiing of helicopters.

66. Air traffic

All aircraft in flight or operating on the manoeuvring area of an aerodrome.

67. Air traffic advisory service

A service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans.

68. Air Traffic Control

A service that promotes the safe, orderly, and expeditious flow of air traffic at aerodromes and during the approach, departure, and en route environments.

69. Air traffic control clearance.

Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

70. Air Traffic Control (ATC) facility

A building holding the persons and equipment responsible for providing ATC services (e.g., airport tower, approach control, centre).

71. Air traffic control service

A service provided for the purpose of:

- a) Preventing collisions:
 - 1) Between aircraft, and
 - 2) On the manoeuvring area between aircraft and obstructions, and
- b) Expediting and maintaining an orderly flow of air traffic.

72. Air traffic control unit

A generic term meaning variously, area control centre, approach control unit or aerodrome control tower.

73. Air traffic service

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).

74. Air traffic services airspace

Airspaces of defined dimensions alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.

75. Air traffic services reporting office.

A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

76. Air traffic services unit

A generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

77. Air transit route

A defined path on the surface established for the air transiting of helicopters.

78. Airway

A control area or portion thereof established in the form of a corridor.

79. Airworthiness data

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

Any information necessary to ensure that an aircraft or aircraft component can be maintained in a condition such that airworthiness of the aircraft, or serviceability of operational and emergency equipment, as appropriate, is assured.

80. Airworthiness release

A certification signed by a licensed mechanic authorised by the AOC holder indicating that work was performed in accordance with the AOC holder's maintenance manual, was inspected by a licensed mechanic, and the aircraft was found satisfactory for safe operation.

81. Alerting service

A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

82. 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. Alternate aerodromes include the following:

83. Take-off alternate

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

84. En-route alternate

An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en route.

85. ETOPS en-route alternate

A suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shut-down or other abnormal or emergency condition while en route in an ETOPS operation.

86. Destination alternate

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

87. Altitude

The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

88. Anticipated operating conditions

Those conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft taking into account the operations for which the aircraft is made eligible, the conditions so considered being relative to the meteorological state of the atmosphere, to the configuration of terrain, to

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

the functioning of the aircraft, to the efficiency of personnel and to all the factors affecting safety in flight. Anticipated operating conditions do not include:

- a) Those extremes which can be effectively avoided by means of operating procedures; and
- b) Those extremes which occur so infrequently that to require the Standards to be met in such extremes would give a higher level of airworthiness than experience has shown to be necessary and practical.

89. Appliance

Any instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, power plant, or propeller.

90. Approach control service

Air traffic control service for arriving or departing controlled flights.

91. Approach control unit

A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

92. Appropriate airworthiness requirements

The comprehensive and detailed airworthiness codes established, adopted or accepted by a BCAA of Bhutan, for the class of aircraft, engine or propeller under consideration.

93. Appropriate ATS authority.

The relevant authority designated by the BCAA responsible for providing air traffic services in the airspace concerned.

94. Approved by the Authority

Accepted by BCAA, as suitable for a particular purpose.

95. Approved continuous maintenance program.

A maintenance program approved by the BCAA (State of Registry).

96. Approved maintenance organisation

An organization approved by BCAA, in accordance with applicable requirements to perform maintenance of aircraft or parts thereof and operating under supervision approved by that State.

97. Approved standard

A manufacturing, design, maintenance, or quality standard approved by the BCAA.

98. Approved training

Training carried out under special curriculum and supervision approved by the BCAA.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

99. Apron

A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

100. Apron management service.

A service provided to regulate the activities and the movement of aircraft and vehicles on an apron.

101. Area control centre

A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

102. Area control service

Air traffic control service for controlled flights in control areas.

103. Atmosphere, International Standard

The atmosphere defined in ICAO Document 7488/2.

104. ATS route

A specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services.

105. Authority

The Bhutan Civil Aviation Authority established under the Civil Aviation Act of Bhutan 2016.

106. Automatic dependent surveillance (ADS)

A surveillance technique in which aircraft automatically provide, via a data link, data derived from on-board navigation and position-fixing systems, including aircraft identification, four-dimensional position and additional data as appropriate.

107. Automatic dependent surveillance — broadcast (ADS-B)

A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

108. Automatic dependent surveillance — contract (ADS-C)

A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

109. Autorotation

A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

110. Auxiliary Power Unit (APU)

Any gas turbine-powered unit delivering rotating shaft power, compressor air, or both which is not intended for direct propulsion of an aircraft.

111. BCAA

The Bhutan Civil Aviation Authority established under the Civil Aviation Act of Bhutan 2016.

112. Balloon

A non-power-driven lighter-than-air aircraft

113. Banner

An advertising medium supported by a temporary framework attached externally to the aircraft and towed behind the aircraft.

114. Barrette

Three or more aeronautical ground lights closely spaced in a transverse line so that from a distance they appear as a short bar of light.

115. Briefing

Oral commentary on existing and/or expected meteorological conditions.

116. Cabin Crew Member

A crew member, other than a Flight Crew Member, who performs in the interests of safety of passengers, duties assigned by the operator or the commander of the aeroplane.

117. Calibrated airspeed

Indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.

118. Calibration

A set of operations, performed in accordance with a definite documented procedure, that compares the measurement performed by a measurement device or working standard for the purpose of detecting and reporting or eliminating by adjustment errors in the measurement device, working standard, or aeronautical product tested.

119. Cargo aircraft

Any aircraft carrying goods or property but not passengers. In this context the following are not considered to be passengers:

- a) A crewmember.
- b) An operator's employee permitted by, and carried in accordance with, the instructions contained in the Operations Manual.
- c) An authorised representative of an Authority.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

- d) A person with duties in respect of a particular shipment on board.

120. Category II (CAT II) operations

With respect to the operation of aircraft, means a straight-in ILS approach to the runway of an airport under a Category II ILS instrument approach procedure issued by the Authority or other appropriate authority.

121. Category III (CAT III) operations

With respect to the operation of aircraft, means an ILS approach to, and landing on, the runway of an airport using a Category III ILS instrument approach procedure issued by the Authority or other appropriate authority.

122. Category A

With respect to helicopters, means a multi-engine helicopter designed with engine and system isolation features and capable of operations using take-off and landing data scheduled under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off.

123. Category B

With respect to helicopters, means a single-engine or multi-engine helicopter which does not meet Category A standards. Category B helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and a forced landing is assumed.

124. Causes

Actions, omissions, events, conditions, or a combination thereof, which led to the accident or incident.

125. Ceiling

The height above the ground or water of the base of the lowest layer of cloud below 6 000 metres (20 000 feet) covering more than half the sky.

126. Certificate

Any approval, license or other document issued as the result of certification.

127. Certification

Any form of recognition that a product, part or appliance, organization or person complies with the applicable requirements, as well as the issuance of the relevant certificate attesting such compliance.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

128. Certified aerodrome

An aerodrome whose operator has been granted an aerodrome certificate.

129. Certify as airworthy

The required maintenance record entry completed by a properly authorised person after the modification, overhaul, repair, or the inspection of an aircraft, or aeronautical product required by the BCAA.

130. Certifying staff

Personnel responsible for the release of an aircraft or a component after maintenance.

131. Changeover point

The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omni directional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft.

132. Civil Aviation Act of Bhutan

The Civil Aviation Act of Bhutan 2016.

133. Chicago Convention

The Convention on International Civil Aviation and its Annexes, signed in Chicago on 7 December 1944.

134. Circling

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

135. Civil aircraft

Any aircraft on the civil register of a State, other than those which that State treats as being in the service of the State, either permanently or temporarily.

136. Clearance limit

The point to which an aircraft is granted an air traffic control clearance.

137. Clearway

A defined rectangular area on the ground or water under the control of the Authority of the State, in Bhutan the BCAA, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height.

138. Cloud base

The height of the base of the lowest observed, or forecast, cloud element in the vicinity of an aerodrome, or heliport, or within a specified area of operations. The height of the cloud base is normally measured above aerodrome elevation, but in the case of offshore operations cloud base is measured above mean sea level.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

139. Cloud of operational significance

A cloud with the height of cloud base below 1500 m (5000 ft) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height.

140. Commander

As used with respect to aircraft operations, is defined in BCAR-OPS1, and is comparable to the definition of pilot-in-command.

141. Commercial Air Transportation

The transportation by air of passengers, cargo or mail for remuneration or hire.

142. Committal Point (CP)

The committal point is defined as the point in the approach at which the pilot flying (PF) decides that, in the event of a power unit failure being recognised, the safest option is to continue to the deck.

143. Component

Any engine, propeller, part or appliance.

144. Configuration (as applied to the aeroplane)

A particular combination of the positions of the moveable elements, such as wing flaps and landing gear, etc., that affects the aerodynamic characteristics of the aeroplane.

145. Congested area

In relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes.

146. Consignment

One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address.

147. Consultation

Discussion with a meteorologist or another qualified person of existing and/or expected meteorological conditions relating to flight operations; a discussion includes answers to questions.

148. Continuing airworthiness

All of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

149. Continuing oversight

The tasks to be conducted to verify that the conditions under which a certificate has been granted continue to be fulfilled at any time during its period of validity, as well as the taking of any safeguard measure.

150. Contracting States

All States that are signatories to the Convention on International Civil Aviation (Chicago Convention).

151. Control area

A controlled airspace extending upwards from a specified limit above the earth.

152. Controlled aerodrome

An aerodrome at which air traffic control service is provided to aerodrome traffic.

153. Controlled airspace

An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.

154. Controlled flight

Any flight which is subject to an air traffic control clearance.

155. Controller-pilot data link communications (CPDLC)

A means of communication between controller and pilot, using data link for ATC communications.

156. Control zone

A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

157. Co-pilot

A pilot serving in any piloting capacity other than as pilot-in-command or commander, but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction for a licence or rating.

158. Course

A program of instruction to obtain an airman license, rating, qualification, authorisation, or currency.

159. Courseware

Instructional material developed for each course or curriculum, including lesson plans, flight event descriptions, computer software programs, audio-visual programs, workbooks, and handouts.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

160. Crew member

A person assigned by an operator to duty on an aircraft during a flight duty period.

161. Crew Resource Management

A program designed to improve the safety of flight operations by optimising the safe, efficient, and effective use of human resources, hardware, and information through improved crew communication and co-ordination.

162. Critical power-unit(s)

The power-unit(s) failure of which gives the most adverse effect on the aircraft characteristics relative to the case under consideration.

163. Cross-country time

That time a pilot spends in flight in an aircraft which includes a landing at a point other than the point of departure and, for the purpose of meeting the cross-country time requirements for a private pilot license (except with a rotorcraft rating), commercial pilot license, or an instrument rating, includes a landing at an aerodrome which must be a straight-line distance of more than 50 nautical miles from the original point of departure.

164. Cruise climb.

An aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.

165. Cruising level

A level maintained during a significant portion of a flight.

166. Current flight plan

The flight plan, including changes, if any, brought about by subsequent clearances.

167. Cyclic redundancy check (CRC)

A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

168. Danger area

An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

169. 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.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

170. Dangerous goods accident

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

171. Dangerous goods incident

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

172. Dangerous goods transport document.

A document specified by the ICAO Technical Instructions for the Safe Transportation of Dangerous Goods by Air. It is completed by the person who offers dangerous goods for air transport and contains information about those dangerous goods. The document bears a signed declaration indicating that the dangerous goods are fully and accurately described by their proper shipping names and UN numbers (if assigned) and that they are correctly classified, packed, marked, labelled and in a proper condition for transport.

173. Data link communications.

A form of communication intended for the exchange of messages via a data link.

174. Decision height

With respect to the operation of aircraft, means the wheel height above the runway elevation by which a go-around must be initiated unless adequate visual reference has been established and the aircraft position and approach path have been visually assessed as satisfactory to continue the approach and landing in safety.

175. Declared distances

- a) Take-off run available (TORA). The length of runway declared available and suitable for the ground run of an aeroplane taking off.
- b) Take-off distance available (TODA). The length of the take-off run available plus the length of the clearway, if provided.
- c) Accelerate-stop distance available (ASDA). The length of the take-off run available plus the length of the stopway, if provided.
- d) Landing distance available (LDA). The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

176. Declared distances — heliports

- a) Take-off distance available (TODAH). The length of the final approach and take-off area plus the length of helicopter clearway (if provided) declared available and suitable for helicopters to complete the take-off.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

- b) Rejected take-off distance available (RTODAH). The length of the final approach and take-off area declared available and suitable for performance class 1 helicopters to complete a rejected take-off.
- c) Landing distance available (LDAH). The length of the final approach and take-off area plus any additional area declared available and suitable for helicopters to complete the landing manoeuvre from a defined height.

177. Defined point after take-off (DPATO)

The point, within the take-off and initial climb phase, before which the helicopter's ability to continue the flight safely, with the critical power unit inoperative, is not assured and a forced landing may be required.

178. Defined point before landing (DPBL)

The point within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with the critical power unit inoperative, is not assured and a forced landing may be required.

179. De-icing/anti-icing facility

A facility where frost, ice or snow is removed (de-icing) from the aeroplane to provide clean surfaces, and/or where clean surfaces of the aeroplane receive protection (anti-icing) against the formation of frost or ice and accumulation of snow or slush for a limited period of time.

180. De-icing/anti-icing pad

An area comprising an inner area for the parking of an aeroplane to receive de-icing/anti-icing treatment and an outer area for the manoeuvring of two or more mobile de-icing/anti-icing equipment.

181. Dependent parallel approaches

Simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway centre lines are prescribed.

182. Design landing mass

The maximum mass of the aircraft at which, for structural design purposes, it is assumed that it will be planned to land.

183. Design take-off mass

The maximum mass at which the aircraft, for structural design purposes, is assumed to be planned to be at the start of the take-off run.

184. Design taxiing mass

The maximum mass of the aircraft at which structural provision is made for load liable to occur during use of the aircraft on the ground prior to the start of take-off.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

185. Directly in Charge

A person assigned to a position in which he or she is responsible for the work of a shop or station that performed maintenance, preventive maintenance, or modifications, or other functions affecting aircraft airworthiness.

186. Discrete source damage

Structural damage of the aeroplane that is likely to result from: impact with a bird, uncontained fan blade failure, uncontained engine failure, uncontained high-energy rotating machinery failure or similar causes.

187. Displaced threshold

A threshold not located at the extremity of a runway.

188. Distance DR

DR is the horizontal distance that the helicopter has travelled from the end of the take-off distance available.

189. Dry Operating Mass

The total mass of an aircraft ready for a specific type of operation excluding all usable fuel and traffic load. This mass includes items such as:

- (1) Crew and crew baggage;
- (2) Catering and removable passenger service equipment; and
- (3) Potable water and lavatory chemicals.

190. Dual instruction time

Flight time during which a person is receiving flight instruction from a properly authorised pilot on board the aircraft.

191. Effective intensity

The effective intensity of a flashing light is equal to the intensity of a fixed light of the same colour which will produce the same visual range under identical conditions of observation.

192. Elevated heliport

A heliport located on a raised structure on land.

193. Elevation

The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.

194. Ellipsoid height (Geodetic height)

The height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

195. 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 (if applicable).

196. Emission

has the same meaning as "Emission" as defined in National Environment Protection Act 2007,- the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in the project into the air, water or land.

197. Environment

has the same meaning as "Environment" as defined in National Environment Protection Act 2007, - the physical factors of the surroundings of human beings including the earth, soil, water, atmosphere, climate, sound, odours, tastes and the biological factors of animals and plants of every description including the complex web of interrelationships between the abiotic and biotic components which sustain life on earth.

198. Environmental harm

has the same meaning as "Environment harm" as defined in National Environment Protection Act 2007,-means direct or indirect:

- a. harm to the environment involving removal or destruction of, or damage to –
 - i. native vegetation or;
 - ii. the habitat of native vegetation or;
 - iii. indigenous aquatic or terrestrial animals;
- b. alteration of the environment to its detriment or degradation or potential detriment or degradation
- c. alteration of the environment to the detriment or potential detriment of an environmental value; or
- d. alteration of the environmental of a prescribed kind.

199. Environmental assessment

has the same meaning as "Environment assessment" as defined in National Environment Protection Act 2007,- means all procedures required under Bhutanese law to identify means to ensure that the activities of a project are managed in an environmentally sound and sustainable way.

200. Environmental impact assessment report

has the same meaning as "Environment impact assessment report" as defined in National Environment Protection Act 2007.- means a written analysis of the predicted environmental developmental activity and containing an environmental cost-benefit analysis

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

201. Equivalent system of maintenance

An AOC holder may conduct maintenance activities through an arrangement with an AMO or may conduct its own maintenance, preventive maintenance, or alterations, so long as the AOC holder's maintenance system is approved by the authority of the State, in Bhutan the DCA, and is equivalent to that of an AMO, except that the approval for return to service of an aircraft/aeronautical product shall be made by an appropriately licensed aviation maintenance technician or aviation repair specialists in accordance with Part 1C: - Certifying Staff Maintenance, as appropriate.

202. Estimated off-block time

The estimated time at which the aircraft will commence movement associated with departure.

203. Estimated time of arrival

For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

204. Evaluator

A person employed by a certified Aviation Training Organisation who performs tests for licensing, added ratings, authorisations, and proficiency checks that are authorised by the certificate holder's training specification, and who is authorised by the Authority to administer such checks and tests.

205. Examiner

Any person authorised by the Authority to conduct a pilot proficiency test, a practical test for an airman license or rating, or a knowledge test under these regulations.

206. Expected approach time

The time at which ATC expects that an arriving aircraft, following a delay, will leave holding fix to complete its approach for a landing.

207. Exposure time

The actual period during which the performance of the helicopter with the critical power unit inoperative in still air does not guarantee a safe forced landing or the safe continuation of the flight.

208. Extended range operation

Any flight by an aeroplane with two turbine power-units where the flight time at the one power unit inoperative cruise speed (in ISA and still air conditions), from a point on the route to an adequate alternate aerodrome, is greater than the threshold time approved by the BCAA.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

209. External load

A load that is carried, towed or extends, outside the aircraft fuselage..

210. Facility

A physical plant, including land, buildings, and equipment, which provide the means for the performance of maintenance, preventive maintenance, or modifications of any article approved by the BCAA.

211. Filed flight plan

The flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.

212. Final approach and take-off area (FATO)

A defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take-off area available.

213. Fixed light

A light having constant luminous intensity when observed from a fixed point.

214. Flight crew member.

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

215. Flight documentation

Written or printed documents, including charts or forms, containing meteorological information for a flight.

216. Flight information centre

A unit established to provide flight information service and alerting service.

217. Flight information region

An Airspace of defined dimensions within which flight information service and alerting service are provided.

218. Flight information service

A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

219. Flight level

A surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

220. Flight plan

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

221. Flight simulator

A device that:

- a) Is a full-size aircraft cockpit replica of a specific type of aircraft, or make, model, and series of aircraft;
- b) Includes the hardware and software necessary to represent the aircraft in ground operations and flight operations;
- c) Uses a force cueing system that provides cues at least equivalent to those cues provided by a 3 degree freedom of motion system;
- d) Uses a visual system that provides at least a 45 degree horizontal field of view and a 30 degree vertical field of view simultaneously for each pilot; and
- e) Has been evaluated, qualified, and approved by the BCAA.

222. 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.

223. Flight time - helicopters

The total time from the moment a helicopter's rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

224. Flight training device

A device that:

- a) Is a full-size replica of the instruments, equipment, panels, and controls of an aircraft, or set of aircraft, open or in an enclosed cockpit, including the hardware and software for the systems installed, that is necessary to simulate the aircraft in ground and flight operations;
- b) Need not have a force (motion) cueing or visual system; and
- c) Has been evaluated, qualified, and approved by the BCAA.

225. Flight training

Training, other than ground training, received from an authorised instructor in flight in an aircraft.

226. Flight visibility

The visibility forward from the cockpit of an aircraft in flight.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

227. Forecast.

A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.

228. Frangible object.

An object of low mass designed to break, distort or yield on impact so as to present the minimum hazard to aircraft.

229. GAMET area forecast

An area forecast in abbreviated plain language for low-level flights for a flight information region or sub-area thereof, prepared by the meteorological office designated by the meteorological authority concerned and exchanged with meteorological offices in adjacent flight information regions, as agreed between the meteorological authorities concerned.

230. Geodetic datum

A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.

231. Geoid

The equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents.

232. Geoid undulation

The distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.

233. Glider

A non-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.

234. Grid point data in digital form

Computer processed meteorological data for a set of regularly spaced points on a chart, for transmission from a meteorological computer to another computer in a code form suitable for automated use.

235. Ground visibility

The visibility at an aerodrome as reported by an accredited observer or by automatic systems.

236. Gyroplane

A heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors which rotate freely on substantially vertical axes.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

237. Handling agent

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

238. Hazard beacon.

An aeronautical beacon used to designate a danger to air navigation.

239. Head of the Authority(HoA)

The Head of the Authority means the Head of the Bhutan Civil Aviation Authority (BCAA).

240. Heading

The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

241. Heavier-than-air aircraft

Any aircraft deriving its lift in flight chiefly from aerodynamic forces.

242. Height

The vertical distance of a level, a point or an object considered as a point, measured from a specified datum.

243. Helicopter

A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power driven rotors on substantially vertical axes.

244. Helicopter clearway.

A defined area on the ground or water under the control of the authority of the State, in Bhutan the BCAA, selected and/or prepared as a suitable area over which a performance class 1 helicopter may accelerate and achieve a specific height.

245. Helicopter ground taxiway

A ground taxiway for use by helicopters only.

246. Helicopter stand

An aircraft stand which provides for parking a helicopter and, where air taxiing operations are contemplated, the helicopter touchdown and lift-off.

247. Helideck

A heliport located on a floating or fixed off-shore structure.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

248. Heliport

An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

249. Holding bay.

A defined area where aircraft can be held, or bypassed, to facilitate efficient surface movement of aircraft.

250. Holdover time.

The estimated time de-icing/anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft. Holdover time begins when the final application of de-icing or anti-icing fluid commences and expires when the de-icing or anti-icing fluid applied to the aircraft loses its effectiveness.

251. Human Factors principles.

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

252. Human performance.

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

253. ICAO.

The International Civil Aviation Organization.

254. Identification beacon.

An aeronautical beacon emitting a coded signal by means of which a particular point of reference can be identified.

255. ID number.

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

256. IFR.

The symbol used to designate the instrument flight rules.

257. ILS.

Instrument landing system.

258. IFR conditions.

Weather conditions below the minimum for flight under visual flight rules.

259. IFR flight.

A flight conducted in accordance with the instrument flight rules.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

260. IMC.

The symbol used to designate instrument meteorological conditions.

261. Incident.

An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

262. Independent parallel approaches.

Simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway centre lines are not prescribed.

263. Independent parallel departures.

Simultaneous departures from parallel or near-parallel instrument runways.

264. Inspection.

The examination of an aircraft or aeronautical product to establish conformity with a standard approved by the BCAA.

265. Instrument approach procedure.

A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

Non-precision approach (NPA) procedure.

An instrument approach procedure which utilizes lateral guidance but does not utilize vertical guidance.

Approach procedure with vertical guidance (APV).

An instrument approach procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

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

266. Instrument meteorological conditions.

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

267. Instrument runway.

One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

a) **Non-precision approach runway.**

An instrument runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach.

b) **Precision approach runway, category I.**

An instrument runway served by ILS and/or MLS and visual aids intended for operations with a decision height not lower than 60 m (200 ft) and either a visibility not less than 800 m or a runway visual range not less than 550 m.

c) **Precision approach runway, category II.**

An instrument runway served by ILS and/or MLS and visual aids intended for operations with a decision height lower than 60 m (200 ft) but not lower than 30 m (100 ft) and a runway visual range not less than 350 m.

d) **Precision approach runway, category III.**

An instrument runway served by ILS and/or MLS to and along the surface of the runway and:

A — intended for operations with a decision height lower than 30 m (100 ft), or no decision height and a runway visual range not less than 200 m.

B — intended for operations with a decision height lower than 15 m (50 ft), or no decision height and a runway visual range less than 200 m but not less than 50 m.

C — intended for operations with no decision height and no runway visual range limitations.

268. Instrument time.

Time in which cockpit instruments are used as the sole means for navigation and control.

269. Integrity (aeronautical data).

A degree of assurance that an aeronautical data and its value has not been lost nor altered since the data origination or authorized amendment.

270. Interchange agreement.

A leasing agreement which permits an air carrier to dry lease and take or relinquish operational control of an aircraft at an aerodrome.

271. Intermediate holding position.

A designated position intended for traffic control at which taxiing aircraft and vehicles shall stop and hold until further cleared to proceed, when so instructed by the aerodrome control tower.

272. International airport.

Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

273. International airways volcano watch (IAVW).

International arrangements for monitoring and providing warnings to aircraft of volcanic ash in the atmosphere.

274. Investigation.

A process conducted for the purpose of accident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and, when appropriate, the making of safety recommendations.

275. Investigator-in-charge.

A person charged, on the basis of his or her qualifications, with the responsibility for the organization, conduct and control of an investigation.

276. Knowledge test.

A test on the aeronautical knowledge areas required for an airman license or rating that can be administered in written form or by a computer.

277. Landing area.

That part of a movement area intended for the landing or take-off of aircraft.

278. Landing decision point (LDP).

The point used in determining landing performance from which, a power unit failure having been recognised at this point, the landing may be safely continued or a baulked landing initiated.

279. Landing direction indicator.

A device to indicate visually the direction currently designated for landing and for take-off.

280. Landing distance required.

The horizontal distance required to land and come to a full stop from a point 10.7 m (35 ft) above the landing surface.

281. Landing surface.

That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft landing in a particular direction.

282. Large aircraft.

An aircraft, classified as an aeroplane with a maximum take-off mass of more than 5 700 kg, or a multi-engined helicopter.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

283. Laser-beam critical flight zone (LCFZ).

Airspace in the proximity of an aerodrome but beyond the LFFZ where the irradiance is restricted to a level unlikely to cause glare effects.

284. Laser-beam free flight zone (LFFZ).

Airspace in the immediate proximity to the aerodrome where the irradiance is restricted to a level unlikely to cause any visual disruption.

285. Laser-beam sensitive flight zone (LSFZ).

Airspace outside, and not necessarily contiguous with, the LFFZ and LCFZ where the irradiance is restricted to a level unlikely to cause flash-blindness or after-image effects.

286. Level.

A generic term relating to the vertical position of an aircraft in flight and meaning variously height, altitude or flight level.

287. Lighter-than-air aircraft.

Any aircraft supported chiefly by its buoyancy in the air.

288. Lighting system reliability.

The probability that the complete installation operates within the specified tolerances and that the system is operationally usable.

289. Load factor.

The ratio of a specified load to the weight of the aircraft, the former being expressed in terms of aerodynamic forces, inertia forces, or ground reactions.

290. Low Visibility Procedures (LVP).

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

291. Low Visibility Take-Off (LVTO).

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

292. Mach number.

The ratio of true air speed to the speed of sound.

293. 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 of an aircraft or component, with the exception of pre-flight inspection.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

294. Maintenance Control Manual.

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

295. 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.

296. Manoeuvring area.

That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

297. Manufactured.

The date on which the inspection records show that an aircraft is first in a condition for safe flight.

298. Marker.

An object displayed above ground level in order to indicate an obstacle or delineate a boundary.

299. Marking.

A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information.

300. Master minimum equipment list (MMEL).

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

301. Maximum Approved Passenger Seating Configuration (MAPSC).

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

302. Maximum Certificated Passenger Seating Capacity (MCPSC).

The maximum number of passenger seats, excluding crew seats, approved during type certification of the aircraft, and specified in the Type Certificate Data Sheet.

303. Maximum mass.

Maximum certificated take-off mass.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

304. Maximum Structural Landing Mass.

The maximum permissible total aeroplane mass upon landing under normal circumstances.

305. Maximum Structural Take Off Mass.

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

306. Maximum Zero Fuel Mass.

The maximum permissible mass of an aeroplane with no usable fuel. The mass of the fuel contained in particular tanks must be included in the zero fuel mass when it is explicitly mentioned in the Aeroplane Flight Manual limitations.

307. Measurement device.

A calibrated calibrator, standard, equipment and test equipment that is intended to be used to test, measure, or calibrate other measurement devices. It is not to be used to test, measure, or calibrate an aeronautical product.

308. Meteorological authority.

The authority providing or arranging for the provision of meteorological service for international air navigation on behalf of a Contracting State.

309. Meteorological information.

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

310. Meteorological office.

An office designated to provide meteorological service for international air navigation.

311. Microlight.

An aeroplane having no more than two seats, V_{SO} not exceeding 35 knots (65 KM/h) CAS, and a maximum take-off mass of no more than:

- 300 kg for a landplane, single seater, or
- 450 kg for a landplane, two-seater, or
- 330 kg for an amphibian or floatplane, single seater, or
- 495 kg for an amphibian or floatplane, two-seater, provided that a microlight capable of operating as both a floatplane and a landplane falls below both MTOW limits, as appropriate.

312. Minimum equipment list (MEL).

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

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

313. Minimum sector altitude.

The lowest altitude which may be used which will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 NM) radius centred on a radio aid to navigation.

314. Movement area.

That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

315. Near-parallel runways.

Non-intersecting runways whose extended centre lines have an angle of convergence/divergence of 15 degrees or less.

316. 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. 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.

317. Non-instrument runway.

A runway intended for the operation of aircraft using visual approach procedures.

318. Normal flight zone (NFZ).

Airspace not defined as LFFZ, LCFZ or LSFZ but which must be protected from laser radiation capable of causing biological damage to the eye.

319. Obstacle.

All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight.

320. Obstacle free zone (OFZ).

The airspace above the inner approach surface, inner transitional surfaces, and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes.

321. Obstacle limitation surfaces.

A series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles in order to permit the intended aeroplane operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome.

322. Operational control.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

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.

323. 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.

324. Operational planning.

The planning of flight operations by an operator.

325. Operations manual.

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

326. Operator.

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

327. Organisation.

A natural person, a legal person or part of a legal person. Such an organisation may be established at more than one location whether or not within the territory of Bhutan.

328. Ornithopter.

A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on planes to which a flapping motion is imparted.

329. Orthometric height.

Height of a point related to the geoid, generally presented as an MSL elevation.

330. Parts and appliances.

Any instrument, equipment, mechanism, part, apparatus, appurtenance or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight and is installed in or attached to the aircraft. It includes parts of an airframe, engine or propeller;

331. Passenger aircraft.

An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo.

332. Passenger classification.

- (1) Adults, male and female, are defined as persons of an age of 12 years and above.
- (2) Children are defined as persons of an age of two years and above but who are less than 12 years of age.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

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

333. Pavement classification number (PCN).

A number expressing the bearing strength of a pavement for unrestricted operations.

334. Performance Class 1 helicopter.

A helicopter with performance such that, in case of engine failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area.

335. Performance Class 2 helicopter.

A helicopter with performance such that, in case of engine failure, it is able to safely continue the flight, except when the failure occurs prior to a defined point after take-off or after a defined point before landing, in which cases a forced landing may be required.

336. Performance Class 3 helicopter.

A helicopter with performance such that, in case of engine failure at any point in the flight profile, a forced landing must be performed.

337. Pilot flying (PF).

The pilot, who for the time being, is in charge of the controls of an aircraft.

338. Pilot-in-command.

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

339. Pollution

has the same meaning as 'Pollution' defined in "National Environment Protection Act 2007"- any direct or indirect alternation of the physical, thermal, chemical, biological, or radioactive properties of any part of the environment by the discharge, emission, or the deposit of wastes so as to effect any beneficial use adversely or to cause a condition which is hazardous or potentially hazardous to public health, safety, or welfare, or to animals, birds, wildlife, aquatic life, or to plants of every description.

340. Power plant.

An engine that is used or intended to be used for propelling aircraft. It includes turbo superchargers, appurtenances, and accessories necessary for its functioning, but does not include propellers.

341. Power-unit.

A system of one or more engines and ancillary parts which are together necessary to provide thrust, independently of the continued operation of any other power-unit(s), but not including short period thrust-producing devices.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

342. Pre-flight inspection.

The inspection carried out before flight to ensure that the aircraft is fit for the intended flight.

343. Pressure-altitude.

An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere.

344. Pressurised aircraft.

For airman-licensing purposes, means an aircraft that has a service ceiling or maximum operating altitude, whichever is lower, above 25,000 feet MSL.

345. Prevailing visibility.

The greatest visibility value, observed in accordance with the definition of "visibility", which is reached within at least half the horizon circle or within at least half of the surface of the aerodrome. These areas could comprise contiguous or non-contiguous sectors.

346. Primary runway(s).

Runway(s) used in preference to others whenever conditions permit.

347. Problematic use of substances.

The use of one or more psychoactive substances by aviation personnel in a way that:

- a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or
- b) causes or worsens an occupational, social, mental or physical problem or disorder.

348. Product.

An aircraft, engine or propeller.

349. Prognostic chart.

A forecast of a specified meteorological element(s) for a specified time or period and a specified surface or portion of airspace, depicted graphically on a chart.

350. Prohibited area.

An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

351. Propeller.

A device for propelling an aircraft that has blades on a power plant driven shaft and that, when rotated, produces by its action on the air, a thrust approximately perpendicular to its plane of rotation. It includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of power plants.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

352. Proper shipping name.

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

353. Protected flight zones.

Airspace specifically designated to mitigate the hazardous effects of laser radiation.

354. Protective breathing equipment.

Breathing equipment for protection against smoke, fumes and other harmful gases.

355. Psychoactive substances.

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

356. Quality assurance.

Part of quality management focused on providing confidence that quality requirements will be fulfilled (ISO 9000).

357. Quality control.

Part of quality management focused on fulfilling quality requirements (ISO 9000).

358. Quality management.

Coordinated activities to direct and control an organization with regard to quality (ISO 9000).

359. Radiotelephony.

A form of radio communication primarily intended for the exchange of information in the form of speech.

360. Rating.

An authorisation entered on or associated with a license or certificate and forming part thereof, stating special conditions, privileges or limitations pertaining to such license or certificate.

361. Rendering (a Certificate of Airworthiness) valid.

The action taken by BCAA, as an alternative to issuing its own Certificate of Airworthiness, in accepting a Certificate of Airworthiness issued by any other Contracting State as the equivalent of its own Certificate of Airworthiness.

362. Rendering (a licence) valid.

The action taken by BCAA, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence.

363. Repair.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

The restoration of an aeronautical product to an airworthy condition as defined by the appropriate airworthiness requirements.

364. Repetitive flight plan (RPL).

A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

365. Reported headwind component.

Reported headwind component is interpreted as being that reported at the time of flight planning and may be used provided there is no significant change of un-factored wind prior to take-off.

366. Reporting point.

A specified geographical location in relation to which the position of an aircraft can be reported.

367. Rescue coordination centre.

A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

368. Restricted area.

An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

369. Road.

An established surface route on the movement area meant for the exclusive use of vehicles.

370. Road-holding position.

A designated position at which vehicles may be required to hold.

371. Rotation Point (RP).

The rotation point is defined as the point at which a cyclic input is made to initiate a nose-down attitude change during the take-off flight path. It is the last point in the take-off path from which, in the event of an engine failure being recognised, a forced landing on the deck can be achieved.

372. Rotorcraft.

A power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

373. Runway.

A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

374. Runway end safety area (RESA).

An area symmetrical about the extended runway centre line and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.

375. Runway guard lights.

A light system intended to caution pilots or vehicle drivers that they are about to enter an active runway.

376. Runway-holding position.

A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

377. Runway strip.

A defined area including the runway and stopway, if provided, intended:

- a) To reduce the risk of damage to aircraft running off a runway; and
- b) To protect aircraft flying over it during take-off or landing operations.

378. Runway turn pad.

A defined area on a land aerodrome adjacent to a runway for the purpose of completing a 180-degree turn on a runway.

379. 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.

380. Safe forced landing.

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

381. Safety area.

A defined area on a heliport surrounding the FATO which is free of obstacles, other than those required for air navigation purposes, and intended to reduce the risk of damage to helicopters accidentally diverging from the FATO.

382. Safety management system.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

A system for the management of safety at aerodromes, including the organizational structure, responsibilities, procedures, processes and provisions form the implementation of aerodrome safety policies by an aerodrome operator, which provides for control of safety at, and the safe use of, the aerodrome.

383. Safety-sensitive personnel.

Persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers.

384. Satisfactory evidence.

A set of documents or activities that a BCAA, accepts as sufficient to show compliance with an airworthiness requirement.

385. Search and rescue services unit.

A generic term meaning, as the case may be, rescue coordination centre, rescue sub centre or alerting post.

386. Segregated parallel operations.

Simultaneous operations on parallel or near-parallel instrument runways in which one runway is used exclusively for approaches and the other runway is used exclusively for departures.

387. Separate runways.

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

388. Serious incident.

An incident involving circumstances indicating that an accident nearly occurred.

389. Serious injury.

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

- a) Requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received;
- b) Results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
- c) Involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
- d) Involves injury to any internal organ; or
- e) Involves second or third degree burns, or any burns affecting more than 5% of the body surface; or
- f) Involves verified exposure to infectious substances or injurious radiation.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

390. Shoulder.

An area adjacent to the edge of a pavement so prepared as to provide a transition between the pavement and the adjacent surface.

391. SIGMET information.

Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of aircraft operations.

392. Sign a maintenance release (to).

To certify that maintenance work has been completed satisfactorily in accordance with the applicable Standards of airworthiness, by issuing the maintenance release.

393. Signal area.

An area on an aerodrome used for the display of ground signals.

394. Slush.

Water-saturated snow which with a heel-and-toe slap down motion against the ground will be displaced with a splatter; specific gravity: 0.5 up to 0.8.

395. Small aeroplane.

An aeroplane having a maximum certified take-off mass of less than 5700 kg.

396. Snow (on the ground).

a) Dry snow.

Snow which can be blown if loose or, if compacted by hand, will fall apart again upon release; specific gravity: up to but not including 0.35.

b) Wet snow.

Snow which, if compacted by hand, will stick together and tend to or form a snowball; specific gravity: 0.35 up to but not including 0.5.

c) Compacted snow.

Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into lumps if picked up; specific gravity: 0.5 and over.

397. Special VFR flight.

A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

398. Standard isobaric surface.

An isobaric surface used on a worldwide basis for representing and analysing the conditions in the atmosphere.

399. State of Design.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

The State having jurisdiction over the organization responsible for the type design.

400. State of Manufacture.

The State having jurisdiction over the organization responsible for the final assembly of the aircraft.

401. State of the Operator.

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

402. State of Origin.

The State in which dangerous goods were first loaded on an aircraft.

403. State of Registry.

The State on whose register the aircraft is entered.

404. Station declination.

An alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated.

405. Stopway.

A defined rectangular area on the ground at the end of take-off run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take off.

406. Supplemental oxygen.

The additional oxygen required to protect each occupant against the adverse effects of excessive cabin altitude and to maintain acceptable physiological conditions.

407. Surface level heliport.

A heliport located on the ground or on the water.

408. Switch-over time (light).

The time required for the actual intensity of a light measured in a given direction to fall from 50 per cent and recover to 50 per cent during a power supply changeover, when the light is being operated at intensities of 25 per cent or above.

409. Take-off decision point (TDP).

The point used in determining take-off performance from which, a power unit failure having been recognised at this point, either a rejected take-off may be made or a take-off safely continued.

410. Take-off distance required.

The horizontal distance required from the start of the take-off to the point at which V_{Toss} , a height of 10.7 m (35 ft) above the take-off surface, and a positive climb

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

gradient are achieved, following failure of the critical power unit at TDP, the remaining power units within approved operating limits.

411. Take-off mass.

The take-off mass of the helicopter shall be taken to be its mass, including everything and everyone carried at the commencement of the take-off.

412. Take-off runway.

A runway intended for take-off only.

413. Take-off surface.

That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft taking off in a particular direction.

414. Taxiing.

Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

415. Taxiway.

A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

a) Aircraft stand taxi lane.

A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

b) Apron taxiway.

A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

c) Rapid exit taxiway.

A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

416. Taxiway intersection.

A junction of two or more taxiways.

417. Taxiway strip.

An area including a taxiway intended to protect an aircraft operating on the taxiway and to reduce the risk of damage to an aircraft accidentally running off the taxiway.

418. Technical instructions.

The latest effective edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc. 9284-AN/905), including the supplement and any addendum, approved and published by decision of the Council of the ICAO.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

419. Technical log.

A document carried on an aircraft that contains information to meet ICAO requirements; a technical log contains two independent sections: a journey record section and an aircraft maintenance record section.

420. Tenant

means any organization – other than the relevant airport operator – who carries out any form of activities at the airport under a contract with the airport operator.

421. Terminal control area.

A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

422. Threshold.

The beginning of that portion of the runway usable for landing.

423. Total estimated elapsed time.

For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome.

424. Touchdown and lift-off area (TLOF).

A load bearing area on which a helicopter may touch down or lift off.

425. Touchdown zone.

The portion of a runway, beyond the threshold, where it is intended landing aeroplanes first contact the runway.

426. Traceability.

A characteristic of a calibration, analogous to a pedigree. A traceable calibration is achieved when each Measurement Device and Working Standard, in a hierarchy stretching back to the National Standard, was itself properly calibrated, and the results properly documented. The documentation provides the information needed to show that all calibrations in the chain of calibrations were properly performed.

427. Track.

The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

428. Traffic avoidance advice.

Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision.

429. Traffic information.

Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

430. Traffic load.

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

431. Training program.

Program that consists of courses, courseware, facilities, flight training equipment, and personnel necessary to accomplish a specific training objective. It may include a core curriculum and a specialty curriculum.

432. Training to proficiency.

The process of the check airman administering each prescribed manoeuvre and procedure to a pilot as necessary until it is performed successfully during the training period.

433. Transition altitude.

The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

434. Tropical cyclone.

Generic term for a non-frontal synoptic-scale cyclone originating over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation.

435. Tropical cyclone advisory centre (TCAC).

A meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, world area forecast centres and international OPMET databanks regarding the position, forecast direction and speed of movement, central pressure and maximum surface wind of tropical cyclones.

436. Type Certificate.

A document issued by a Contracting State to define the design of an aircraft type and to certify that this design meets the appropriate airworthiness requirements of that State.

437. Type Certificated (TC).

Reference to when an aircraft was type certificated means the date of TC issuance, or equivalent, in the country of origin (i.e. the State where the first TC was issued).

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

438. Ultimate load.

The limit load multiplied by the appropriate factor of safety.

439. Unit load device.

Any type of aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

440. Unmanned free balloon.

A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

441. UN number.

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

442. Unserviceable area.

A part of the movement area that is unfit and unavailable for use by aircraft.

443. Upper-air chart.

A meteorological chart relating to a specified upper-air surface or layer of the atmosphere.

444. Usability factor.

The percentage of time during which the use of a runway or system of runways is not restricted because of the cross-wind component.

445. VFR.

The symbol used to designate the visual flight rules.

446. VFR flight.

A flight conducted in accordance with the visual flight rules.

447. Visibility.

Visibility for aeronautical purposes is the greater of:

- a) The greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;
- b) The greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

448. Visual approach.

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

449. Visual meteorological conditions (VMC).

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

450. VMC.

The symbol used to designate visual Meteorological Conditions.

451. Volcanic ash advisory centre (VAAC).

A meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, area control centres, flight information centres, world area forecast centres and international OPMET databanks regarding the lateral and vertical extent and forecast movement of volcanic ash in the atmosphere following volcanic eruptions.

452. VOLMET.

Meteorological information for aircraft in flight.

453. Data link-VOLMET (D-VOLMET).

Provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link.

454. VOLMET broadcast.

Provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts.

455. Work area.

A part of an aerodrome in which maintenance or construction works are in progress.

456. World area forecast centre (WAFC).

A meteorological centre designated to prepare and issue significant weather forecasts and upper-air forecasts in digital form on a global basis direct to States by appropriate means as part of the aeronautical fixed service.

457. World area forecast system (WAFS).

A worldwide system by which world area forecast centres provide aeronautical meteorological en-route forecasts in uniform standardized formats.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 1- Preliminary and Definitions

458. Waste

has the same meaning as 'Waste' defined in "National Environment Protection Act 2007" -includes any matter prescribed to be waste and any matter, whether liquid, solid, gaseous, or radioactive, which is discarded or intended to be discarded.



BHUTAN AIR NAVIGATION REGULATIONS



SECTION 2 - AIRCRAFT NATIONALITY AND REGISTRATION MARKS

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 2- Aircraft Nationality and Registration Marks

2.1 General Provisions

- 2.1.1 In accordance with Section 2(2) of Civil Aviation Act of Bhutan 2016, the provisions of the Act and the rules and regulations made under the Act, and the provisions of the Convention on International Civil Aviation including Annexes and its subsequent amendments and other related conventions shall apply to every aircraft registered in Bhutan operating whether within or outside.
- 2.1.2 This Regulation is developed in line with Section 28, 29 and 30 of the Civil Aviation Act of Bhutan 2016.
- 2.1.3 The HoA shall establish and maintain a system for the national registration of civil aircrafts in Bhutan in accordance with section 77 of the Act. A certificate or registration issued under section 78 of the Act shall not be considered evidence as to ownership in any proceeding under the laws of Bhutan in which ownership of the aircraft by a particular person is or may be in issue.
- 2.1.4 An aircraft shall not fly in Bhutan if it is registered in more than one State, but its registration may be changed from one State to another.
- 2.1.5 The registration or transfer of registration of aircraft in Bhutan shall be done in accordance with Civil Aviation Act of Bhutan 2016, BANRs Section 2 and BCAR-Aircraft Nationality and Registration Marks.
- 2.1.6 Bhutan shall undertake to supply to any other contracting State or to the International Civil Aviation Organization, on demand, information concerning the registration and ownership of any particular aircraft registered in Bhutan. In addition, Bhutan shall furnish reports to the International Civil Aviation Organization, under this section, giving such pertinent data as can be made available concerning the ownership and control of aircraft registered in Bhutan and engaged in international air navigation. The data thus obtained by the International Civil Aviation Organization shall be made available by Bhutan on request to the other contracting States.

2.2 Aircraft registration

- 2.2.1 An aircraft other than a State aircraft shall not fly in Bhutan unless it has been included in the Register of Aircraft in Bhutan, or has been registered in another state with which there is an Air Services Agreement between Bhutan and that State which makes provision for the flight over Bhutan of aircraft registered in that State.
- 2.2.2 Any transfer of ownership of an aircraft registered in Bhutan shall be notified to the BCAA.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 2- Aircraft Nationality and Registration Marks


- 2.2.3 The owner of an aircraft registered in Bhutan shall inform the BCAA the destruction of the aircraft, or its permanent withdrawal from use, or of its transfer to the Register of Aircraft of another State.
- 2.2.2 Any transfer of ownership of an aircraft registered in Bhutan shall be notified to the BCAA.
- 2.2.3 The owner of an aircraft registered in Bhutan shall inform the BCAA the destruction of the aircraft, or its permanent withdrawal from use, or of its transfer to the Register of Aircraft of another State.

2.3 De registration

- 2.3.1 The Authority may de-register or cancel the registration of an aircraft under the following circumstances:
- a) Upon application by the registered owner for purpose of registering the aircraft in another state or for any other purpose; or
 - b) Upon destruction of the aircraft or its permanent withdrawal from use.
- 2.3.2 The Authority shall, before de-registering an aircraft under this regulation, require the registered owner to:
- a) Return to the Authority the certificate of registration;
 - b) Settle any liens or encumbrances attached to the aircraft;
 - c) Remove all nationality and registration marks assigned to the aircraft; and
 - d) Comply with any other conditions as the Authority may specify.

2.4 Markings of aircraft registered in Bhutan

- 2.4.1 Every aircraft engaged in air navigation in Bhutan shall bear appropriate nationality and registration mark allocated by BCAA.
- 2.4.2 The nationality and registration marks on any aircraft registered in Bhutan shall be prescribed in **BCAR-Aircraft Nationality and Registration Marks**.



BHUTAN AIR NAVIGATION REGULATIONS



SECTION 3 - Air Operations

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

3.2.1.3 The pilot in command shall be satisfied that:

- i. The aircraft is airworthy as specified in paragraph 3.6;
- ii. If required, the aircraft is duly registered and that appropriate certificates with respect thereto are aboard the aircraft;
- iii. Instruments and equipment as specified in paragraph 3.5 required for the execution of that flight are installed in the aircraft and are operative, unless waived by the applicable MEL or equivalent document;
- iv. The mass of the aircraft and centre of gravity location are such that the flight can be conducted within limits prescribed in the airworthiness documentation;
- v. All cabin baggage, hold luggage and cargo is properly loaded and secured; and
- vi. The aircraft operating limitations as specified in paragraph 3.4 will not be exceeded at any time during the flight;

3.2.1.4 Information regarding meteorological conditions for departure, destination and, where applicable, alternate aerodromes, as well as en-route conditions, must be available to the flight crew. Special attention must be given to potentially hazardous atmospheric conditions;

3.2.1.5 Appropriate mitigation measures or contingency plans must be in place to deal with potentially hazardous atmospheric conditions expected to be encountered in flight;

3.2.1.6 For a flight based on visual flight rules, meteorological conditions along the route to be flown must be such as to render compliance with those flight rules possible. For a flight based on instrument flight rules a destination and where applicable alternate aerodrome(s) where the aircraft can land must be selected, taking into account in particular the forecasted meteorological conditions, the availability of air navigation services, the availability of ground facilities and the instrument flight procedures approved by the State in which the destination and/or alternate aerodrome is located;

3.2.1.7 the amount of fuel/energy for propulsion and consumables on board must be sufficient to ensure that the intended flight can be completed safely, taking into account the meteorological conditions, any element affecting the performance of the aircraft and any delays that are expected in flight. In addition, a fuel/energy reserve must be carried to provide for contingencies. Procedures for in-flight fuel/energy management must be established when relevant.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

3.3 Flight Operations

3.3.1 With regard to flight operations, all the following conditions shall be complied with:

- (a) Where relevant for the type of aircraft, during take-off and landing, and whenever deemed necessary by the pilot in command in the interest of safety, each crew member must be seated at their crew station and must use the provided restraint systems;
- (b) Where relevant for the type of aircraft, all flight crew members required to be on flight deck duty must be and remain at their station, with their seatbelts fastened except en-route for physiological or operational needs;
- (c) Where relevant for the type of aircraft and the type of operation, before take-off and landing, during taxiing and whenever deemed necessary in the interest of safety, the pilot in command must ensure that each passenger is properly seated and secured;
- (d) A flight must be performed in such a way that appropriate separation from other aircraft is maintained and that adequate obstacle clearance is ensured, during all phases of the flight. Such separation must at least be those required by the applicable rules of the air, as appropriate to the type of operation;
- (e) A flight must not be continued unless known conditions continue to be at least equivalent to those in paragraph 3.1. Furthermore, for a flight based on instrument flight rules, an approach toward an aerodrome must not be continued below certain specified heights or beyond a certain position, if prescribed visibility criteria are not met;
- (f) In an emergency, the pilot in command must ensure that all passengers are instructed in such emergency action as may be appropriate to the circumstances;
- (g) A pilot in command must take all necessary measures so as to minimize the consequences on the flight of disruptive passenger behavior;
- (h) An aircraft must not be taxied on the movement area of an aerodrome, or its rotor must not be turned under power, unless the person at the controls is appropriately competent;
- (i) The applicable in-flight fuel/energy management procedures must be used, when relevant.

3.4 Aircraft Performance and Operating Limitations

3.4.1 An aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation, as the case may be. The flight manual or equivalent

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

documentation must be available to the crew and kept up to date for each aircraft.

- 3.4.2 Notwithstanding paragraph 3.4.1, for operations with helicopters a momentary flight through the limiting height velocity envelope may be permitted, provided that safety is ensured.
- 3.4.3 The aircraft must be operated in accordance with the applicable environmental documentation.
- 3.4.4 A flight must not be commenced or continued unless the aircraft's scheduled performance, considering all factors which significantly affect its performance level, allows all phases of flight to be executed within the applicable distances/areas and obstacle clearances at the planned operating mass. Performance factors which significantly affect take-off, en-route and approach/landing are, particularly:
- (a) Operating procedures;
 - (b) Pressure altitude of the aerodrome;
 - (c) Weather conditions (temperature, wind, precipitation and visual range);
 - (d) Size, slope and condition of the take-off/landing area; and
 - (e) The condition of the airframe, the power plant or the systems, taking into account possible deterioration.
- 3.4.5 Such factors must 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, as appropriate to the type of operation.

3.5 Instruments, Data and Equipment

- 3.5.1 An aircraft must be equipped with all navigation, communication and other equipment necessary for the intended flight, taking account of air traffic regulations and rules of the air applicable during any phase of the flight.
- 3.5.2 When relevant, an aircraft must be equipped with all necessary safety, medical, evacuation and survival equipment, taking account of the risks associated to the areas of operation, the routes to be flown, the flight altitude and the duration of the flight.
- 3.5.3 All data necessary for the execution of the flight by the crew must be updated and available on board the aircraft taking account of applicable air traffic regulations, rules of the air, flight altitudes and areas of operation.

3.6 Continuing Airworthiness and Environmental Compatibility of Products

- 3.6.1 The aircraft must not be operated unless:

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

- (a) The aircraft is airworthy and in a condition for safe and environmentally compatible operation;
- (b) The operational and emergency equipment necessary for the intended flight is serviceable;
- (c) The airworthiness document and, if applicable, the noise certificate of the aircraft is valid; and
- (d) The maintenance of the aircraft is performed in accordance with the applicable requirements.

3.6.2 Before each flight or a series of consecutive flights, the aircraft shall be inspected, through a pre-flight check, to determine whether it is fit for the intended flight.

3.6.3 The aircraft must not be operated unless it is released to service by qualified persons or organizations, after maintenance. The signed release to service must contain in particular, the basic details of the maintenance carried out.

3.6.4 Records necessary to demonstrate the airworthiness and environmental compatibility status of the aircraft must be kept, and protected against, unauthorized modification for the period of time corresponding to the applicable continuing airworthiness requirements, until the information contained has been superseded by new information equivalent in scope and detail but in any event not less than 24 months.

3.6.5 All modifications and repairs must comply with the essential requirements for airworthiness and, if applicable, the environmental compatibility of products. The substantiating data supporting compliance with the airworthiness requirements and requirements for the environmental compatibility of products must be retained and protected against unauthorized modification.

3.6.6 It is the responsibility of the aircraft operator to ensure that a third party performing the maintenance complies with the operator's safety and security requirements.

3.7 Crew Members

3.7.1 The number and composition of the crew must be determined taking into account:

- (a) the certification limitations of the aircraft, including if applicable, the relevant emergency evacuation demonstration;
- (b) the aircraft configuration; and
- (c) the type and duration of operations.

3.7.2 The pilot in command shall have the authority to give all commands and take any appropriate actions for the purpose of securing the operation and the safety of the aircraft and of persons and/or property carried therein.

3.7.3 The pilot in command shall have the authority to give all commands and take any appropriate actions for the purpose of securing the operation and the safety of the aircraft

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

and of persons and/or property carried therein.

- 3.7.4 In an emergency situation, which endangers the operation or the safety of the aircraft and/or persons on board, the pilot in command must take any action he/she considers necessary in the interest of safety. When such action involves a violation of local regulations or procedures, the pilot in command must be responsible for notifying the appropriate local authority without delay.
- 3.7.5 Without prejudice to sub section 3.11.12, when other persons are carried on board, emergency or abnormal situations may only be simulated if those persons have been duly informed and are aware of the associated risks before boarding the flight.
- 3.7.6 No crew member must allow their task achievement/decision making to deteriorate to the extent that flight safety is endangered because of the effects of fatigue, taking into account, inter alia, fatigue accumulation, sleep deprivation, number of sectors flown, night duties or time zone changes. Rest periods must provide sufficient time to enable crew members to overcome the effects of the previous duties and to be well rested by the start of the following flight duty period.
- 3.7.7 A crew member must not perform allocated duties on board an aircraft when under the influence of psychoactive substances or alcohol or when unfit due to injury, fatigue, medication, sickness or other similar causes.

3.8 Flight Crew

- 3.8.1 A person shall not act as a flight crew member of an aircraft registered in Bhutan unless he/she is in possession of an appropriate license issued or validated by Bhutan.
- 3.8.2 The flight crew of a commercial air transport aircraft registered in Bhutan shall include at least one member who holds a valid license, issued or validated in Bhutan, authorising him to operate the type of radio transmitting equipment to be used.
- 3.8.3 A commercial air transport aircraft which has a separate station for a flight engineer shall have in the flight crew at least one flight engineer especially assigned to that station with a valid licence issued or validated in Bhutan, unless the flight engineer duties can be satisfactorily carried out by another flight crew member, without interference with regular duties.
- 3.8.4 The flight crew of a commercial air transport aircraft shall include at least one member who holds a valid flight navigator license issued or validated in Bhutan on all flights where the navigation necessary for the safe conduct of the flight.
- 3.8.5 The rency experience required shall be limited to 90 days. The extension to 120 days by line flying under supervision of any instructor or examiner shall not be applicable in Bhutan. In addition the operator shall ensure that:



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

a) *Pilot-in-Command.*

A pilot does not operate an aeroplane as pilot-in-command of a commercial flight at night unless he has carried out, during the hours of darkness, at least three take-offs and landings as pilot flying in an aeroplane or an approved flight simulator of the type to be used, in the preceding 90 days. The flight simulator must be acceptable to the Bhutan Civil Aviation Authority for take-offs and landings: and

b) *Co-pilot.*

A co-pilot is not assigned to operate at the flight controls during take-off and/or landing at night unless he has operated as pilot-in-command or as co-pilot at the controls, during the hours of darkness, of an aeroplane or approved flight simulator of the type to be used, in the preceding 90 days. The flight simulator must be acceptable to the Bhutan Civil Aviation Authority, for take-offs and landings.

3.9 Flight Operations Officers

3.9.1 A person employed for operational control duties by the holder of an Air Operator Certificate issued in Bhutan shall not act as Flight Operations Officer unless he holds a Flight Operations Officer license issued or validated in Bhutan and has a level of experience and competence not lower than the minimum requirements as may be specified by the HoA.

a) Has demonstrated knowledge of:

- i. The contents of the relevant Operations Manual;
- ii. The radio equipment in the aircraft used;
- iii. The navigation equipment used, including the peculiarities and limitations of each navigation system;
- iv. The seasonal meteorological conditions in the areas in which he is authorized to exercise flight supervision;
- v. The effects of meteorological conditions on radio reception in the aircraft used; and
- vi. The aircraft loading instructions.

b) Has demonstrated the ability:

- i. To assist the pilot-in-command in the preparation of the operational flight plan and the air traffic control (ATC) flight plan, and to file the flight plan with the appropriate air traffic services unit;
- ii. To furnish a pilot-in-command while in flight, by appropriate means, with such information as may be needed for the safe conduct of the flight;
- iii. To initiate emergency action as may be necessary in compliance with the procedures in the Operations Manual or any other Manual which relates to emergency procedures;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

- iv. To act so as not to conflict with procedures established by air traffic control, the meteorological service, or the communication service; and
- c) Has, within the preceding 12 months, made at least one qualification flight on the flight deck of an aircraft in the area in which he is authorized to exercise flight supervision including landings at as many aerodromes as may be practicable.

3.10 Responsibility of License Holders.

- 3.10.1 Any person holding a License issued by the HoA, BCAA who, while exercising the privileges of that License, commits any offence or acts in such a way as to bring the License into disrepute shall, notwithstanding any other penalty imposed by any Court, be liable to the temporary or permanent withdrawal of the license.

3.11 Additional Regulations for Commercial Air Transport and other Operations subject to a Certification or Declaration Requirement performed with Aeroplanes, Helicopters or Tilt Rotor Aircraft

- 3.11.1 The operation must not be undertaken unless the following conditions are met:

- (a) The aircraft operator shall have directly or through agreements with third parties the means necessary for the scale and scope of the operations. Those means comprise but are not limited to the following: aircraft, facilities, management structure, personnel, equipment, documentation of tasks, responsibilities and procedures, access to relevant data and record keeping;
- (b) The aircraft operator shall use only suitably qualified and trained personnel and implement and maintain training and checking programs for the crew members and other relevant personnel that are necessary to ensure the currency of their certificates, ratings and qualifications;
- (c) As appropriate for the type of activity undertaken and the size of the organization, the aircraft operator must implement and maintain a management system to ensure compliance with the essential requirements set out in this Annex, manage safety risks and aim for continuous improvement of this system; and
- (d) The aircraft operator shall establish an occurrence reporting system, as part of the management system under point (c), in order to contribute to the aim of continuous improvement of the safety. The occurrence reporting system shall be compliant with applicable national law.

- 3.11.2 The operation shall only be undertaken in accordance with an aircraft operator's operations manual. Such manual must contain all necessary instructions, information and procedures for all aircraft operated and for operations personnel to perform their duties. Limitations applicable to flight time, flight duty periods and rest periods for crew members must be specified. The operations manual and its revisions must be compliant with the approved flight manual and be amended as necessary.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 3 - Air Operations

- 3.11.3 The aircraft operator shall establish procedures, as appropriate, so as to minimize the consequences to safe flight operations of disruptive passenger behavior.
- 3.11.4 The aircraft operator shall develop and maintain security programs adapted to the aircraft and the type of operation including particularly:
- (a) security of the flight crew compartment;
 - (b) aircraft search procedure checklist;
 - (c) training programs; and
 - (d) protection of electronic and computer systems to prevent intentional and non-intentional system interference and corruption.
- 3.11.5 When security measures may adversely affect the safety of operations, the risks must be assessed and appropriate procedures developed to mitigate safety risks, this may necessitate the use of specialist equipment.
- 3.11.6 The aircraft operator shall designate one pilot amongst the flight crew as the pilot in command.
- 3.11.7 The prevention of fatigue shall be managed through a fatigue management system. For a flight, or series of flights, such a system needs to address flight time, flight-duty periods, duty and adapted rest periods. Limitations established within the fatigue management system must take into account all relevant factors contributing to fatigue such as, in particular, number of sectors flown, time-zone crossing, sleep deprivation, disruption of circadian cycles, night hours, positioning, cumulative duty time for given periods of time, sharing of allocated tasks between crew members, and also the provision of augmented crews.
- 3.11.8 The aircraft operator shall ensure that the tasks specified subsection 3.6.1 and those described in subsection 3.6.4 and 3.6.5 are controlled by an organization responsible for the continuing airworthiness management.
- 3.11.9 The aircraft operator shall ensure that the release to service required by subsection 3.6.3 is issued by an organization qualified for the maintenance of products, parts and not-installed equipment.
- 3.11.10 The organization referred to in 3.11.8 shall establish an organization manual providing, for use and guidance of personnel concerned, a description of all continuing airworthiness procedures of the organization.
- 3.11.11 A checklist system shall be available for use, as applicable, by crew members in all phases of operation of the aircraft under normal, abnormal and emergency conditions and situations. Procedures must be established for any reasonably foreseeable emergency situation.
- 3.11.12 Emergency or abnormal situations shall not be simulated when passengers or cargo are being carried.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 4 - General Aviation

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

4.1 Applicability

- 4.1.1 An aircraft which is registered in another State and operated by a pilot possessing a valid licence issued in Bhutan shall be deemed to be registered in Bhutan except that this shall not apply to such an aircraft if there is in existence a current agreement between Bhutan and the State of Registry which includes a provision that operational control of the aircraft will be the responsibility of the State of Registry.
- 4.1.2 The nationality and registration marks on any aircraft registered in Bhutan shall be painted and located as prescribed in **BCAR-AIRCRAFT NATIONALITY AND REGISTRATION MARKS**.

4.2 Flight Preparation

4.2.1 Serviceability of Facilities.

The pilot-in-command of a general aviation aircraft shall not commence a flight unless it has been ascertained by every reasonable means at that pilot's disposal, that the ground and facilities available and directly required for such flight and for the safe operation of the aircraft are adequate.

4.2.2 Pre-flight Preparation.

4.2.2.1 Before commencing a flight, the pilot-in-command of a general aviation aircraft shall satisfy himself that:

- a) The aircraft is airworthy;
- b) The instruments and equipment installed in the aircraft are appropriate for the type of operations to be undertaken;
- c) Any necessary maintenance has been carried out in accordance with the approved maintenance requirements;
- d) The mass of the aircraft does not exceed the maximum mass, calculated in accordance with the performance information provided in the Flight Manual or equivalent certification document, at which the aircraft can safely take off in the space available, maintain a safe clearance above obstacles while airborne and safely land in the space available at the destination aerodrome;
- e) Any load carried in the aircraft is properly distributed and safely secured; and
- f) The operating limitations contained in the Flight Manual, or equivalent certification document, will not be exceeded.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

4.2.3 Weather Reports.

4.2.3.1 Before commencing a flight, the pilot-in-command of a general aviation aircraft shall examine available current weather reports and shall become familiarised with all available information appropriate to the intended operation. For a flight away from the vicinity of the aerodrome, to be carried out in accordance with instrument flight rules, the pilot-in-command shall determine an alternative course of action in the event that the flight cannot be completed as planned and shall make provision for such alternative action when determining the fuel requirements of the flight.

4.2.4 Briefing of Passengers and Crew.

4.2.4.1 Before commencing a flight, the pilot-in-command of a general aviation aircraft shall ensure that crew members and passengers are made familiar with the location and the use of:

- a) Safety harness and, as appropriate;
- b) Emergency exits;
- c) Life jackets;
- d) Oxygen dispensing equipment; and
- e) Other emergency equipment provided for individual use.

4.2.4.2 If emergency equipment is carried for collective use, the pilot-in-command shall ensure that all persons on board the aircraft are aware of its location and general manner of use.

4.2.5 Fuel for VFR Flights.

4.2.5.1 The pilot-in-command of a general aviation aircraft shall not commence a flight to be conducted in compliance with Visual Flight Rules unless the aircraft carries sufficient fuel and oil to ensure that it can safely complete the flight.

4.2.6 Fuel for IFR Flights.

4.2.6.1 The pilot-in-command of a general aviation aeroplane shall not commence a flight to be conducted in compliance with Instrument Flight Rules unless sufficient fuel and oil is carried to allow the aeroplane to fly to the destination aerodrome and then to an alternate aerodrome and thereafter to fly for a period of 45 minutes. When the destination aerodrome has a standard instrument approach procedure promulgated, and current meteorological information available to the pilot indicates that, from two

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

hours before the estimated time of arrival to two hours after, there will be a cloud base of at least 300 m (1,000 ft) above the minimum associated with the instrument approach procedure and a visibility of at least 5.5 km, or 4 km more than the minimum associated with the procedure, the fuel carried may be that required to fly to the destination aerodrome and thereafter for a period of 45 minutes.

4.2.7 Minimum Flight Crew.

4.2.7.1 The pilot-in-command of a general aviation aircraft shall not commence a flight if the number of flight crew members is less than, or the composition of the crew different from that specified in the certificate of airworthiness, in the Flight Manual or in other documents associated with the certificate of airworthiness, and shall ensure that the licences of flight crew members are valid, and that each member of the flight crew has maintained the required level of competency.

4.2.8 Fuelling with Passengers on Board.

4.2.8.1 A general aviation aircraft shall not be refuelled when passengers are embarking, on board or disembarking unless the aircraft is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available, and two-way communication between the ground crew supervising the refuelling and the pilot-in-command or the qualified personnel is maintained.

4.3 Weather Conditions and Aerodrome operating Minima

4.3.1 State Minima.

4.3.1.1 The pilot-in-command of a general aviation aircraft shall not operate to and from an aerodrome using operating minima lower than those which may be established for that aerodrome by the BCAA in which it is located, except with the specific approval of BCAA.

4.3.2 Pre-flight Forecast Weather for Destination.

4.3.2.1 The pilot-in-command of a general aviation aeroplane shall not commence a flight to be conducted in accordance with instrument flight rules unless the available current meteorological information indicates that the conditions at the estimated time of arrival at the destination aerodrome and at a nominated alternate will be at or above the relevant aerodrome operating minima, except that if no alternate aerodrome is available or nominated, the flight shall not be commenced unless:

- a) An instrument approach procedure is promulgated as available at the destination aerodrome; and

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

- b) Available current meteorological information indicates that for a period of two hours before to two hours after the estimated time of arrival, the cloud base at the destination aerodrome will be at least 300 m (1,000 ft) above the minimum associated with the instrument approach procedure and the visibility will be at least 5.5 km.

4.3.3 In-flight Destination Weather Report.

- 4.3.3.1 The pilot-in-command of a general aviation aircraft shall not continue a flight towards an aerodrome of intended landing unless the latest available meteorological information indicates that conditions at that aerodrome, or at an available alternate, will, at the expected time of arrival, be at or above the relevant aerodrome operating minima.

4.3.4 Termination of an Approach.

- 4.3.4.1 Except in the case of an emergency, the pilot-in-command of a general aviation aircraft shall not continue an approach-to-land beyond a point at which the limits of the aerodrome operating minima established for that aerodrome by the State in which it is located would be infringed.

4.4 Aeroplane flight operations

4.4.1 Compliance with Laws, Regulations and Procedures.

- 4.4.1.1 The pilot-in-command of a general aviation aeroplane shall comply with the relevant laws, regulations and procedures of the States in which the aeroplane is operated and shall be responsible for the operation and safety of the aeroplane and for the safety of all persons on board during flight time.

4.4.2 Required Documents.

- 4.4.2.1 The pilot-in-command of a general aviation aeroplane shall not commence a flight unless the following documents in respect of that aeroplane are on board:

- a) Certificate of registration;
- b) Certificate of airworthiness;
- c) Noise certificate, if the aeroplane is certificated in accordance with the noise certification requirements established by the Director General;
- d) Appropriate licences for each member of the crew;



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

- e) A flight manual or other document or information concerning any operating limitations prescribed for that aeroplane by the Director General;
- f) 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; and
- g) If equipped with radio apparatus, the aeroplane radio station licence.

4.4.3 Reporting an Accident.

4.4.3.1 The pilot-in-command of a general aviation aeroplane shall report to the nearest appropriate authority and to the Director General by the quickest available means, any accident involving the aeroplane resulting in serious injury or death of any person or substantial damage to the aeroplane or property.

4.4.4 Incapacity of a crew member.

4.4.4.1 The pilot-in-command of a general aviation aeroplane shall not commence a flight if any member of the flight crew of the aeroplane is unable to carry out duties because of injury, sickness, fatigue or the effects of alcohol or drugs, and shall land at the nearest suitable aerodrome if any member of the flight crew suffers such incapacity in flight.

4.4.5 Crew Safety Harness.

4.4.5.1 Each flight crew member required to be on flight duty on a general aviation aeroplane shall remain at his/her station and keep his/her seat belt fastened, or safety harness fastened, where this is provided, except when absence is necessary for the performance of duties in connection with the operation of the aeroplane, or for physiological reasons.

4.4.6 Oxygen Requirement.

4.4.6.1 The pilot-in-command of a general aviation aeroplane shall ensure that breathing oxygen is available for use as required by members of the flight crew and by passengers during flights at altitudes above 3,000 m (10,000 ft).

4.4.6.2 Each flight crew member of a general aviation aeroplane, when engaged in performing duties essential to the safe operation of an aeroplane in flight, shall use breathing oxygen continuously at such altitudes where a lack of oxygen might result in impairment of faculties.

4.4.7 Emergency Instructions.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

The pilot-in-command of a general aviation aeroplane shall ensure that, in the event of an emergency, all persons on board are instructed in the appropriate action to be taken.

4.5 Aeroplane Performance

4.5.1 Operating Limitations.

4.5.1.1 An aeroplane shall be operated in compliance with the terms of its Certificate of Airworthiness and within the operating limitations contained in the Flight Manual, or other equivalent document approved by the Director General.

4.5.2 Factors Affecting Performance.

4.5.2.1 In applying the provisions of this chapter, account shall be taken of all factors that significantly affect the performance of the aeroplane, such as aeroplane mass, pressure altitude, temperature, wind, runway gradient, and runway contamination (including coefficient of friction). 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.

4.5.3 Mass of an Aeroplane.

4.5.3.1 The mass of an aeroplane at the start of the take-off, or at the expected time of landing at the aerodrome of intended landing and at any alternate aerodrome shall, in no case, exceed the relevant maximum mass at which compliance has been demonstrated with the applicable Noise Certification Standards in ICAO annex 16, Volume I, unless otherwise authorised in exceptional circumstances for a specific aerodrome or runway by the Director General in respect of aerodromes located in Bhutan and in the case of other States, the competent authority of the State in which the aerodrome is located.

4.5.4 Aeroplane Mass at Take-Off.

4.5.4.1 The mass of an aeroplane at the start of take-off shall, in no case, exceed the maximum take-off mass specified in the Flight Manual, or equivalent document, appropriate to the distance available for take-off, the elevation or 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, including relative humidity.

4.5.5 Performance Ceiling.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

4.5.5 The all-engine operating performance ceiling of the aeroplane when operated in accordance with Instrument Flight Rules shall not be less than 300 m (1,000 ft) above the highest obstacle within 8 km of the estimated position of the aeroplane and if the flight is over high terrain or mountainous areas, the ceiling shall be not less than 600 m (2,000 ft) above the highest obstacle within 8 km of the estimated position of the aeroplane.

4.5.6 Maximum Landing Mass.

4.5.6 The estimated mass of an aeroplane for the expected time of landing at the aerodrome of intended landing and at any alternate aerodrome, shall in no case exceed the maximum landing mass determined from the Flight Manual, or equivalent document, appropriate to the distance available for landing, the elevation or the pressure altitude appropriate to those aerodromes, and if used as a parameter to determine the maximum landing mass, any other local atmospheric condition, including relative humidity.

4.6 Instruments and equipments

4.6.1 Minimum Instruments.

4.6.1.1 An aeroplane registered in Bhutan shall not fly unless there are available in the aeroplane all the instruments that are necessary to enable the flight crew to control the flight path of the aeroplane, to carry out any required procedural manoeuvres and to comply with the operating limitations of the aeroplane in the expected operating conditions.

4.6.2 Minimum Navigation Equipment.

4.6.2.1 An aeroplane registered in Bhutan shall have navigation equipment which will enable it to proceed in accordance with the operational flight plan for the flight and to comply with the requirements of air traffic services. On any flight in an area where a minimum navigation performance is specified, it shall have equipment which complies with that specification. The equipment provided shall be sufficient for compliance with this regulation after the failure of one item.

4.6.3 Minimum Equipment for an Instrument Approach.

4.6.3.1 An aeroplane registered in Bhutan, on flights in which it is intended to carry out an instrument approach procedure, shall be provided with equipment capable of receiving signals providing guidance to a point from which a visual landing can be made while complying with the appropriate instrument approach procedure. Such equipment

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

shall be capable of providing guidance at any aerodrome where it is intended to carry out an instrument approach procedure.

4.6.4 Emergency Equipment.

4.6.4.1 An aeroplane registered in Bhutan shall not fly unless it is equipped with:

- a) A first aid kit which is accessible to the flight crew and/or the passengers;
- b) Portable fire extinguishers of a type which will not cause dangerous contamination of the air when used inside the aeroplane, located in the pilot's compartment and in each passenger compartment which is separate from the pilot's compartment and not accessible to the pilot or co-pilot;
- c) A seat fitted with a seat belt or a berth fitted with a restraining belt for each passenger in the aeroplane who is more than two years of age;
- d) A seat fitted with a safety harness for each member of the flight crew; and
- e) Spare electric fuses of appropriate ratings for replacement of those accessible in flight.

4.6.5 Minimum Equipment for VFR Flights.

4.6.5.1 An aeroplane registered in Bhutan shall not fly in controlled airspace under visual flight rules during the en-route phase of a flight unless it is equipped with:

- a) A magnetic compass or equivalent system;
- b) A means of indicating the time in hours, minutes and seconds;
- c) A sensitive pressure altimeter; and
- d) A means of indicating airspeed.

4.6.6 Minimum Equipment for IFR Flights.

4.6.6.1 An aeroplane registered in Bhutan shall not be operated under instrument flight rules, or in conditions where the desired flight path cannot be followed without reference to flight instruments, unless the aeroplane is equipped with:

- a) A means of indicating magnetic heading;
- b) A means of indicating airspeed which is protected against malfunction due to condensation or icing;



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

- c) A sensitive pressure altimeter;
- d) A means of indicating rate of climb or descent;
- e) A means of indicating the time in hours, minutes and seconds;
- f) A means of indicating rate of turn;
- g) A means of indicating slip or skid;
- h) A means of indicating attitude in roll and pitch;
- i) A gyroscopic heading indicator or equivalent system;
- j) A means of indicating the failure of power for electrically driven gyroscopic instruments;
- k) A means of indicating outside air temperature;
- l) Information relating to communication facilities, navigation aids and aerodromes appropriate to the flight;
- m) If the aeroplane is turbine-engine with a maximum certificated take-off mass greater than 15,000 kg, or authorised to carry more than 30 passengers, a ground proximity warning system; and
- n) If the flight is at night:
 - 1) A means of illuminating all instruments and equipments those are essential for the safe operation of the aeroplane;
 - 2) Illumination in passenger compartments;
 - 3) A landing light;
 - 4) Navigation lights, anti-collision lights and any other lights prescribed by the Director to meet the requirements of ICAO Annex 2; and
 - 5) An electric torch for each member of the flight crew.

4.6.7 Carriage of Life-Jackets and/or Life Rafts.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

4.6.7.1 A single-engined land aeroplane registered in Bhutan, or a multi-engined land aeroplane registered in Bhutan and incapable of continuing flight with one engine inoperative, shall not:

- a) fly over water beyond gliding distance from land unless it carries a life jacket or equivalent flotation device for each person on board, stowed in a position easily accessible from the seat of the person for whose use it is provided;
- b) fly over water more than 185 km (100 NM) from land unless it carries life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their use in emergency, is provided with such life-saving equipment and means of sustaining life as is appropriate to the area to be overflown and is equipped with pyrotechnic distress signals and survival radio equipment operating on VHF.

4.6.7.2 A multi-engined land aeroplane registered in Bhutan which is capable of continuing flight with one engine inoperative shall not:

- a) Fly over water at a distance of more than 93 km (50 NM) from land suitable for making an emergency landing unless it carries a life jacket or equivalent individual flotation device for each person on board, stowed in position easily accessible from the seat or berth of the person for whose use it is provided; or
- b) Fly over water at a distance of more than 370 km (200 NM) from land suitable for making an emergency landing unless it carries life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their use in an emergency, is provided with such life-saving equipment and means of sustaining life as is appropriate to the area to be overflown, and is equipped with pyrotechnic distress signals and survival radio equipment operating on VHF.

4.6.8 Minimum Radio Equipment.

4.6.8.1 An aeroplane registered in Bhutan shall have, on all flights, radio communication equipment which is suitable for:

- a) Two-way communication for aircraft control purposes;
- b) Receiving meteorological information;
- c) Conducting two-way communication at any time during a flight with aeronautical stations using such frequencies as may be prescribed; and

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

- d) Two-way communication on the aeronautical emergency frequency.

4.6.9 Survival Radio Equipment.

4.6.9.1 An aeroplane registered in Bhutan shall not be flown over areas that have been designated by the Director as being areas where search and rescue would be difficult unless it is equipped with at least one portable survival radio equipment and with such signalling devices and life-saving equipment, including means of sustaining life, as may be appropriate to the area over flown. The radio equipment shall be independent of the aeroplane power supply and shall be capable of being operated away from the aeroplane by unskilled persons.

4.6.11 Oxygen Requirement and Pressurisation Loss

4.6.11.1 An aeroplane registered in Bhutan shall not be operated at heights above 3,000 m (10,000 ft) unless:

- a) Sufficient breathing oxygen is carried to enable the members of the flight crew to retain full faculties and to prevent harmful effects on passengers; and
- b) The aeroplane is equipped with a device to provide positive warning to the flight crew of any dangerous loss of pressurisation in the case of pressurised aeroplanes intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa.

4.6.12 Flight Data Recorder

4.6.12.1 An aeroplane registered in Bhutan, receiving its certificate of airworthiness for the first time on or after 1 January 1989, shall not commence a flight unless it is equipped with a serviceable Type I flight data recorder, as described in ICAO Annex 6, Part II, if the maximum certificated take-off mass of the aeroplane is over 27,000 kg or with a Type II flight data recorder, as described in Annex 6, Part II, if the maximum certificated take-off mass is over 5,700 kg, but not greater than 27,000 kg.

4.6.12.2 The flight data recorder installed in compliance with 4.6.12 should be constructed and located so as to provide maximum practical protection to the recorded data. It shall be capable of retaining the information recorded during the last 25 hours of its operation. The recorder shall not be switched off during flight time and to preserve the records it shall be de-activated upon completion of flight time following and accident or incident and not re-activated prior to removal of the records.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 4 - General Aviation

4.6.13 Cockpit Voice Recorder

4.6.13.1 An aeroplane registered in Bhutan which has a maximum certificated take-off mass of over 5,700 kg and which received its certificate of airworthiness for the first time on or after 1 January 1987, shall not commence a flight unless it is equipped with a serviceable cockpit voice recorder capable of recording the aural environment on the flight deck during flight time.

4.6.13.2 The cockpit voice recorder installed in compliance with 4.6.13 shall be constructed and located so as to provide maximum practical protection to the recorded data. It shall be capable of retaining the information recorded during at least the last 30 minutes of its operation, except that the voice recorder installed in an aeroplane of a maximum certificated take-off mass of over 5,700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1990, shall be capable of retaining the information recorded during at least the last two hours of its operation. The recorder shall not be switched off during flight time and to preserve the records, it shall be deactivated upon completion of flight time following an accident or incident and not re-activated prior to removal of the records.

4.7 Helicopter Flight Operations (reserved)

4.8 Helicopter performance

4.8.1 Regulations in this section shall be in accordance with BCAR-OPS 3 Subpart F and Appendices.

4.9 Balloon and paragliding operations

4.9.1 Section 66(1) of the Civil Aviation Act of Bhutan 2016 empowers BCAA to develop rules and regulations concerning balloons and Paragliding regulations.

4.10 Chartered Flights (reserved)

4.11 Maintenance

Maintenance shall be in accordance BCAR-M, BCAR 145 and applicable associated procedures for the time being in force.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 5 - Transport of Dangerous Goods by Air

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 5 -Transport of Dangerous Goods by Air

5.1 Applicability

5.1.1 The regulations in this section shall apply to the transport or the intended transport of dangerous goods in aircraft from, to, or through the territory under the jurisdiction of Bhutan or to their transport in aircraft operated by the holder of an Air Operator Certificate issued in Bhutan, wherever they may be. The regulations for Transport of Dangerous Goods by Air shall be in accordance with BCAR- 18.

5.2 Excluded Categories.

5.2.1 These Regulations do not apply to an aircraft flying in order to drop dangerous goods for the purposes of agriculture, horticulture or forestry and where the written permission of the HoA has been obtained.

5.3 General

5.3.1 Technical Instructions.

5.3.1.1 An aircraft shall not carry dangerous goods unless the relevant instructions in the currently applicable edition of the Technical Instructions have been complied with.

5.3.1.2 The BCAA shall take the necessary measures to achieve compliance with the detailed provisions contained in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284), approved and issued periodically in accordance with the procedure established by the ICAO Council. The BCAA shall also take the necessary-measures to achieve compliance with any amendment to the Technical Instructions-which may be published during the specified period of applicability of an edition of the Technical Instructions.

5.3.2 Prohibited Goods.

5.3.2.1 An aircraft shall not carry the following goods under any circumstances:

- a) Any substances or articles specifically mentioned by name in the Technical Instructions as being forbidden for transport by aircraft under any circumstances;
- b) Explosives which ignite or decompose when subjected to a temperature of 75 o C for 48 hours;
- c) Explosives containing both chlorates and ammonium salts;
- d) Explosives containing mixtures of chlorates with phosphorus;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 5 -Transport of Dangerous Goods by Air

- e) Solid explosives which are classified as extremely sensitive to mechanical shock;
- f) Liquid explosives which are classified as moderately sensitive to mechanical shock;
- g) Any substance, as presented for transport, which is liable to produce a dangerous evolution of heat or gas under the conditions normally encountered in air transport;
- h) Radioactive liquids which are pyrophoric; and
- i) Flammable solids and organic peroxides having, as tested, explosive properties and which are packed in such a way that the classification procedure would require the use of an explosives label as a subsidiary risk label.

5.3.3 Restricted Goods.

5.3.3.1 Unless specifically authorized by the HoA an aircraft shall not carry:

- a) Articles and substances that are identified in the Dangerous Goods List in the Technical Instructions, including those that are described as “not otherwise specified,” as being forbidden;
- b) Radioactive materials that are also explosive; and
- c) Infected live animals;

5.3.4 Permitted Goods.

5.3.4.1 Articles and substances which would otherwise be classed as dangerous goods may be transported other than in compliance with the provisions of these Regulations if:

- a) They are required to be aboard the aircraft for compliance with the applicable airworthiness requirements or operating regulations;
- b) They are replacements for the articles or substances described under a) and are transported in compliance with the applicable provisions of the Technical Instructions for such articles and substances; or
- c) They are intended for the personal use of passengers or crew members and the provisions of the Technical Instructions applicable to “Dangerous Goods Excepted” are complied with.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 5 -Transport of Dangerous Goods by Air

5.4 Responsibilities of a shipper

5.4.1 Classification and Packaging.

5.4.1.1 No person shall offer any package or over pack of dangerous goods for transport by air unless he has ensured that the dangerous goods are not forbidden for transport by air and are properly classified, packed, marked, labelled and accompanied by a properly executed dangerous goods transport document, as specified in ICAO Annex 18 and the latest edition of the ICAO Technical Instructions.

5.4.2 Transport Document.

5.4.2.1 The person offering dangerous goods for transport by air shall complete and sign in duplicate a transport document which contains the information. Each copy of the transport document shall bear a declaration signed by a person who offers dangerous goods for transport indicating that the dangerous goods are fully and accurately described by their proper shipping names and that they are classified, packed, marked, labelled, and in proper condition for transport by air.

5.4.3 Air Waybill.

5.4.3 The air waybill shall show clearly that the consignment contains dangerous goods as described on the accompanying dangerous goods transport document and, when applicable, that the consignment shall be loaded on cargo aircraft only.

5.4.4 Required Training.

5.4.4.1 A shipper offering dangerous goods for transport by air shall ensure that he and his employees or agents have been properly trained as specified in the Technical Instructions to handle such goods.

5.4.5 Responsibilities of Operator

5.4.5.1 An operator shall not accept dangerous goods for transport by Air:

- a) unless the dangerous goods are accompanied by a completed dangerous goods transport document, except where the Technical Instructions indicate that such a document is not required; and
- b) Until the package, overpack or freight container containing the dangerous goods has been inspected in accordance with acceptable procedures contained in the Technical Instructions.

5.4.5.2 An operator shall develop and use acceptance checklist as a aid to compliance with subsection 5.4.5.1.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 5 -Transport of Dangerous Goods by Air

5.4.5.3 Any hazardous contamination found on an aircraft as a result of leakage or damage to dangerous goods shall be removed without delay.

5.5 Loading restrictions

5.5.1 Carriage on the Flight Deck.

5.5.1.1 A package containing dangerous goods, except as provided for in 5.3.4 and except for those radioactive materials classified as “excepted radioactive materials” under the provisions of the ICAO Technical Instructions, shall not be carried on the flight deck of an aircraft or in a passenger compartment.

5.5.2 Relative Stowage Positions.

5.5.2.1 Packages containing dangerous goods which might react dangerously on contact with each other shall not be stowed in an aircraft next to each other or in such positions as will permit the substances to come into contact with each other in the event of a leakage.

5.5.3 Stowage in Proximity to Animals.

5.5.3.1 Substances marked as or known to be poisons or infectious substances in Class 6 of the classification of dangerous goods in the ICAO Technical Instructions, shall not be carried in the same compartment of an aircraft with animals, substances marked as or known to be foodstuffs, feeds or other edible substances intended for consumption by humans or animals, unless the poisons or infections substances and the foodstuffs or animals are loaded in separate unit load devices and are not adjacent to each other when stowed aboard the aircraft.

5.5.4 Radioactive Materials.

5.5.4.1 Packages of radioactive materials shall not be carried on aircraft unless they are stowed on board the aircraft in accordance with the appropriate separation distances tabulated in the ICAO Technical Instructions so as to be separated from persons, live animals and undeveloped photographic film.

5.5.5 Prevention of Damage.

5.5.5.1 An operator shall take such precautions as may be appropriate to protect dangerous goods from being damaged during loading and unloading, and during transport in an aircraft. An operator shall secure such goods in the aircraft in a manner which will prevent any movement during flight which would change the orientation of the packages and in the case of radioactive materials, shall secure them so that the appropriate separation distances tabulated in the ICAO Technical Instructions are maintained at all times.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 5 -Transport of Dangerous Goods by Air

5.5.6 Loading of Dangerous Goods.

5.5.6.1 Packages containing dangerous goods and bearing the "Cargo aircraft only" label shall, unless otherwise provided by the ICAO Technical Instructions, be loaded in the aircraft in such a manner that a member of the crew or other authorised person can see, handle, and, where size and mass permit, separate such packages from other cargo in flight.

5.6 Provision of Information

5.6.1 Information for Personnel.

5.6.1.1 Operators, shippers or other organisations involved in the transport of dangerous goods by air shall provide such information to their personnel as will enable them to carry out their responsibilities as detailed in the ICAO Technical Instructions and shall furnish instructions as to the action to be taken in the event of any emergency that might arise involving dangerous goods.

5.6.2 Information for Passengers.

5.6.2.1 An operator shall inform intending passengers in his aircraft of the types of goods which are forbidden for transport aboard an aircraft, either in checked baggage or in carry-on baggage.

5.6.3 Information for the Pilot-in-Command.

5.6.3.1 The pilot-in-command of an aircraft in which dangerous goods are to be carried shall be provided as early as practicable before departure with the written information specified in the ICAO Technical Instructions.

5.6.4 Information in the Event of an Accident.

5.6.4.1 The operator of an aircraft which is involved in an aircraft accident while carrying dangerous goods shall, as soon as possible after the accident, inform the appropriate authority in the State in which the aircraft accident occurred of the dangerous goods carried, together with their proper shipping names, class, the subsidiary risks for which labels are required by the ICAO Technical Instructions, the compatibility group for items described in the ICAO Technical Instructions as Class 1 - Explosives, and shall state the quantity of dangerous goods together with their location on the aircraft.

5.7 Penalties

5.7.1 The BCAA shall take such measures as it may deem appropriate to achieve compliance with this regulation including the prescription of appropriate penalties for violations.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 5 -Transport of Dangerous Goods by Air

5.7.2 The BCAA shall take appropriate action to achieve compliance with this Section, including the prescription of appropriate penalties for violations, when information about a violation is received from another ICAO Member State, such as when consignment of dangerous goods is found not to comply with the requirements of the Technical Instructions on arrival in a ICAO Member State and that State reports the matter to the BCAA.

5.7.3 Penalties shall be dealt as per Enforcement Policy and Procedure Manual.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 6 - Investigation of Accidents

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 6-Aircraft Accident and Incident Investigation

6.1 Investigation of Accidents

- 6.1.1 According to Section 6(5) of the Civil Aviation Act of Bhutan 2016, an Accident Investigation Unit shall be established under the Ministry that is independent of Bhutan Civil Aviation Authority to undertake Aircraft Accident investigation in line with Annex 13 and other relevant annexes of Chicago Convention.
- 6.1.2 The regulation for this section shall be in accordance with Aircraft Accident and Incident Investigation Regulation developed by AIG Unit under the Ministry.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 7 - Air Traffic Management/Air Navigation Services (ATM/ANS)

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

7.1 Subject Matter

7.1.1 This Regulation lays down common requirements for:

- a) the provision of air traffic management and air navigation services ('ATM/ANS') and other air traffic management network functions ('ATM network functions') for general air traffic, in particular for the legal or natural persons providing those services and functions;
- b) the Authority, and the qualified entities acting on its behalf, which exercise certification, oversight and enforcement tasks in respect of the providers of the services and functions referred to in clause a).

7.2 Definitions

7.2.1 For the purposes of provisions under this section, in addition to the definitions in Section 1, the following definitions shall apply:

- a) the definitions in Section 157 of Civil Aviation Act of Bhutan and Chapter 1 of BCAR – ANS/ATM;
- b) 'service provider' means any legal or natural person providing air traffic management functions, air navigation services and services consisting in the origination and processing of data and formatting and delivering data for purpose of safety-critical air navigation, either individually or bundled or general air traffic.

7.3 Provision of ATM/ANS and ATM network functions

7.3.1 The Authority shall ensure that the appropriate ATM/ANS and ATM network functions are provided in accordance with this Regulation in a manner that facilitates general air traffic, while taking into account safety considerations and traffic requirements.

7.3.2 When the Authority adopts additional provisions to complement this Regulation, those provisions shall follow the standards and recommended practices set by the Chicago Convention. Where use is made of the provision of the Article 38 of the Chicago Convention the Authority shall notify the International Civil Aviation Organization of the additional provisions.

7.3.3 The Authority shall publish, in accordance with the Chicago Convention, those additional provisions through aeronautical information publications.

7.3.4 Where the Authority decides to organize the provision of certain specific air traffic services in a competitive environment, the Authority shall take all appropriate measures to ensure that the providers of those services shall neither engage in conduct that would have as its object or effect the prevention, restriction or distortion of competition, nor shall they engage in conduct that amounts to an abuse of a dominant position, in accordance with applicable national law.

7.4 Authority for certification, oversight and enforcement

7.4.1 The Authority responsible for the issuing of certificates to service providers, for the acknowledgment of receipts of declarations made by providers of flight information services referred to in chapter 7 where relevant, and for the oversight and enforcement in respect of service providers shall be the Authority referred to in Chapter III of Civil Aviation Act of Bhutan.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- 7.4.2 The Authority referred to in paragraph 1 shall comply with the requirements laid down in Annex II.
- 7.4.3 [Reserved]
- 7.4.4 [Reserved]
- 7.4.5 When exercising their certification, oversight and enforcement tasks under this Regulation, the Authority shall be independent of any service provider. That independence shall be ensured by adequate separation, at least at the functional level, between the Authority and the service providers. The Authority shall ensure that they exercise their powers impartially and transparently.
- 7.4.6 The Authority shall ensure not to allow their personnel to be involved in the exercise of the certification, oversight and enforcement tasks under this Regulation where there are indications that such involvement could result, directly or indirectly, in conflict of interest, in particular relating to family or financial interests.
- 7.4.7 [Reserved]
- 7.4.8 The Head of the Authority shall determine the necessary resources and capabilities required by the Authority for the exercise of their tasks in accordance with Section (13) of Chapter 3 of Civil Aviation Act of Bhutan 2016, taking into account all relevant factors, including assessment carried out to determine the resources needed for exercise of their tasks under this regulation.
- 7.5 Powers of the Authority referred to in 7.4**
- 7.5.1 The Authority shall, where required for the exercise of their certification, oversight and enforcement tasks under this Regulation, be empowered to:
- a) Require the service providers subject to their oversight to provide all necessary information;
 - b) Require any representative, manager or other member of the personnel of those service providers to provide oral explanations on any fact, document, object, procedure or other subject matter relevant to the oversight of the service provider;
 - c) Enter any premises and land, including operating sites, and means of transport of those service providers;
 - d) Examine, copy or make extracts from any document, record or data held by or accessible to those service providers, irrespective of the medium on which the information in question is stored;
 - e) Carry out audits, assessments, investigations and inspections of those service providers.
- 7.5.2 The Authority shall, where required for the exercise of their certification, oversight and enforcement tasks under this Regulation, also be empowered to exercise the powers set out in paragraph 1 in relation to the contracted organizations subject to the service providers' oversight, as referred to in point ATM/ANS.OR.B.015 of BCAR -ATM/ANS Chapter III.
- 7.5.3 The powers provided for in paragraphs 1 and 2 shall be exercised in compliance with Civil Aviation Act of Bhutan and other relevant National law, with due regard for the need to ensure the effective exercise of those powers and for the rights and legitimate interests of the service provider and any third persons concerned. When exercising the powers provided for in paragraphs 1 and 2, the Authority shall ensure

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

that the members of its staff and, where relevant, any other expert participating in the activities in question are duly authorized.

- 7.5.4 The Authority shall take or initiate any appropriate enforcement measure necessary to ensure that the service providers to which they issued a certificate or, where relevant, which made a declaration to them, comply and continue to comply with the requirements of this Regulation.

7.6 Service providers

- 7.6.1 Service providers shall be granted a certificate and be entitled to exercise the privileges granted within the scope of that certificate, and shall comply and continue to comply with the following requirements:

- a) for all service providers, the requirements laid down in Chapter III (Part-ATM/ANS.OR), Subparts A and B, and in Chapter XIII (Part-PERS) of BCAR-ATM/ANS;
- b) for service providers other than providers of air traffic services, in addition to the requirements of point (a), the requirements laid down in Chapter III (Part-ATM/ANS.OR), Subpart C of BCAR-ATM/ANS;
- c) for providers of air navigation services, providers of air traffic flow management and the Network Manager, in addition to the requirements of point (a), the requirements laid down in Chapter III (Part-ATM/ANS.OR), Subpart D of BCAR-ATM/ANS;
- d) for providers of air traffic services, in addition to the requirements of points (a) and (c), the requirements laid down in Chapter IV (Part-ATS) of BCAR – ATM/ANS;
- e) for providers of meteorological services, in addition to the requirements of points (a), (b) and (c), the requirements laid down in Chapter V (Part-MET) of BCAR-ATM/ANS;
- f) for providers of aeronautical information services, in addition to the requirements of points (a), (b) and (c), the requirements laid down in Annex VI (Part-AIS) of BCAR-ATM/ANS;
- g) [Reserved];
- h) for providers of communication, navigation or surveillance services, in addition to the requirements of points (a), (b) and (c), the requirements laid down in Chapter VIII (Part-CNS) of BCAR-ATM/ANS;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

ANNEX II— PART-ATM/ANS.AR

REQUIREMENTS FOR AUTHORITY — OVERSIGHT OF SERVICES AND OTHER ATM NETWORK FUNCTIONS

SUBPART A — GENERAL REQUIREMENTS

ATM/ANS.AR.A.001 Scope

This Annex establishes the requirements for the administration and management systems of the Authority responsible for certification, oversight and enforcement in respect of the application of the requirements set out in Chapter III to XIII of BCAR-ATM/ANS by the service providers in accordance with Section 7.6.

ATM/ANS.AR.A.005 Certification, oversight and enforcement tasks

- a) The Authority shall exercise certification, oversight and enforcement tasks in respect of the application of the requirements applicable to service providers, monitor the safe provision of their services and verify that the applicable requirements are met.
- b) The Authority shall identify and exercise the responsibilities for certification, oversight and enforcement in a manner which ensures that:
 - (1) Specific points of responsibility exist to implement each provision of this Regulation;
 - (2) They are aware of the safety oversight mechanisms and their results;
 - (3) Relevant information exchange is ensured with other relevant authorities.

ATM/ANS.AR.A.010 Certification, oversight and enforcement documentation

The Authority shall make available the relevant legislative acts, standards, rules, technical publications and related documents to its personnel in order to perform their tasks and to discharge their responsibilities.

ATM/ANS.AR.A.015 Means of compliance

- (a) The Agency shall develop acceptable means of compliance (AMC) that may be used to establish compliance with the requirements of this Regulation. When AMC are complied with, the applicable requirements of this Regulation shall be deemed to have been met.
- (b) Alternative means of compliance (AltMOC) may be used to establish compliance with the requirements of this Regulation.
- (c) The Authority shall establish a system to consistently evaluate that all AltMOC used by itself or by the service providers under its oversight allow the establishment of compliance with the requirements of this Regulation.
- (d) The Authority shall evaluate all AltMOC proposed by a service provider in accordance with point ATM/ANS.OR.A.020 of BCAR -ATM/ANS by analysing the documentation provided and, if considered necessary, conducting an inspection of the service provider.
- (e) When the Authority finds that the AltMOC are sufficient to ensure compliance with the applicable requirements of this Regulation it shall without undue delay:

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (1) Notify the applicant that the AltMOC may be implemented and, if applicable, amend the certificate of the applicant accordingly;
 - (2) Notify the Agency of their content, including copies of all relevant documentation;
 - (3) Inform other Member States about the AltMOC that were accepted.
- (f) When the Authority itself uses AltMOC to achieve compliance with the applicable requirements of this Regulation, it shall:
1. make them available to all service providers under its oversight;
 2. [Reserved]

ATM/ANS.AR.A.020 Information to the Board

[Reserved]

ATM/ANS.AR.A.025 Immediate reaction to safety problem

- (a) The Authority shall implement a system to appropriately collect, analyse, and disseminate safety information.
- (b) [Reserved]
- (c) Upon receiving the information referred to in points (a) and (b), the Authority shall take adequate measures to address the safety problem, including the issuing of safety directives in accordance with point ATM/ANS.AR.A.030.
- (d) Measures taken under point (c) shall immediately be notified to the service providers concerned to comply with them, in accordance with point ATM/ANS.OR.A.060.

ATM/ANS.AR.A.030 Safety directives

- (a) The Authority shall issue a safety directive when it has determined the existence of an unsafe condition in a functional system requiring immediate action.
- (b) The safety directive shall be forwarded to the service providers concerned and contain, as a minimum, the following information:
 - (1) the identification of the unsafe condition;
 - (2) the identification of the affected functional system;
 - (3) the actions required and their rationale;
 - (4) the time limit for completing the actions required;
 - (5) its date of entry into force.
- (c) The Authority shall forward a copy of the safety directive any other authorities concerned within one month from its issuance.
- (d) The Authority shall verify the compliance of service providers with the applicable safety directives.

SUBPART B — MANAGEMENT (ATM/ANS.AR.B)

ATM/ANS.AR.B.001 Management system

- (a) The Authority shall establish and maintain a management system, including, as a minimum, the following elements:

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (1) Documented policies and procedures to describe its organisation, means and methods as necessary for the exercise of its certification, oversight and enforcement tasks under this Regulation. The procedures shall be kept up to date and serve as the basic working documents within that Authority for all related tasks;
 - (2) A sufficient number of personnel, including inspectors, to perform its tasks and discharge its responsibilities under this Regulation. Such personnel shall be qualified to perform their allocated tasks and have the necessary knowledge, experience, initial, on-the-job and recurrent training to ensure continuing competence. A system shall be in place to plan the availability of personnel, in order to ensure the proper completion of all related tasks;
 - (3) Adequate facilities and office accommodation to perform those allocated tasks;
 - (4) A process to monitor compliance of the management system with the relevant requirements and adequacy of the procedures, including the establishment of an internal audit process and a safety risk management process. Compliance monitoring shall include a feedback system of audit findings to the senior management of the Authority to ensure implementation of corrective actions as necessary;
 - (5) A person or group of persons ultimately responsible to the senior management of the Authority for the compliance monitoring function.
- (b) The Authority shall, for each field of activity included in the management system, appoint one or more persons with the overall responsibility for the management of the relevant task(s).

AMC1 ATM/ANS.AR.B.001 (a)(2) Management system

QUALIFIED PERSONNEL


The Authority should:

- (a) define and document the education, training, technical and operational knowledge, experience and qualifications relevant to the duties of each position involved in oversight activities within their structure
- (b) ensure specific training for those involved in oversight activities within their structure; and
- (c) ensure that personnel designated to conduct safety regulatory audits, including auditing personnel from qualified entities, meet specific qualification criteria defined by the Authority. The criteria should address:
 - (1) the knowledge and understanding of the requirements related to the services provision in ATM/ANS and other ATM network functions against which safety regulatory audits may be performed;
 - (2) the use of assessment techniques;
 - (3) the skills required for managing an audit; and
 - (4) the demonstration of competence of auditors through evaluation or other acceptable means.

AMC2 ATM/ANS.AR.B.001 (a)(2) Management system

TRAINING PROGRAMME AND RECURRENT TRAINING

- (a) The Authority should establish a training programme for its personnel, including its inspectors for the oversight of services provision in ATM/ANS and other ATM network functions, and a plan for its implementation. The training programme should include, as appropriate to the role, current knowledge, experience and skills of the personnel, at least the following:



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (1) organisation and structure of the aviation legislation;
 - (2) the Chicago Convention, relevant ICAO annexes and documents, the applicable requirements of BANRs and BCARs, including related acceptable means of compliance (AMC), certification specifications (CSs) and guidance material (GM), as well as assessment methodology of the alternative means of compliance and the applicable national legislation;
 - (3) the applicable requirements and procedures; and
 - (4) areas of particular interest.
- (b) The training programme and the training plan should be updated, as needed, to reflect at least changes in aviation legislation and industry. The training programme should also cover specific needs of the personnel and the Authority.
- (c) The Authority should ensure that its personnel, including its inspectors for the oversight of services provision in ATM/ANS and other ATM network functions, undergo recurrent training at regular intervals as defined by the Authority or whenever deemed necessary in order to keep being up to date.

AMC1 ATM/ANS.AR.B.001 (a)(4) Management system

COMPLIANCE MONITORING PROCESS

The formal process to monitor the compliance of the management system with the relevant requirements, and the adequacy of the procedures should:

- (a) include a feedback system of audit findings to ensure implementation of corrective actions as necessary; and
- (b) be the responsibility of a person or group of persons who should be responsible to the senior management of the Authority and who perform(s) compliance monitoring activities with functional independence from the units/departments (s)he (they) oversees (oversee) and with direct access to the senior management of the Authority and to appropriate management for safety matters.

ATM/ANS.AR.B.005 Allocation of tasks to qualified entities

[Reserved]

ATM/ANS.AR.B.010 Changes in the management system

- (a) The Authority shall have a system in place to identify changes that affect its capability to perform its tasks and discharge its responsibilities under this Regulation. This system shall enable it to take action, as appropriate, to ensure that the management system remains adequate and effective.
- (b) The Authority shall update its management system to reflect any change to this Regulation in a timely manner, so as to ensure effective implementation.

ATM/ANS.AR.B.015 Record-keeping

- (a) The Authority shall establish a system of record-keeping providing for adequate storage, accessibility, and reliable traceability of:
 - (1) the management system's documented policies and procedures;
 - (2) training, qualification, and authorisation of personnel as required by point ATM/ANS.AR.B.001(a)(2);

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (3) the allocation of tasks, covering the elements required by point ATM/ANS.AR.B.005, as well as the details of tasks allocated;
 - (4) certification and/or declaration processes;
 - (5) designations of air traffic services and meteorological services providers, as appropriate;
 - (6) certification and oversight of service providers exercising activities within the territory of the Member State, but certified by the Authority of another Member State or the Agency, as agreed between those authorities;
 - (7) the evaluation and notification to the Agency of AltMOC proposed by service providers and the assessment of AltMOC used by the Authority itself;
 - (8) compliance of service providers with the applicable requirements of this Regulation after the issuance of the certificate or, where relevant, submission of a declaration, including the reports of all audits, covering findings, corrective actions, and date of action closure, and observations as well as other safety-related records;
 - (9) enforcement measures taken;
 - (10) safety information, safety directives and follow-up measures;
- (b) The Authority shall maintain a list of all service provider certificates issued and declarations received.
- (c) All records shall be kept for a minimum period of 5 years after the certificate ceases to be valid or the declaration is withdrawn, subject to the applicable data protection law.

AMC1 ATM/ANS.AR.B.015 (a)(2) Record-keeping

DURATION OF RETENTION PERIOD OF RECORDS

Records related to the training and qualification of the personnel of the Authority should be kept until the end of their employment.

AMC1 ATM/ANS.AR.B.015 (a)(8) Record-keeping

RECORD-KEEPING FOR FUNCTIONAL SYSTEMS CHANGE MANAGEMENT PROCEDURES

The Authority should keep a record of all the change management procedures, modifications and deviations it has approved in accordance with ATM/ANS.AR.C.030 (a) and those that have been rejected, together with a rationale. The Authority should be able to cross-reference them to the requirement of the associated requirement in the Regulation that they intend to comply with.

SUBPART C — OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ATM/ANS.AR.C)

ATM/ANS.AR.C.001 Monitoring of safety performance

- (a) The Authority shall regularly monitor and assess the safety performance of the service providers under their oversight.
- (b) The Authority shall use the results of the monitoring of safety performance in particular within their risk-based oversight.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

ATM/ANS.AR.C.005 Certification, declaration, and verification of service providers' compliance with the requirements

- (a) Within the framework of point ATM/ANS.AR.B.001(a)(1), the Authority shall establish a process in order to verify:
 - (1) service providers' compliance with the applicable requirements set out in Chapter III to XIII of BCAR – ATM/ANS, and any applicable conditions attached to the certificate before the issue of that certificate. The certificate shall be issued in accordance with Appendix 1 to this Annex;
 - (2) [Reserved]
 - (3) continued compliance with the applicable requirements of the service providers under its oversight;
 - (4) implementation of safety objectives, safety requirements and other safety-related conditions identified in declarations of verification of systems, including any relevant declaration of conformity or suitability for use of constituents of systems issued in accordance with national and regional air navigation plans;
 - (5) the implementation of safety directives, corrective actions and enforcement measures.
- (b) The process referred to in point (a) shall:
 - (1) be based on documented procedures;
 - (2) be supported by documentation specifically intended to provide its personnel with guidance to perform their tasks related to certification, oversight and enforcement;
 - (3) provide the organisation concerned with an indication of the results of the certification, oversight and enforcement activity;
 - (4) be based on audits, reviews and inspections conducted by the Authority;
 - (5) with regard to certified service providers, provide the Authority with the evidence needed to support further action, including measures referred to in relevant regulations in situations where requirements are not complied with;
 - (6) with regard to service providers making declarations, provide the Authority with the evidence to take, if appropriate, remedial action which may include enforcement actions, including, where appropriate, under national law.

ATM/ANS.AR.C.010 Oversight

- (a) The Authority, or qualified entities acting on its behalf, shall conduct audits, in accordance with Section 7.5.
- (b) The audits referred to in point (a) shall:
 - (1) provide the Authority with evidence of compliance with the applicable requirements and with the implementing arrangements;
 - (2) be independent of any internal auditing activities undertaken by the service provider;
 - (3) cover complete implementing arrangements or elements thereof, and processes or services;
 - (4) determine whether:
 - (i) the implementing arrangements comply with the applicable requirements;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (ii) the actions taken comply with the implementing arrangements and the applicable requirements;
 - (iii) the results of actions taken match the results expected from the implementing arrangements.
- (c) The Authority shall, on the basis of the evidence at its disposal, monitor the continuous compliance with the applicable requirements of this Regulation of the service providers under its oversight.

AMC1 ATM/ANS.AR.C.010 (a) Oversight

AUDITS

The audits should include oversight of changes to the functional system in order to:

- (a) verify that changes made to the functional system:
 - (1) comply with ATM/ANS.OR.A.045 of BCAR-ATM/ANS;
 - (2) have been managed in accordance with the procedures identified in ATM/ANS.OR.B.010(a) of BCAR-ATM/ANS that have been approved; and
 - (3) are being verified against the monitoring criteria that were identified in the assurance argument as a result of complying with ATM/ANS.OR.C.005(b)(2) or ATS.OR.205(b)(6) of BCAR-ATM/ANS, as appropriate; and
- (b) verify that if, as a result of the monitoring referred to in (a)(3), the argument, referred to in ATS.OR.205(a)(2) and ATM/ANS.OR.C.005(a)(2) of BCAR-ATM/ANS, is found to be incomplete and/or incorrect, then the service provider has initiated a change or has revised the argument such that the inferences or evidence are now sufficient to justify the claim.

ATM/ANS.AR.C.015 Oversight programme

- (a) The Authority shall establish and update annually an oversight programme taking into account the specific nature of the service providers, the complexity of their activities, the results of past certification and/or oversight activities and shall be based on the assessment of associated risks. It shall include audits, which shall:
 - (1) cover all the areas of potential safety concern, with a focus on those areas where problems have been identified;
 - (2) cover all the service providers under the supervision of the Authority;
 - (3) cover the means implemented by the service provider to ensure the competency of personnel;
 - (4) ensure that audits are conducted in a manner commensurate with the level of the risk posed by the service provider operations and services provided; and
 - (5) ensure that for service providers under its supervision, an oversight planning cycle not exceeding 24 months is applied.

The oversight planning cycle may be reduced if there is evidence that the safety performance of the service provider has decreased.

For a service provider certified by the Authority, the oversight planning cycle may be extended to a maximum of 36 months if the Authority has established that, during the previous 24 months:



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (i) the service provider has demonstrated an effective identification of aviation safety hazards and management of associated risks;
- (ii) the service provider has continuously demonstrated compliance with the change management requirements under points ATM/ANS.OR.A.040 and ATM/ANS.OR.A.045 of BCAR-ATM/ANS;
- (iii) no level 1 findings have been issued;
- (iv) all corrective actions have been implemented within the time period accepted or extended by the Authority as defined in point ATM/ANS.AR.C.050.

If, in addition to the above, the service provider has established an effective continuous reporting system to the Authority on the safety performance and regulatory compliance of the service provider, which has been approved by the Authority, the oversight planning cycle may be extended to a maximum of 48 months;

- (6) ensure follow-up of the implementation of corrective actions;
 - (7) be subject to consultation with the service providers concerned and notification thereafter;
 - (8) indicate the envisaged interval of the inspections of the different sites, if any.
- (b) The Authority may decide to modify the objectives and the scope of pre-planned audits, including documentary reviews and additional audits, wherever that need arises.
 - (c) The Authority shall decide which arrangements, elements, services, functions, physical locations, and activities are to be audited within a specified time frame.
 - (d) Audit observations and findings issued in accordance with point ATM/ANS.AR.C.050 shall be documented. The latter shall be supported by evidence, and identified in terms of the applicable requirements and their implementing arrangements against which the audit has been conducted.
 - (e) An audit report, including the details of the findings and observations, shall be drawn up and communicated to the service provider concerned.

AMC1 ATM/ANS.AR.C.015 Oversight programme

GENERAL

- (a) When establishing an oversight programme appropriate to each provider, the Authority should take into account the safety performance of the service provider to be audited. Inspectors for the oversight of services provision and other ATM network functions should work in accordance with the schedule provided to them.
- (b) Having regard to the performance of service providers, the Authority may vary the frequency of the audits or inspections.
- (c) When defining the oversight programme, the Authority should assess the risks related to the activity of each service provider, certified or declared, or the Network Manager, and adapt the audits and inspections to the level of risk identified.

AMC1 ATM/ANS.AR.C.015 (a) Oversight programme

SPECIFIC NATURE AND COMPLEXITY OF THE ORGANISATION

- (a) When determining the oversight programme for a service provider, the Authority should consider in particular the following elements, as applicable:

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (1) the implementation by the service provider of industry standards, directly relevant to the organization's activity subject to this Regulation;
 - (2) the procedure applied for and scope of changes not requiring prior approval in accordance with ATM/ANS.OR.A.040(b); and
 - (3) specific procedures implemented by the service provider related to any alternative means of compliance used.
- (b) For the purpose of assessing the complexity of an organization's management system, AMC1 ATM/ANS.OR.B.005 (e) should be used.

ATM/ANS.AR.C.020 Issue of certificates

- (a) Following the process laid down in point ATM/ANS.AR.C.005 (a), upon receiving an application for the issuance of a certificate to a service provider, the Authority shall verify the service provider's compliance with the applicable requirements of this Regulation.
- (b) The Authority may require any audits, inspections or assessments it finds necessary before issuing the certificate.
- (c) The certificate shall be issued for a duration specified by the Authority. The privileges of the activities that the service provider is approved to conduct shall be specified in the service provision conditions attached to the certificate.
- (d) The certificate shall not be issued where a level 1 finding remains open. In exceptional circumstances, finding(s), other than level 1, shall be assessed and mitigated as necessary by the service provider and a corrective action plan for closing the finding(s) shall be approved by the Authority prior to the certificate being issued.

ATM/ANS.AR.C.025 Changes

- (a) Upon receiving a notification for a change in accordance with point ATM/ANS.OR.A.045 of BCAR-ATM/ANS, the Authority shall comply with points ATM/ANS.AR.C.030, ATM/ANS.AR.C.035 and ATM/ANS.AR.C.040.
- (b) Upon receiving a notification for a change in accordance with point ATM/ANS.OR.A.040(a)(2) of BCAR-ATM/ANS that requires prior approval, the Authority shall:
 - (1) verify the service provider's compliance with the applicable requirements before issuing the change approval;
 - (2) take immediate appropriate action, without prejudice to any additional enforcement measures, when the service provider implements changes requiring prior approval without having received Authority approval referred to in point (1).
- (c) To enable a service provider to implement changes to its management system and/or safety management system, as applicable, without prior approval in accordance with point ATM/ANS.OR.A.040 (b) of BCAR-ATM/ANS, the Authority shall approve a procedure defining the scope of such changes and describing how such changes will be notified and managed. In the continuous oversight process, the Authority shall assess the information provided in the notification to verify whether the actions taken comply with the approved procedures and applicable requirements. In case of any non-compliance, the Authority shall:
 - (1) notify the service provider of the non-compliance and request further changes;
 - (2) in case of level 1 and level 2 findings, act in accordance with point ATM/ANS.AR.C.050.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

AMC1 ATM/ANS.AR.C.025 (b) Changes

CHANGES REQUIRING PRIOR APPROVAL

- (a) Upon receipt of a notification for a proposed change that requires prior approval, the Authority should:
 - (1) formally acknowledge the receipt of the notification in writing within 10 working days;
 - (2) assess the proposed change in relation to the service provider's certificate or the conditions attached or management system of it, and the applicable requirements of Part-ATM/ANS.OR of BCAR-ATM/ANS, as well as any other applicable requirements within 30 working days after the receipt of all the evidence supporting the proposed change;
 - (3) assess the actions proposed by the service provider in order to show compliance; and
 - (4) notify the service provider of its approval/rejection without delay.
- (b) A simple management system documentation system status sheet should be maintained, which contains information on when an amendment was received by the Authority and when it was approved, if applicable.
- (c) The Authority should, in due time, verify the compliance of the service provider and, depending on the change, examine the need for prescribing any condition for the operation of it during the change.
- (d) For changes requiring prior approval, the Authority may conduct an audit of the service provider in order to verify the service provider's compliance with the applicable requirements.
- (e) When notifying, the Authority should also inform the service provider of the right of appeal, as exists under the applicable national legislation.

AMC2 ATM/ANS.AR.C.025(b) Changes

CHANGE OF NAME OF THE SERVICE PROVIDER

Upon receipt of the notification and the relevant parts of the service provider's documentation as required by Part-ATM/ANS.OR of BCAR-ATM/ANS, the Authority should reissue the certificate.

AMC1 ATM/ANS.AR.C.025(c) Changes

CHANGES NOT REQUIRING PRIOR APPROVAL

- (a) When the service provider submits the name of the nominee for the nominated persons in accordance with AMC2 ATM/ANS.OR.A.040 (b) of BCAR-ATM/ANS, the Authority should consider his or her qualification.
- (b) Upon receipt of a notification for a proposed change that does not require prior approval by the Authority, it should acknowledge receipt of the notification in writing within 10 working days from receipt unless it is not specified under the relevant national legislation.

ATM/ANS.AR.C.030 Approval of change management procedures for functional systems

- (a) The Authority shall review:
 - (1) change management procedures for functional systems or any material modification to those procedures submitted by the service provider in accordance with point ATM/ANS.OR.B.010(b) of BCAR-ATM/ANS;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (2) any deviation from the procedures referred to in point (1) for a particular change, when requested by a service provider in accordance with point ATM/ANS.OR.B.010(c)(1) of BCAR-ATM/ANS.

(b) The Authority shall approve the procedures, modifications and deviations referred to in point (a) when it has determined that they are necessary and sufficient for the service provider to demonstrate compliance with points ATM/ANS.OR.A.045, ATM/ANS.OR.C.005, ATS.OR.205, and ATS.OR.210, of BCAR-ATM/ANS as applicable.

AMC1 ATM/ANS.AR.C.030 (a) Approval of change management procedures for functional systems

MEANS AND METHOD OF SUBMITTING PROCEDURES

The Authority should agree with the service provider on the means and method of submitting the procedures, modifications and deviations referred to in ATM/ANS.AR.C.030(a). Until an agreement is reached, the Authority will prescribe the means and method of submission.

AMC1 ATM/ANS.AR.C.030 (b) Approval of change management procedures for functional systems

APPROVAL OF PROCEDURES

- (a) When approving the change management procedures for functional systems as per ATM/ANS.OR.B.010 of BCAR-ATM/ANS, the Authority should perform the following:
- (1) check that the procedures used by a service provider to manage changes cover the life cycle of a change as defined in ATM/ANS.OR.C.005(a)(1) or ATS.OR.205(a)(1) of BCAR-ATM/ANS;
 - (2) use the compliance matrix provided by the service provider (referred to in AMC1 ATM/ANS.OR.B.010(a) of BCAR-ATM/ANS), when reviewing the content of the procedures, modifications and/or deviations referred to in ATM/ANS.AR.C.030(a); as part of the oversight activity, the Authority should check that the compliance matrix covers all the aforementioned requirements.
 - (3) check that the procedures make mandatory provisions that require actions to be undertaken and all required evidence to be produced to comply with requirements laid down in ATM/ANS.OR.A.045, ATM/ANS.OR.C.005, ATS.OR.205 and ATS.OR.210 of BCAR-ATM/ANS;
 - (4) check that the procedures identify the roles and responsibilities of the service provider in the change management processes;
 - (5) check that the procedures state that it is not allowed to use new, modified or deviating change management procedures until approval is granted; and
 - (6) check that the procedures state that any change selected for review must not enter into operational service before the approval is granted.
- (b) The Authority should provide a response to the service provider's notification of change referred to in ATM/ANS.OR.A.045 (a) of BCAR-ATM/ANS without undue delay.

ATM/ANS.AR.C.035 Decision to review a notified change to the functional system

- (a) Upon receipt of a notification in accordance with point ATM/ANS.OR.A.045(a)(1) of BCAR-ATM/ANS, or upon receipt of modified information in accordance with point



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

ATM/ANS.OR.A.045(b) of BCAR-ATM/ANS, the Authority shall make a decision on whether to review the change or not. The Authority shall request any additional information needed from the service provider to support this decision.

- (b) The Authority shall determine the need for a review based on specific, valid and documented criteria that, as a minimum, ensure that the notified change is reviewed if the combination of the likelihood of the argument being complex or unfamiliar to the service provider and the severity of the possible consequences of the change is significant.
- (c) When the Authority decides the need for a review based on other risk based criteria in addition to point (b), these criteria shall be specific, valid and documented.
- (d) The Authority shall inform the service provider of its decision to review a notified change to a functional system and provide the associated rationale to the service provider upon request.

AMC1 ATM/ANS.AR.C.035 (a) Decision to review a notified change to the functional system

MEANS AND METHOD OF SUBMITTING NOTIFICATION OF CHANGES TO FUNCTIONAL SYSTEMS

The Authority should agree with the service provider on the means and method of submitting the notification of changes and additional information referred to in ATM/ANS.OR.A.045 (a) of BCAR-ATM/ANS. Until an agreement is reached, the Authority will prescribe the means of submission.

ATM/ANS.AR.C.040 Review of a notified change to the functional system

- (a) When the Authority reviews the argument for a notified change, it shall:
 - (1) assess the validity of the argument presented with respect to point ATM/ANS.OR.C.005(a)(2) or ATS.OR.205(a)(2) of BCAR-ATM/ANS;
 - (2) coordinate its activities with other Authority whenever necessary.
- (b) The Authority shall, alternatively:
 - (1) approve the argument referred to in point (a)(1), with conditions where applicable, when it is shown to be valid and so inform the service provider,
 - (2) reject the argument referred to in point (a)(1) and inform the service provider together with a supporting rationale

ATM/ANS.AR.C.045 Declarations of flight information services providers

- (a) Upon receiving a declaration from a provider of flight information services intending to provide such services, the Authority shall verify that the declaration contains all the information required by point ATM/ANS.OR.A.015 of BCAR-ATM/ANS and shall acknowledge receipt of the declaration to that service provider.
- (b) If the declaration does not contain the required information, or contains information that indicates non-compliance with the applicable requirements, the Authority shall notify the provider of flight information services concerned about the non-compliance and request further information. If necessary, the Authority shall carry out an audit of the provider of flight information services. If the non-compliance is confirmed, the Authority shall take action provided for in point ATM/ANS.AR.C.050.
- (c) The Authority shall keep a register of the declarations of providers of flight information services which were made to it in accordance with this Regulation.

ATM/ANS.AR.C.050 Findings, corrective actions, and enforcement measures

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (a) The Authority shall have a system to analyze findings for their safety significance and decide on enforcement measures on the basis of the safety risk posed by the service provider's non-compliance.
- (b) In circumstances where no or very low additional safety risk would be present with immediate appropriate mitigation measures, the Authority may accept the provision of services to ensure continuity of service whilst corrective actions are being taken.
- (c) A level 1 finding shall be issued by the Authority when any serious non-compliance is detected with the applicable requirements of BANRs and BCARs, with the service provider's procedures and manuals, with the terms of conditions of certificate or certificate, with the designation act, if applicable, or with the content of a declaration which poses a significant risk to flight safety or otherwise calls into question the service provider's capability to continue operations.

Level 1 finding shall include but not be limited to:

- (1) promulgating operational procedures and/or providing a service in a way which introduces a significant risk to flight safety;
 - (2) obtaining or maintaining the validity of the service provider's certificate by falsification of submitted documentary evidence;
 - (3) evidence of malpractice or fraudulent use of the service provider's certificate;
 - (4) the lack of an accountable manager.
- (d) A level 2 finding shall be issued by the Authority when any other non-compliance is detected with the applicable requirements of BANRs and BCARs, with the service provider's procedures and manuals or with the terms of conditions or certificate, or with the content of a declaration.
 - (e) When a finding is detected, during oversight or by any other means, the Authority shall, without prejudice to any additional action required this Regulation, communicate the finding to the service provider in writing and require corrective action to address the non-compliance(s) identified.
 - (1) In the case of level 1 findings, the Authority shall take immediate and appropriate action, and may, if appropriate, limit, suspend or revoke in whole or in part the certificate while ensuring the continuity of services provided that safety is not compromised. The measure taken shall depend upon the extent of the finding and shall remain until successful corrective action has been taken by the service provider.
 - (2) In the case of level 2 findings, the Authority shall:
 - (i) grant the service provider a corrective action implementation period included in an action plan appropriate to the nature of the finding;
 - (ii) assess the corrective action and implementation plan proposed by the service provider and, if the assessment concludes that they are sufficient to address the non-compliance(s), accept them.
 - (3) In the case of level 2 findings, where the service provider fails to submit a corrective action plan that is acceptable to the Authority in light of the finding, or where the service provider fails to perform the corrective action within the time period accepted or extended by the Authority, the finding may be raised to a level 1 finding, and action taken as laid down in point (1).

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

- (f) For those cases not requiring level 1 and 2 findings, the Authority may issue observations.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

APPENDICES TO ANNEX II

Appendix 1 — BCAA Form 157

CERTIFICATE FOR SERVICE PROVIDER

BHUTAN CIVIL AVIATION AUTHORITY

AUTHORITY

SERVICE PROVIDER CERTIFICATE

[CERTIFICATE NUMBER/ISSUE No]

Pursuant to Bhutan Air Navigation Regulations and subject to the conditions specified below, the Authority hereby certifies

[NAME OF THE SERVICE PROVIDER]

[ADDRESS OF THE SERVICE PROVIDER]

as a service provider with the privileges, as listed in the attached service provision conditions.

CONDITIONS:

This certificate is issued subject to the conditions and the scope of providing services and functions as listed in the attached service provision conditions.

This certificate is valid for a period of ____ from the date of issue, whilst the certified service provider remains in compliance with BANRs and the other applicable regulations and, when relevant, with the procedures in the service provider's documentation.

Subject to compliance with the foregoing conditions, this certificate shall remain valid unless the certificate has been surrendered, limited, suspended or revoked.

Date of issue:

Signed:

[Director General]



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

SERVICE PROVIDER			
CERTIFICATE			
SERVICE PROVISION CONDITIONS			
Attachment to service provider's certificate:			
[CERTIFICATE NUMBER/ISSUE No]			
[NAME OF THE SERVICE PROVIDER]			
has obtained the privileges to provide the following scope of services/functions:			
(Delete lines as appropriate)			
Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations ¹
Air traffic services (ATS) ²	Air traffic control (ATC)	Area control service	
		Approach control service	
		Aerodrome control service	
	Flight information service (FIS)	Aerodrome flight information service (AFIS)	
		En-route flight information service (En-route FIS)	
	Advisory service	n/a	
Air traffic flow Management (ATFM)	ATFM	Provision of the local ATFM	
Airspace Management (ASM)	ASM	Provision of the local ASM (tactical/ASM Level 3) service	
Conditions ³			

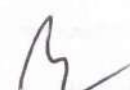
Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations ¹
Air traffic services (ATS) for flight test ^{2,4}	Air traffic control (ATC)	Area control service	
		Approach control service	
		Aerodrome control service	
	Flight information service (FIS)	Aerodrome flight information service (AFIS)	
		En-route flight information service (En-route FIS)	
	Advisory service	n/a	
Conditions ³			

¹ As prescribed by the Authority.

² ATS covers alerting service.

³ Where necessary.

⁴ If the Authority considers it necessary to establish additional requirements.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 7-Air Traffic Management/Air Navigation Services (ATM/ANS)

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations ¹
Communication, navigation or surveillance services (CNS)	Communications (C)	Aeronautical mobile service (air-ground communication)	
		Aeronautical fixed service (ground-ground communications)	
		Aeronautical mobile satellite service (AMSS)	
	Navigation (N)	Provision of NDB signal in space	
		Provision of VOR signal in space	
		Provision of DME signal in space	
		Provision of ILS signal in space	
		Provision of MLS signal in space	
		Provision of GNSS signal in space	
	Surveillance (S)	Provision of data from primary surveillance (PS)	
		Provision of data from secondary surveillance (SS)	
		Provision of automatic dependent surveillance (ADS) Data	
Conditions ²			

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations ¹
Aeronautical information services (AIS)	AIS	Provision of the whole AIS service	
Conditions ²			

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations ¹
Meteorological services (MET)	MET	Meteorological watch office	
		Aerodrome meteorological offices	
		Aeronautical meteorological stations	
		VAAC	
		WAFC	
		TCAC	
Conditions ²			

Date of issue:			
Signed: [Director General]			
For the Bhutan Civil Aviation Authority			

¹ As prescribed by the Authority

² Where necessary



BHUTAN AIR NAVIGATION REGULATIONS



SECTION 8 - Rules of the Air

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 8 - Rules of the Air

8.1 Territorial Application of the rules of the Air:

- a) Aircraft within the boundaries of Bhutan, and
- b) Aircraft bearing registration and nationality marks of Bhutan wherever they may be to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory over flown.

8.2 Compliance with the Rules of the Air.

8.2.1 The operation of an aircraft either in flight or on the movement area of an aerodrome shall be in compliance with the general rules and, in addition, when in flight, either with:

- a) The visual flight rules; or
- b) The instrument flight rules.

8.3 Responsibility for Compliance with the Rules of the air.

8.3.1 Responsibility of the pilot-in-command.

The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with the rules of the air, except that the pilot-in-command may depart from these rules in circumstances that render such departure absolutely necessary in the interests of safety.

8.4 Authority of pilot-in-command of an Aircraft.

8.4.1 The pilot-in-command of an aircraft shall have final authority as to the disposition of the aircraft while in command.

8.5 Reporting hazardous conditions.

8.5.1 The pilot- in- command shall, on meeting with hazardous conditions in the course of a flight, or as soon as possible hereafter, send to the appropriate air traffic control unit by the quickest means available, information containing such particulars of hazardous conditions as may be pertinent to the safety of other aircraft.

8.6 Misuse of signals and markings.

8.6.1 A signal or a marking to which a meaning is given by these Rules, or which is required by these Rules to be used in circumstances, or for a purpose therein specified, shall not be used except with that meaning, or for that purpose.



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.6.2 A person in an aircraft or on an aerodrome or at any place at which an aircraft is taking off or landing shall not make any signal which may be confused with a signal specified in these Rules.

8.7 Problematic Use of Psychoactive Substances.

8.7.1 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 psychoactive substances.

8.8 Protection of Persons and Property

8.8.1 Negligent or reckless operation of aircraft.

An aircraft shall not be operated in a negligent or reckless manner so as to endanger life or property of others.

8.8.2 Minimum Heights

Except when necessary for take-off or landing, or except by permission from the Director, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons unless;

- a) At such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface; or
- b) At a height of 1500 feet above the highest fixed object within 2000 feet of the aircraft, whichever is higher.

8.8.3 An aircraft shall not fly, except with the permission in writing of the Director and in accordance with any conditions therein specified:-

- a) Over, or within 3000 feet of, any assembly in the open air of persons assembled for the purpose of witnessing or participating in any organized event, and with the consent in writing of the organizers of the event; or
- b) Below such height as would enable it to alight clear of the assembly in the event of failure of a power unit and if such an aircraft is towing a banner such height shall be calculated on the basis that the banner shall not be dropped within 3000 feet of the assembly;
- c) Closer than 500 feet to any person, vessel, vehicle or structure.

8.8.4 A helicopter shall not fly, except with the permission in writing of the Director, and in accordance with any conditions therein specified:



Bhutan Air Navigation Regulations (BANRs)

Section 8 - Rules of the Air

- a) Below such height as would enable it to alight without danger to persons or property on the surface, in the event of failure of a power unit.
- b) Over a congested area of a city, town or settlement below a height of 1500 feet above the highest fixed object within 2000 feet of the helicopter.

8.8.5 Nothing in this Rule shall prohibit an aircraft from flying in such a manner as is necessary for the purpose of saving life.

8.8.6 Nothing in this Rule shall Prohibit an aircraft from flying in accordance with normal aviation practice, for the purpose of taking off from, landing at or practicing approaches to landing at, or checking the navigational aids or procedures at an aerodrome owned or managed by the BCAA or a licensed aerodrome in Bhutan or at any aerodrome at any other country. Provided that the practicing of approaches to land shall be confined to the airspace customarily used by aircraft when landing or taking off at an aerodrome.

8.8.7 Cruising Levels

8.8.7.1 The cruising levels at which a flight or portion of a flight is to be conducted shall be in terms of:

- a) Flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude;
- b) Altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.

8.8.8 Dropping or Spraying

8.8.8.1 Nothing shall be dropped or sprayed from an aircraft in flight except as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

8.8.9 Towing

8.8.9.1 No aircraft or other object shall be towed by an aircraft, except in accordance with requirements prescribed by the HoA and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

8.8.10 Parachute Descents

8.8.10.1 Parachute descents, other than emergency descents, shall not be made except under conditions prescribed by the HoA and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit

8.8.11 Aerobatic Flight

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.8.11.1 No aircraft shall be flown acrobatically except under conditions prescribed by the HoA and as indicated by relevant information, advice, and/or clearance from the appropriate air traffic services unit.

8.8.12 Formation Flights

8.8.12.1 Aircraft shall not be flown in formation except under conditions prescribed by the HoA and by pre-arrangement among the pilots-in-command of the aircraft taking part in the flight.

8.8.13 Prohibited and Restricted Areas

8.8.13.1 Aircraft shall not be flown in a prohibited area, or in a restricted area, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the state over whose territory the areas are established.

8.9 Avoidance of Collisions

Notwithstanding that the flight is being made with air traffic control clearance it shall remain the duty of the commander for an aircraft to take all possible measures to ensure that this aircraft does not collide with any other aircraft.

8.9.1 Proximity

An aircraft shall not be flown in such proximity to other aircraft as to create a collision hazard.

8.9.2 Right of Way

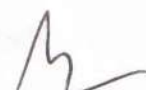
The aircraft that has the right-of-way shall maintain its heading and speed but nothing in these rules shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.

An aircraft that is obliged by these Rules to keep out of the way of another shall avoid passing over, under or in front of the other, unless it passes well clear and takes into account the effect of aircraft wake turbulence.

8.9.3 Approaching head-on

When two aircraft are approaching head-on or approximately so in air and there is danger of collision, each shall alter its heading to the right.

8.9.4 Converging.



Bhutan Air Navigation Regulations (BANRs)

Section 8 - Rules of the Air

When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way, except as follows:

- a) Power-driven heavier-than-air aircraft shall give way to airships, gliders and balloons;
- b) Airships shall give way to gliders and balloons;
- c) Gliders shall give way to balloons;
- d) Power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.

8.9.5 Overtaking

An overtaking aircraft is an aircraft which approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering its heading to the right, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear.

8.9.6 Landing.

8.9.6.1 An aircraft in flight, or operating on the ground or water, shall give way to aircraft landing or in the final stages of an approach to land.

8.9.6.2 When two or more heavier-than-air aircraft are approaching an aerodrome for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in front of another which is in the final stages of an approach to land, or to overtake that aircraft.

8.9.7 Emergency Landing.

An aircraft that is aware that another is compelled to land shall give way to that aircraft.

8.9.7 Taking Off.

An aircraft taxiing on the manoeuvring area of an aerodrome shall give way to aircraft taking off or about to take off.

8.9.8 Right-hand Traffic Rule

An aircraft which is flying in sight of the ground and is following a line feature shall keep such line feature on its left.

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.9.9 Surface Movement of Aircraft

8.9.9.1 In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome the following shall apply:

- a) When two aircraft are approaching head on, or approximately so, each shall stop or, where practicable, alter its course to the right so as to keep well clear;
- b) When two aircraft are on a converging course, the one which has the other on its right shall give way;
- c) An aircraft which is being overtaken by another aircraft shall have the right-of-way and the overtaking aircraft shall keep well clear of the other aircraft.

8.9.9.2 An aircraft taxiing on the manoeuvring area shall stop and hold at all taxi-holding positions unless otherwise authorized by the aerodrome control tower.

8.9.9.3 An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further only when the lights are switched off.

8.10 Lights to be displayed by Aircraft

8.10.1 By day or night an aircraft fitted with an anti-collision light shall display such a light from immediately before engine start to immediately after engine shut-down.

8.10.2 From sunset to sunrise, or during any other period which may be prescribed by the appropriate authority, all aircraft in flight shall display:

- a) Anti-collision lights intended to attract attention to the aircraft; and
- b) Navigation lights intended to indicate the relative path of the aircraft to an observer and other lights shall not be displayed if they are likely to be mistaken for these lights.

8.10.3 Lights fitted for other purposes, such as landing lights and airframe floodlights, may be used in addition to the lights specified above to enhance aircraft conspicuity.

8.10.4 From sunrise to sunset, or during any other period prescribed by the appropriate authority:

- a) all aircraft moving on the movement area of an aerodrome shall display navigation lights intended to indicate the relative path of the aircraft to an observer and other lights shall not be displayed if they are likely to be mistaken for these lights;



Bhutan Air Navigation Regulations (BANRs)

Section 8 - Rules of the Air

- b) unless stationary and otherwise adequately illuminated, all aircraft on the movement area of an aerodrome shall display lights intended to indicate the extremities of their structure;
- c) all aircraft operating on the movement area of an aerodrome shall display lights intended to attract attention to the aircraft; and
- d) all aircraft on the movement area of an aerodrome whose engines are running shall display lights which indicate that fact.

8.10.5 Notwithstanding the provisions of this section of these Rules the commander of an aircraft may switch off or reduce the intensity of any flashing light fitted to the aircraft if such a light does or is likely to:

- a) Adversely affect the satisfactory performance of the duties of any member of the flight crew; or
- b) Subject an outside observer to unreasonable dazzle.

8.10.6 The systems of lights referred to in subsection 8.10.2 b) of this Rule are as follows:

- a) A steady green light of at least five candela showing to the starboard side through an angle of 110° from the dead ahead in the horizontal plane; and
- b) A steady red light of at least five candela showing to the port side through an angle of 110° from dead ahead in the horizontal plane; and
- c) A steady white light of at least five candela showing through angles of 70° from dead astern to each side in the horizontal plane.

8.11 Simulated instrument flight

8.11.1 An aircraft shall not be flown in simulated instrument conditions unless:-

- a) no passengers are carried;
- b) Fully functioning dual controls are installed in the aircraft; and
- c) A qualified pilot occupies a control seat to act as safety pilot for the person who is flying under simulated instrument conditions. The safety pilot shall have adequate vision forward and to each side of the aircraft, or a competent observer in communication with the safety pilot shall occupy a position in the aircraft from which the observer's field of vision adequately supplements that of the safety pilot.



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

For the purpose of this Rule the expression “simulated instrument conditions” means a flight during which mechanical or optical devices are used in order to reduce the field of vision of the person flying.

8.12 Practice instrument approaches.

8.12.1 Within Bhutan an aircraft shall not carry out instrument approach practice when flying in Visual Meteorological Conditions unless:-

- a) The appropriate air traffic control unit has previously been informed that the flight is to be made for the purpose of instrument approach practice; and
- b) If the flight is being carried out in simulated instrument conditions, a safety pilot and, if required, a competent observer is carried.

8.13 Flight Plans.

8.13.1 Information relative to an intended flight or portion of a flight, to be provided to air traffic service units, shall be in the form of a flight plan.

8.13.2 A flight plan shall be submitted prior to operating:

- a) any flight or portion thereof to be provided with air traffic control service; or
- b) any IFR flight within advisory airspace; or
- c) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate the provision of flight information, alerting and search and rescue services; or
- d) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate co-ordination with appropriate military units or with air traffic service units in adjacent States in order to avoid the possible need for interception for the purpose of identification; or
- e) any flight across international borders.

8.13.3 A flight plan shall be submitted before departure to an air traffic services reporting office or, during flight, transmitted to the appropriate air traffic services unit or air- ground control radio station, unless arrangements have been made for submission of repetitive flight plans.



Bhutan Air Navigation Regulations (BANRs)

Section 8 - Rules of the Air

8.13.4 Unless otherwise prescribed by the appropriate ATS authority, a flight plan for a flight to be provided with air traffic control service or air traffic advisory service shall be submitted at least sixty minutes before departure, or, if submitted during flight, at a time which will ensure its receipt by the appropriate air traffic services unit at least ten minutes before the aircraft is estimated to reach:

- a) the intended point of entry into a control area or advisory area; or
- b) the point of crossing an airway or advisory route.

8.14 Contents of a Flight Plan.

A flight plan shall comprise information regarding such of the following items as are considered relevant by the appropriate ATS authority:

- Aircraft identification
- Flight rules and type of flight
- Number and type(s) of aircraft and wake turbulence category
- Equipment
- Departure aerodrome
- Estimated off-block time
- Cruising speed(s)
- Route to be followed
- Destination aerodrome and total estimated elapsed time
- Alternate aerodrome(s)
- Fuel endurance
- Total number of persons on board
- Emergency and survival equipment
- Other information

8.15 Completion of a Flight Plan.

8.15.1 Whatever the purpose for which it is submitted, a flight plan shall contain information, as applicable, on relevant items up to and including "Alternate aerodrome(s)" regarding the whole route or the portion thereof for which the flight plan is submitted.

8.15.2 It shall, in addition, contain information, as applicable, on all other items when so prescribed by the appropriate ATS authority or when otherwise deemed necessary by the person submitting the flight plan.

8.16 Changes to a Flight Plan.

8.16.1 All changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported as soon as practicable to the appropriate air traffic

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

services unit. For other VFR flights, significant changes to a flight plan shall be reported as soon as practicable to the appropriate air traffic services unit.

8.17 Closing a Flight Plan.

- 8.17.1 Unless otherwise prescribed by the appropriate ATS authority, a report of arrival shall be made in person, by radiotelephony or via data link at the earliest possible moment after landing, to the appropriate air traffic services unit at the arrival aerodrome, by any flight for which a flight plan has been submitted covering the entire flight or the remaining portion of a flight to a destination aerodrome.
- 8.17.2 When a flight plan has been submitted only in respect of a portion of a flight, other than the remaining portion of a flight to destination, it shall, when required, be closed by an appropriate report to the relevant air traffic services unit.
- 8.17.3 When no air traffic services unit exists at the arrival aerodrome, the arrival report, when required, shall be made as soon as practicable after landing and by the quickest means available to the nearest air traffic services unit.
- 8.17.4 When communication facilities at the arrival aerodrome are known to be inadequate and alternate arrangements for the handling of arrival reports on the ground are not available, the following action shall be taken. Immediately prior to landing the aircraft shall, if practicable, transmit to the appropriate air traffic services unit, a message comparable to an arrival report, where such a report is required. Normally, this transmission shall be made to the aeronautical station serving the air traffic services unit in charge of the flight information region in which the aircraft is operated.

8.17.5 Arrival reports made by the aircraft shall contain the following elements of information:

- a) Aircraft identification;
- b) departure aerodrome;
- c) destination aerodrome (only in the case of a diversionary landing);
- d) arrival aerodrome;
- e) time of arrival.

8.18 Time

- 8.18.1 Coordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.

8.18.2 A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary.

8.18.3 Wherever time is utilized in the application of data link communications, it shall be accurate to within 1 second of UTC.

8.19 Air Traffic Control Service

8.19.1 Air Traffic Control Clearances. An air traffic control clearance shall be obtained prior to operating a controlled flight, or a portion of a flight as a controlled flight. Such clearance shall be requested through the submission of a flight plan to an air traffic control unit.

8.19.2 Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.

8.19.3 Potential Re clearance in Flight.

If prior to departure it is anticipated that, depending on fuel endurance and subject to re clearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.

8.19.4 An aircraft operated on a controlled aerodrome shall not taxi on the manoeuvring area without clearance from the aerodrome control tower and shall comply with any instructions given by that unit.

8.20 Adherence to Flight Plan

8.20.1 An aircraft shall adhere to the current flight plan or the applicable portion of a current flight plan submitted for a controlled flight unless a request for a change has been made and clearance obtained from the appropriate air traffic control unit, or unless an emergency situation arises which necessitates immediate action by the aircraft, in which event as soon as circumstances permit, after such emergency authority is exercised, the appropriate air traffic services unit shall be notified of the action taken and that this action has been taken under emergency authority.

8.20.2 Unless otherwise authorised or directed by the appropriate air traffic control unit, controlled flights shall, in so far as possible:

- a) When on an established ATS route, operate along the defined centre line of that route; or

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

- b) When on any other route, operate directly between the navigation facilities and/or points defining the route.

8.20.3 Subject to the overriding requirement in 8.20.2, an aircraft operating along an ATS route segment defined by reference to a very high frequency omni directional radio ranges (VOR) shall change over for its primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the change-over point, where established.

8.20.4 Deviation from the requirements in 8.20.2 shall be notified to the appropriate air traffic services unit.

8.20.5 Inadvertent Changes.

8.20.5.1 In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:

- a) *Deviation from track.*

If the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.

- b) *Variation in True Airspeed.*

If the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.

- c) *Change in Time Estimate.*

If the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of three minutes from that notified to air traffic services, or such other period of time as is prescribed by the appropriate ATS authority or on the basis of air navigation regional agreements, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.

8.20.5.2 Additionally when an ADS agreement is in place, the air traffic services unit (ATSU) shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.

8.20.5.3 Intended Changes

Requests for flight plan changes shall include information as indicated hereunder:

- a) Change of Cruising Level:

Bhutan Air Navigation Regulations (BANRs)

Section 8 - Rules of the Air

8.20.5.2 aircraft identification;

- requested new cruising level and cruising speed at this level; and
- revised time estimates (when applicable) at subsequent flight information region boundaries.

b) Change of Route:

i) Destination Unchanged:

- aircraft identification;
- flight rules;
- description of new route of flight including related flight plan data beginning with the position from which requested change of route is to commence;
- revised time estimates; and
- any other pertinent information.

ii) Destination Changed:

- aircraft identification;
- flight rules;
- description of revised route of flight to revised destination aerodrome including related flight plan data, beginning with the position from which the requested change of route is to commence;
- revised time estimates;
- alternate aerodrome(s); and
- any other pertinent information.

8.20.5.4 Weather Deterioration Below VMC

When it becomes evident that flight in VMC in accordance with its current flight plan will not be practicable, a VFR flight operated as a controlled flight shall:

- a) Request an amended clearance enabling the aircraft to continue in VMC to destination or to an alternative aerodrome or to leave the airspace within which an ATC clearance is required; or
- b) If no clearance in accordance with a) can be obtained, continue to operate in VMC and notify the appropriate ATC unit of the action being taken either to leave the airspace concerned or to land at the nearest suitable aerodrome; or
- c) If operated within a control zone, request authorisation to operate as a special VFR flight; or
- d) Request clearance to operate in accordance with the instrument flight rules.

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.21 Position Reports.

8.21.1 Unless exempted by the appropriate ATS authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the appropriate ATS authority or specified by appropriate air traffic services unit.

8.21.2 Controlled flights providing position information to the appropriate air traffic services unit via data link communications shall only provide voice position reports when requested.

8.22 Termination of Control

A controlled flight shall, except when landing at a controlled aerodrome, advise the appropriate ATC unit as soon as it ceases to be subject to air traffic control service.

8.23 Communications

8.23.1 An aircraft operated as a controlled flight shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and establish two-way communication as necessary with, the appropriate air traffic control unit, except as may be prescribed by the appropriate ATS authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

8.23.2 SELCAL or similar automatic signalling devices satisfy the requirement to maintain an air-ground voice communications watch.

8.23.3 The requirement for an aircraft to maintain air-ground voice communication watch remains in effect after CPDLC has been established.

8.23.4 Communication Failure.

If a communication failure precludes compliance with 8.23.1, the aircraft shall comply with the communication failure procedures of Volume II of Annex 10 to the Convention on International Civil Aviation, and with such of the following procedures as are appropriate. In addition, the aircraft, when forming part of the aerodrome traffic at a controlled aerodrome, shall keep a watch for such instructions as may be issued by visual signals.

8.23.5 If in visual meteorological conditions, the aircraft shall:

- a) Continue to fly in visual meteorological conditions;

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

- b) Land at the nearest suitable aerodrome; and
- c) Report its arrival by the most expeditious means to the appropriate air traffic control unit.

8.23.6 If in instrument meteorological conditions or when conditions are such that it does not appear feasible to complete the flight in accordance with 8.23.5 the aircraft shall:

- a) Unless otherwise prescribed on the basis of regional air navigation agreement, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following the aircraft's failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the filed flight plan;
- b) Proceed according to the current flight plan route to the appropriate designated navigation aid serving the destination aerodrome and, when required to ensure compliance with c) below, hold over this aid until commencement of descent;
- c) Commence descent from the navigation aid specified in b) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival resulting from the current flight plan;
- d) Complete a normal instrument approach procedure as specified for the designated navigation aid; and
- e) Land, if possible, within thirty minutes after the estimated time of arrival specified in c) or the last acknowledged expected approach time, whichever is later.

8.24 Minimum Visibility and Distance from Cloud.

Except when operating as a special VFR flight, VFR flights shall be conducted so that the aircraft is flown in conditions of visibility and distance from clouds equal to or greater than those specified in Table 8.24.1 below.

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

Airspace Class	B	C D E	F G
			<div>ABOVE 3,000 ft (900 m) AMSL or above 1,000 ft (300 m) above terrain, whichever is the higher</div> <div>At and below 3,000 ft (900 m) or 1,000 ft (300 m) above terrain whichever is the Higher</div>
Distance From Cloud	Clear of cloud	1 nm (1,500 m) horizontally 1,000 ft (300 m) vertically	Clear of cloud and in sight of the Surface
Flight Visibility	5 nm (8 Km) at and above 10,000 ft (3050 m) 3 nm (5 Km) below 10,000 ft (3050 m)		3 nm (5 Km)

Table 8.24.1

8.25 Limitations on aerodromes within a control zone.

Except when a clearance is obtained from an air traffic control unit, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or traffic pattern:

- a) When the ceiling is less than 1,500 ft (450 m); or
- b) When the ground visibility is less than 3 nautical miles (5 Km).

8.26 Limitations on VFR flights between sunset and sunrise.

VFR flights are not permitted between sunset and sunrise.

8.27 Limitations on Flight Levels and Speeds.

VFR flights shall not be operated:

- a) Above FL 290; or
- b) At transonic and supersonic speeds.



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.28 Minimum Heights for VFR Flights

Except when necessary for take-off and landing, or except by permission from the appropriate authority, a VFR flight shall not be flown:

- a) Over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height less than 1,000 ft (300 m) above the highest obstacle within a radius of 600 m from the aircraft;
- b) Elsewhere, at a height less than 500 ft (150 m) above the ground or water.

8.29 Rules applicable to all IFR flights.

8.29.1 Aircraft Equipment.

Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown.

8.29.2 Minimum Levels.

Except when necessary for take-off and landing, or except when specifically authorized by the appropriate authority, an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the STATE whose territory is over flown, or, where no such minimum flight altitude has been established:

- a) Over high terrain or in mountainous areas, at a level which is at least 2,000 ft (600 m) above the highest obstacle located within 5 nautical miles (8 Km) of the estimated position of the aircraft;
- b) Elsewhere, at a level which is at least 1,000 ft (300 m) above the highest obstacle located within 5 nautical miles (8 Km) of the estimated position of the aircraft.

8.29.3 Change from IFR to VFR Flight.

8.29.3.1 An aircraft electing to change the conduct of its flight from compliance with the instrument flight rules to compliance with the visual flight rules shall, if a flight plan was submitted, notify the appropriate air traffic services unit specifically that the IFR flight is cancelled and communicate thereto the changes to be made to its current flight plan.

8.29.3.2 When an aircraft operating under the instrument flight rules is flown in or encounters visual meteorological conditions it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued in uninterrupted visual meteorological conditions.



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.30 Rules applicable to IFR flights within controlled airspace.

8.30.1 IFR flights shall comply with the provisions of 8.19 when operating in controlled airspace.

8.30.2 An IFR flight operating in cruising flight in controlled airspace shall be flown at a cruising level, or, if authorized to employ cruise climb techniques, between two levels or above a level, selected from Table 8.31.1 below, except that the correlation of levels to track prescribed therein shall not apply whenever otherwise indicated in air traffic control clearances or specified by the appropriate ATS authority in Aeronautical Information Publications.

8.31 Rules applicable to IFR flights outside controlled airspace.

8.31.1 Cruising Levels.

An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level appropriate to its track as specified in Table 8.31.1 below.

8.31.2 Communications.

8.31.2.1 An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by appropriate ATS authority in accordance with 8.13.2 c) or d) shall maintain air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service.

8.31.3 Position Reports.

8.31.3.1 An IFR flight operating outside controlled airspace and required by the appropriate ATS authority to:

- Submit a flight plan,
- Maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication as necessary, with the air traffic services unit providing information service, shall report position as specified in 8.21 for controlled flights.

Magnetic Track										
From 000 degrees to 179 degrees						From 180 degrees to 359 degrees				
IFR Flights			VFR Flights			IFR Flights			VFR Flights	
FL	Feet		FL	Feet		FL	Feet		FL	Feet
N/A *	N/A *		N/A *	N/A **		N/A *	N/A **		N/A *	N/A **



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

	11 000			11 500			12 000		12 500
	13 000			13 500			14 000		14 500
	15 000			15 500			16 000		16 500
	17 000			17 500			18 000		-
190	N/A (3)		195	N/A (3)		200	N/A (3)	205	N/A (3)
210			215			220		225	
230			235			240		245	
250			255			260		265	
270			275			280		285	
290			N/A (4)			310		N/A (4)	
330						350			
370						390			
410						430			
Etc						Etc			
Etc						Etc			

Table 8.31.1

Notes:

- * Transition Altitude in Bhutan is 18,000 ft. Flight levels not authorized below this height.
- ** Terrain in Bhutan precludes allocation of cruising levels below 11,000 ft.
- (3) VFR flights in Bhutan not authorized above FL 290.

8.32 Distress and Urgency Signals.

8.32.1 Distress Signals.

8.32.1.1 The following signals, used either together or separately mean that grave and imminent danger threatens, and immediate assistance is requested:

- a) A signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (· · · - - - · · · in the Morse Code);
- b) A radiotelephony distress signal consisting of the spoken words **MAYDAY MAYDAY MAYDAY**;
- c) A distress message sent via data link which transmits the intent of the word **MAYDAY**;
- d) Rockets or shells throwing red lights, fired one at a time at short intervals;

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

- e) A parachute flare showing a red light.

8.32.2 Urgency signals.

8.32.2.1 The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance :

- a) The repeated switching on and off of the landing lights;
- b) The repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.

8.32.2.2 The following signals used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft, or other vehicle, or of some person on board or within sight:

- a) A signal made by radiotelegraphy or by any other signalling method consisting of the group XXX (- · · - - · · - - · · - in the Morse Code);
- b) a radiotelephony urgency signal consisting of the spoken words **PAN PAN PAN**;
- c) an urgency message sent via data link which transmits the intention of the word **PAN**.

8.33 Signals for Use in the Event of Interception.

8.33.1 *Radio communication between the intercept control unit or the intercepting aircraft and the intercepted aircraft.*

8.33.2 When an interception is being made, the intercept control unit and the intercepting aircraft will:

- a) attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121.5 MHz, using the call signs "INTERCEPT CONTROL", "INTERCEPTOR (call sign) and "INTERCEPTED AIRCRAFT" respectively; and
- b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the appropriate ATS authority, or to establish contact through the appropriate ATS unit(s).

8.33.3 If radio contact is established during interception but communication in a common language is not possible, attempts must be made to convey instructions,

Revision 01



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

acknowledgement of instructions and essential information by using the phrases and pronunciations in Table 8.33.1 below and transmitting each phrase twice.

Table:8.33.1

<i>Phrases for use by INTERCEPTING aircraft</i>			<i>Phrases for use by INTERCEPTED aircraft</i>		
<i>Phrase</i>	<i>Pronunciation</i>	<i>Meaning</i>	<i>Phrase</i>	<i>Pronunciation</i>	<i>Meaning</i>
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?	CALL SIGN (call sign)	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	WILCO	<u>VILL</u> - KO	Understood, will comply
DESCEND	DEE - <u>SEND</u>	Descend for Landing	CAN NOT	<u>KANN</u> NOTT	Unable to comply
YOU LAND	<u>YOU</u> LAAND	Land at this Aerodrome	REPEAT	REE - <u>PEET</u>	Repeat your instruction
PROCEED	PRO - <u>SEED</u>	You may Proceed	AM LOST	<u>AM</u> <u>LOSST</u>	Position unknown
			MAYDAY	<u>MAYDAY</u>	I am in distress
			HIJACK	<u>HI</u> <u>JACK</u>	I have been Hijacked
			LAND (place name)	LAAND (place name)	
					I request to land at (place name)
			DESCEND	<u>DEE-SEND</u>	I require Descent
Notes: 1. In the second column, syllables to be emphasized are underlined. 2. The call sign required to be given is that used in radiotelephony communications with air traffic service units and corresponding to the aircraft identification in the flight plan. 3. Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".					

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	DAY or NIGHT - Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right of if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left (or to the right in the case of a helicopter) on the desired heading.	You have been intercepted. Follow me.	DAY or NIGHT - Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.
2	DAY or NIGHT - An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT - Rocking the aircraft.	Understood, will comply.
3	DAY or NIGHT - Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.	Land at this aerodrome	DAY or NIGHT - Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply

Table 8.33.2 Visual Signals initiated by **INTERCEPTING** aircraft and responses by **INTERCEPTED** aircraft.

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.33.3 Visual Signals initiated by *INTERCEPTED* aircraft and responses by *INTERCEPTING* aircraft.

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4	DAY or NIGHT - Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 1,000 ft (300 m) but not exceeding 2,000 ft (600 m) (in the case of a helicopter, at a height exceeding 170 ft (50 m) but not exceeding 330 ft (100 m)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT - If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me Understood, you may proceed.
5	DAY or NIGHT - Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT - Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT - Irregular flashing of all available lights.	In distress.	DAY or NIGHT - Use Series 2 signals prescribed for intercepting aircraft.	Understood.

Table 8.33.3

8.34 Unlawful Interference.

An aircraft which is being subjected to unlawful interference shall endeavor to notify the appropriate ATS unit of this fact, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and minimize conflict with other aircraft.

8.34.1 Procedures.

Unless considerations aboard the aircraft dictate otherwise, the pilot-in-command



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

should attempt to continue flying on the assigned track and at the assigned cruising level at least until able to notify an ATS unit or within radar coverage. When an aircraft subjected to an act of unlawful interference must depart from its assigned track or its assigned cruising level without being able to make radiotelephony contact with ATS, the pilot-in-command should, whenever possible:

- a) Attempt to broadcast warnings on the VHF emergency frequency and other appropriate frequencies, unless considerations aboard the aircraft dictate otherwise. Other equipment, such as on-board transponders, data links etc., should also be used when it is advantageous to do so and circumstances permit; and
- b) Proceed in accordance with applicable special procedures for in-flight contingencies, where such procedures have been established; or
- c) If no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for IFR flight in the area by 1,000 ft (300 m) if above FL 290 or by 500 ft (150 m) if below FL 290.

8.35 Visual Signals used to warn an unauthorized aircraft flying in, or about to enter, a Restricted, Prohibited or Danger Area.

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

8.36 Signals for Aerodrome Traffic.

8.36.1 *Light and pyrotechnic signals.*

The following light and pyrotechnic signals will be used to aircraft in flight or on the ground:

Light	From Aerodrome Control to:	
	Aircraft in flight	Aircraft on the ground
Steady green	Cleared to land	Cleared for take-off
Steady red	Give way to other aircraft and	Stop
Series of green flashes	Return for landing	Cleared to taxi
Series of red flashes	Aerodrome unsafe, do not	Taxi clear of landing area in
Series of white flashes	Land at this apron and proceed to	Return to starting point on the
Red pyrotechnic	Notwithstanding any previous instructions, do not land for the time being.	

8.36.2 Acknowledgement by an aircraft.

- a) When in flight:

Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

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

8.37.7 *Right-hand traffic.*

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

8.37.8 Air traffic services reporting office.

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

8.37.9 Glider flights in operation

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

8.37.10 Helicopter Landing Area

A white letter **H** indicates an area designated as a landing area for helicopters.

8.37.11 *Boundary Markers*

Orange and white markers, spaced not more than 15 metres apart, indicate the boundary of that part of a paved runway, taxiway or apron which is unfit for the movement of the aircraft.

8.38 Signals visible from the ground.

8.38.1 A black ball, 60 centimeters in diameter, suspended from a mast indicates that the directions of take-off and landing are not necessarily the same.

8.38.2 A checked flag or board, 1.2 metres by 90 centimetres containing twelve equal squares, 4 horizontally and 3 vertically, coloured red and yellow alternately, indicates that aircraft may move on the manoeuvring area and apron only in accordance with the permission of the air traffic control unit at the aerodrome.

8.38.3 Two red balls, 60 centimetres in diameter, disposed vertically one above the other, 60 centimetres apart and suspended from a mast, signify that glider flying is in progress at the aerodrome.

8.38.4 Black Arabic numerals in two-figures groups and, where parallel runways are provided the letter or letters L(left), LC(left centre), C(center), RC(right centre) and R(right), placed against a yellow background, indicate the direction for take-off or the runway in use.



Bhutan Air Navigation Regulations (BANRs)
Section 8 - Rules of the Air

8.38.5 A rectangular green flag, of not less than 60 centimeters square, flown from a mast indicates that the right hand circuit is in force.

8.39 Marshalling Signals.

Each of the signals for the guidance of aircraft manoeuvring on the ground described in the first column of the following tables have the meanings set forth in the second column opposite the description of the signal. By day any such signals shall be given by hand or by circular bats and by night by torches or illuminated wands.

<i>Description of a signal</i>	<i>Meaning of a signals</i>
(a) Raise arm and hand with fingers extended horizontally in front of face, then clench fist.	Brakes engaged.
(b) Raise arms with fist clenched horizontally in front of face, then extend fingers.	Brakes
(c) Arms extended palms facing outwards, move hands inwards to cross in front of face.	released.
(d) Hands crossed in front of face, palms facing outwards, move arms outwards.	Insert
(e) Raise the number of fingers on one hand indicating number of engines to be started. For this purpose the aircraft engines shall be numbered in relation to the marshaller facing the aircraft, from his right to his left, for example, No. 1 engine shall be in the port outer engine, No. 2 engine shall be in the port inner engine, No. 3 engine shall be the starboard inner engine, and No. 4 engine shall be the starboard outer engine.	Remove chocks.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 9 - Documents and Records

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 9 -Documents and records

9.1 Power to inspect and copy of documents and records

- 9.1.1 Pursuant to the power given under the provisions of the Civil Aviation Act of Bhutan 2016, the authorised person shall have the power to inspect and copy certificates, licenses, log books, documents or records.

9.2 Preservation of Document

- 9.2.1 A person required by the these regulations to preserve any document or record by reason of his being the operator of the aircraft shall, if he ceases to be the operator of the aircraft, continue to preserve the documents or records as if he had not ceased to be the operator, and in the event of his death, the duty to preserve the documents or records shall fall upon his personal representative.

9.3 Record Keeping

- 9.3.1 In accordance with section 82 of the Civil Aviation Act of Bhutan 2016, BCAA shall maintain the records of:
- a) Civil aircraft registered in Bhutan;
 - b) Documents which establish title to or any interest including international interest in any civil aircraft registered in Bhutan;
 - c) Any aircraft engine, propeller intended for use on any aircraft registered in Bhutan; and
 - d) Certificates, licenses and any other authorizations or aviation documents issued by the HoA.

9.4 Offences in relation to documents and records

- 9.4.1 A person shall not with intent to deceive-

- a) Any certificate, license, approval, permission, exemption or other document issued or required by or under these regulations which has been forged, altered, revoked or suspended, or to which he is not entitled ;or
- b) Lend any certificate, license, approval, permission, exemption or other document issued or having effect or required by or under these regulations to, or allow it to be used by, any other person; or

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 9 -Documents and records

- c) Make any false representation for the purpose of procuring for himself or any other person the grant, issue, renewal or variation of any such certificate, license, approval, permission or exemption or other document.
- d) In accordance with Section 113 of Civil Aviation Act of Bhutan 2016, the HoA shall revoke, suspend and vary any certificates, licenses, approvals and any other aviation documents issued, granted or having effect to the regulation.

9.5 Surrender of Aviation documents

- 9.5.1 The holder or any person having possession or custody of any certificates, License, approval, permission, exemption or other document which has been revoked, suspended or varied under these regulations shall surrender said documents to the BCAA within reasonable time after being required to do so.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 10 -Airworthiness of Aircraft

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 10 - Airworthiness of Aircraft

10.1 Objective and scope

10.1.1 These regulations establishes common technical requirements for the initial airworthiness, continuing airworthiness of aircraft, including maintenance and, qualification and training institute requirements for certifying staff thereto, for the performance and maintaining aircraft that are:

- (a) Registered in Bhutan; or
- (b) Registered in a third country and used by Bhutanese operator, where their regulatory safety oversight has been delegated to BCAA.

10.2 Initial airworthiness and environmental certification

10.2.1 This Regulation lays down common technical requirements for the airworthiness and environmental certification of products, parts and appliances specifying:

- (a) The issue of type acceptance certificates, supplemental type acceptance certificates.
- (b) The issue of certificates of airworthiness, restricted certificates of airworthiness, permits to fly and authorised release certificates;
- (c) The issue of repair design approvals;
- (d) The issue of noise certificates;
- (e) The identification of products, parts and appliances;
- (f) The issue of airworthiness directives.

10.2.2 The certification of aircraft and related products, parts and appliances shall be in accordance with BCAR-21.

10.3 Certificate of Airworthiness.

10.3.1 An aircraft registered in Bhutan shall not fly unless there is, relating to that aircraft, a valid Certificate of Airworthiness issued, or rendered valid by BCAA except that an aircraft that has previously been given a Certificate of Airworthiness may fly, subject to approval by the BCAA, for the purpose of qualifying the aircraft for the re-issue of the certificate, or, if the aircraft has suffered damage, to position the aircraft at an aerodrome at which repairs necessary to restore it to an airworthy condition can be carried out and it does not

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 10 - Airworthiness of Aircraft

carry passengers or cargo, or any persons other than those required to perform duties in the aircraft related to qualifying it for the re-issue of the Certificate of Airworthiness or to positioning it to another aerodrome.

10.4 Continuing airworthiness requirements

10.4.1 The continuing airworthiness of aircraft and components for installation thereon shall be ensured in accordance with BCAR-M.

10.4.2 Organizations and personnel involved in the continuing airworthiness of aircraft and components for installation thereon, including maintenance, shall comply with BCAR-M and where appropriate the provisions specified in 10.5.

10.4.3 By way of derogation from paragraph 10.4.1, the continuing airworthiness of aircraft holding a permit to fly, shall be ensured on the basis of the specific continuing airworthiness arrangements as defined in the permit to fly issued in accordance with BCAR-21.

10.5 Maintenance organization approvals

10.5.1 Organisations involved in the maintenance of large aircraft or of aircraft used for commercial air transport, and components intended for fitment thereto, shall be approved in accordance with the provisions of BCAR-145.

10.6 Certifying staff

10.6.1 Certifying staff shall be qualified in accordance with the provisions of BCAR-66/BAR-AMEL, except as provided for in points BCAR-M.A.606(h), BCAR-M.A.607(b), BCAR-M.A.801(d) and BCAR-M.A.803 of BCAR-M and in point BCAR-145.A.30(j) of BCAR-145 and Appendix IV to BCAR-145.

10.7 Training organization requirements

10.7.1 Organizations involved in the training of personnel referred to in 10.6 shall be approved in accordance with BCAR-147 to be entitled:

- (a) Conduct recognized basic training courses; and/or
- (b) Conduct recognised type training courses; and
- (c) Conduct examinations; and
- (d) Issue training certificates.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 11 - Personnel Licensing

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 11 - Personnel Licensing

11.1 Issue of flight crew licenses

As per Section 13(1) (d) of the Civil Aviation Act of Bhutan 2016, the Bhutan Civil Aviation Authority is responsible for licensing of aviation personnel and organizations. Personnel licensing is one of the main function of BCAA. Personnel licenses shall be issued to the flight crews on the basis of Foreign License. The requirement for the issue of licenses shall be as per BCAR- Personnel Licensing.

11.2 Medical Provisions for Personnel Licensing

The Aviation Medical standards applicable in Bhutan shall be in accordance with BCAR- Personnel Licensing. The applicant shall produce a valid medical fitness certificate.

11.3 Licenses other than flight crew

The requirement for Aircraft Maintenance Engineer's License shall be in accordance with BCAR-66. The requirements for Air Traffic Controllers License and Flight Operation Officer/Dispatcher shall be as per BCAR- Personnel Licensing.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 12 - Fees and charges

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION-12- fees and charges

12.1 Applicability

- 12.1.1 Pursuant to section 26 (5) of Civil Aviation Act of Bhutan 2016, BCAA shall review, approve and revise fees and charges for the issuance, validation, renewal, revalidation or amendment of any license, certificate, permit, approval or any other form of legal document to be granted or any other services rendered by the Bhutan Civil Aviation Authority.
- 12.1.2 The fees and charges levied by the Bhutan Civil Aviation Authority shall be in accordance with this regulation.
- 12.1.3 The fees to be levied for the issue, validation, renewal or amendment of any license, certificate, permit, approval or any other form of legal authority or document to be granted or any other service to be rendered by Bhutan Civil Aviation Authority shall be as specified in the Table hereto.
- 12.1.4 Any rules and regulations or circulars issued earlier in respect of fees or charges to be levied by the Bhutan Civil Aviation Authority for any services rendered is superseded by these Regulations.
- 12.1.5 These fees and charges shall not apply to Aviation Document Holders of BCAA.

12.2 Payment of fees and charges

- 12.2.1 Any applicant seeking facilities or services mentioned below shall furnish to the Bhutan Civil Aviation Authority all applicable information as required by the Bhutan Civil Aviation Authority together with the fees mentioned below, at the time of submitting the application.
- 12.2.2 The applicant shall pay the amount due in full to the BCAA Accounts Section.
- 12.2.3 An applicant shall, in addition to the fees mentioned below, bear the full cost of travel and daily subsistence allowance at the approved rate for the officials whom the Bhutan Civil Aviation Authority may have to engage to perform any work in location other than in which he/she is normally stationed in connection with any functions relating to the application.
- 12.2.4 Fees chargeable under these regulations are not refundable.
- 12.2.5 In the event of non-payment, BCAA may suspend or revoke the relevant certificate/license/ approval after having given warning to the applicant.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION-12- fees and charges

1. Air Operator Certification

Grant of an Air Operator's Certificate (AOC)

<i>Description</i>	<i>Initial Issue (Nu.)</i>	<i>Renewal (Nu.) After every one year</i>	<i>Amendment (Scope Enhancement) (Nu.)</i>	<i>Amendment (Operations Specifications) (Nu.)</i>
i. Commercial Air Transport Operations				
a. Aeroplane	300,000	100,000	15,000	5,000
b. Helicopter	150,000	50,000	15,000	5,000
<p>(This includes the work involved with evaluating a Prospective Operator's Pre-assessment Statement, conducting a Pre-application Meeting, Reviewing the Applicant's Formal Application Package, Evaluating Statement of Compliance ; Evaluating Operations Manual ; Evaluating the Training Manual; Evaluating the Cabin Crew member Manual; Evaluating Aircraft Operating Manual; Evaluating Minimum Equipment List; Evaluating Performance Planning Manual ; Evaluating Loading and Handling Manual ; Evaluating Dangerous Goods Manual; Evaluating Route Manual ; Evaluating Maintenance Control Manual; Evaluating Continuous Maintenance Programme ; and any other manual of procedures for grant of AOC, Conducting a conformity Inspection ; Conducting Maintenance Facilities Inspection; Evaluating other Certification Manuals and documents; Inspecting the applicant's main Base and Station Facilities ; Inspecting Training Programme and Training Facilities ; Evaluating Emergency Evacuation/ Ditching Demonstrations; Evaluating Demonstrations Flight; Reviewing the draft Operations Specifications and conveying the final evaluation decision.)</p>				

2. Operation of a foreign registered aircraft on wet lease/dry /lease/ chartered by AOC Holders

<i>Description</i>	<i>Initial Issue (Nu)</i>
i. Permission to operate a foreign registered aircraft on Wet Lease.	75,000
ii. Permission to operate Foreign Registered Aircraft on Dry Lease.	75,000
iii. Permission/approval/clearance to operate Foreign Registered Aircraft on Charter Basis/non schedule	10,000

BHUTAN AIR NAVIGATION REGULATIONS

SECTION-12- fees and charges

3. Nominated post holder approval – Nu. 5000
4. Instructor approval and renewal fee Nu. 5000
5. Amendment of Manuals – Nu. 1000

6. Chartered Operations

	<i>Nu</i>
Charter Operations Approval for Foreign Aircraft	10,000

7. Over flight Permit

	<i>Nu</i>
Over flight permit for Foreign Aircraft	3,000

8. Aerodrome

<i>Description</i>	<i>Initial Issue (Nu.)</i>	<i>Amendment (Nu.)</i>
i. Certification of Airport		
a. International Aerodrome	100,000	30,000
b. Domestic Aerodrome	50,000	15000
ii. Certification of a heliport or helipad	20,000	5000
iii. Obstacle Clearance Assessment fee for towers, mining and quarry operations	5000	N/A
iv. Instructor approval fee	2500	NA

9. Air Navigation Services

<i>Description</i>	<i>Initial Issue (Nu.)</i>	<i>Renewal (Nu.)</i>	<i>Amendment (Nu.)</i>
Certification of Aeronautical Service Providers			
(i) Air Traffic Service	10000	5000	2500
(ii) Aeronautical Information Service	10000	5000	2500

BHUTAN AIR NAVIGATION REGULATIONS

SECTION-12- fees and charges

(iii) Aeronautical meteorological Service	10000	5000	2500
(iv) Communication, Navigation, Surveillance Service	10000	5000	2500
(v) Grant of approval for special authorization with regard to the use or operation of navigation, communication or navigation ground /airborne equipment or procedure Aviation Special Events	10000	N/A	N/A
(vi) Grant of approval for instrument flight procedure/PBN Procedure	10000	N/A	N/A

10. Security

<i>Description</i>	<i>Initial Issue/Reactivation (Nu.)</i>	<i>Renewal (Nu.) (every 2 years)</i>
Certification of Aviation Security Screener	1000	500
Certification of Aviation Security Instructor	1500	500

BHUTAN AIR NAVIGATION REGULATIONS
SECTION-12 FEES AND CHARGES

11. Airworthiness

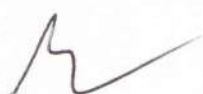
Description	Initial Issue (Nu)	Renewal (Annually) (Nu)	Amendment (Nu)
A. Type Acceptance Certificate			
(a) Aeroplane	15,000	N/A	N/A
(b) Helicopter	10,000	N/A	N/A
B. Supplementary Type Acceptance Certificate			
(a) Aeroplane	5,000	N/A	N/A
(b) Helicopter	3,000	N/A	N/A
C. Certificate of Airworthiness			
(a) Aeroplane	50,000	25,000	5,000
(b) Helicopter	30,000	15,000	3,000
D. Issuance of Noise Certificate Acceptance			
(a) Aeroplane	5,000	N/A	1,000
(b) Helicopter	5,000	N/A	1,000

E. Special Flight Permit			
(a) Aeroplane	10,000	N/A	N/A
(b) Helicopters	5,000	N/A	N/A
F. Export Certificate of Airworthiness			
(a) Aero plane	10,000		
(b) Helicopter	5,000		

**BHUTAN AIR NAVIGATION REGULATIONS
SECTION-12 FEES AND CHARGES**

G. Aircraft Registration			
(a) Aeroplane	10,000	N/A	N/A
(b) Helicopter	5,000	N/A	N/A
H. Reservation of Registration Mark by operator			
(a) Aeroplane	10,000		
(b) Helicopter	5,000		
I. Change of Registration Mark			
(a) Aeroplane	2,000		
(b) Helicopter	1,500		
J. De-registration			
(a) Aeroplane	5,000		
(b) Helicopter	3000		

K. Continuing Airworthiness Management Exposition Approval			
(a) Aeroplane	5,000	N/A	2,500
(b) Helicopter	3,000	N/A	1,500
L. Continuing Airworthiness Management Organization (CAMO)			
(a) Aeroplane	30,000	25,000	N/A
(b) Helicopter	25,000	20,000	N/A
M. Approval of Aircraft Maintenance Programme			
(a) Aeroplane	3,000	1,500	1,000



BHUTAN AIR NAVIGATION REGULATIONS
SECTION-12 FEES AND CHARGES

N. Approval of Maintenance Organization			
(a) Aeroplane	30,000	25,000	N/A
(b) Helicopter	25,000	20,000	N/A
O. Aviation Fuel station approval	3,000	1,500	N/A
P. Aviation Fuel Station Exposition Approval	2,000	N/A	1,000

Q. Airworthiness Miscellaneous Fees & Charges (Nu)	
1. Replacement of Certificates/Approvals	1,000
2. BCAA Form 4 Personnel Approval	5,000
3. Approval of Aircraft Technical Log Book	1,000
4. Aviation Fuel Quality Control Personnel Approval	1,000
5. Approval of Foreign Maintenance Organization	USD 1,500
6. Instructor approval	2,500

BHUTAN AIR NAVIGATION REGULATIONS
SECTION-12 FEES AND CHARGES

12. Personnel Licensing

Sl. No	Categories	List of Approvals	Initial (Nu)	Renewal (Nu)	Amendments (Nu)
1	Flight Crew	Approved Training Organization (ATO)	USD 1500	USD 1000/year	USD 1000
2		English Language Proficiency Certificate (ELPC)	5000	N/A	N/A
3		Commercial Pilot License (CPL)	7500	7500 (2yrs)	NA
4		Airline Transport Pilot License (ATPL)	10,000	10,000 (2yrs)	NA
5		Type Rating Instructor	7500	7,500 (3yrs)	NA
6		Type Rating Examiner	10,000	10,000 (3yrs)	NA
7		Pilot in Command	15,000	NA	NA
8		Additional Aircraft Type Rating	5000	NA	NA
9		Foreign License Validation (FLVC) CPL/ATPL for 90 days	5000	5000	NA
10	Aircraft Maintenance Engineer (Certifying and Support staff)	Aircraft Maintenance Engineer License (AMEL)	5000	5,000 (2yrs)	NA
11		Additional AME Categories	2,500	N/A	N/A
12		Type Rating for AMEL	2,500	NA	NA
13		Foreign License Validation (FLVC) AME for 90 days	2000	2000	N/A
14		Maintenance Training Organization (MTO)	USD 1500	USD 1000/year	USD 1000
15	Air Traffic Controller	Air Traffic Control License	5000	5000 (2yrs)	NA
16	Flight Operations Officer/Dispatcher	Flight Operations Officer License	5000	5000 (2yrs)	NA
17	Examination	Examination fee per paper in all category	500	N/A	N/A
18	Others	Other license/certificate/ Authorization not specified above	2,000	2,000	NA

BHUTAN AIR NAVIGATION REGULATIONS
SECTION-12 FEES AND CHARGES

13. Late Submission of Fee

- a) Less than 06 months 10% of renewal fee (Renewal Evaluation + License Fee).
- b) Beyond 06 months 20% of renewal fee (Renewal Evaluation + License Fee).



BHUTAN AIR NAVIGATION REGULATIONS



SECTION 13 - AERIAL WORK

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION- 13 - Aerial Work

13.1 Aerial Work

The regulations for Aerial Work shall be in accordance with the provisions of BCAR-Aerial Work.

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BHUTAN AIR NAVIGATION REGULATIONS



SECTION 14 - Aerodromes/Heliports

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.1 GENERAL

14.1.1 This regulation shall apply to the following:

- a) Certification of aerodromes and the requirements that apply to operators of certified aerodromes;
- b) Reporting and inspection requirements that apply to operator(s) of certified land aerodromes used for air transport operations both domestic and/ or international, whether such operations are regular or scheduled or otherwise, and are for the carriage of passengers, freight or mail by persons or organizations holding permissions issued by the Bhutan Civil Aviation Authority;
- c) Matters dealing with obstacles and hazards in airspace; and
- d) Aerodrome operational services including rescue and firefighting services.

14.1.2 Use of aerodromes

An aircraft shall not take off or land at any place in Bhutan unless:

- a. The place has been certified as an aerodrome under these regulations or
- b. The use of the place is specifically or generally authorized by the Head of the Authority(HoA);
- c. The aircraft is of a type authorized under this authorization to land and take off from the place, and
- d. The aircraft is engaged in operation of a class specified by HoA in the instrument of authorization for that place and unless the aircraft complies with any conditions subject to which the aerodrome may have been certified subject to which the place may have been authorized.

14.1.3 Control of Aerodromes.

14.1.3.1 All aerodromes within the Kingdom of Bhutan shall be operated and controlled by the Bhutan Civil Aviation Authority (BCAA).

14.1.4 Use for Public Transport and Flying Instruction.

14.1.4.1 An aircraft or helicopter used for Public Transport or Flying Instruction shall not take-off or land at a place in Bhutan other than at a Government aerodrome notified as available for take-off or landing of such an aircraft, and in accordance with such conditions as have been notified as specific to that activity.

14.1.5 Dangerous lights

14.1.5.1 A person shall not exhibit in Bhutan any light which;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- a) by reason of its glare is liable to endanger aircraft taking off from or landing at an aerodrome; or
- b) by reason of its liability to be mistaken for an aeronautical ground light is liable to endanger aircraft

14.1.5.2 If any light is identified by the BCAA as being such a light as described in 14.1.5 the HoA may cause a notice to be served upon the person having charge of the light, directing that person to take such steps as may be specified in the notice for removing, extinguishing or screening the light and for preventing in the future exhibiting of any other light which may similarly endanger aircraft.

14.2 AERODROME STANDARDS

14.2.1 Any reference to standards, in these regulations of Section 14, Volume I, is a reference to the Bhutan Aerodrome Standards as amended from time to time.

14.2.2 Aerodrome operators shall comply with the standards that are required by the Bhutan Aerodrome Standards as appropriate to the operations conducted at the aerodrome and the requirements for the aircraft using the aerodrome. Aerodrome operators shall also ensure to conform to the ICAO Annex 14, Volume I - Aerodrome Design and Operations. Where there is requirements conflict, Bhutan Aerodrome Standards shall take precedence.

14.3 AERODROME CERTIFICATION

14.3.1 Requirement of an aerodrome certificate:

14.3.1.1 The operator of an aerodrome intended for public use shall be in possession of an Aerodrome Certificate issued by the Bhutan Civil Aviation Authority when:

- a) The aerodrome is used for any international air transportation operation;
- b) The aerodrome is used for any national air transportation operation;
- c) At the request of the aerodrome operator.

14.3.1.2 An Aerodrome Certificate is required if the passenger-seating capacity of the aircraft employed in the operation exceeds 20 seats; and

14.3.1.3 The operator of an aerodrome for which an aerodrome certificate is not required may nevertheless apply for an aerodrome certificate.

14.3.2 Application for an aerodrome certificate

- a) An applicant shall apply to the HoA for an aerodrome certificate authorizing the applicant to operate an aerodrome at the place specified in the application.
- b) The application shall be in the form prescribed by the BCAA and inclusive the Aerodrome Manual.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.3.3 Grant of an aerodrome certificate

14.3.3.1 Subject to the provisions in regulations 14.3.3.2 the HoA may approve the application and grant an aerodrome certificate to the applicant.

14.3.3.2 Before granting an aerodrome certificate, the following requirements must be fulfilled:

- a. The aerodrome facilities, services and equipment are in accordance with the standards specified by the Bhutan Aerodrome Standards;
- b. The aerodrome's operating procedures make satisfactory provision for the safety of aircraft;
- c. The Aerodrome Manual is accepted by the BCAA and meets the requirements established in section 14.4 of this regulation;
- d. The aerodrome operator staff have the necessary competence and experience to operate and maintain the aerodrome properly; and
- e. An acceptable Safety Management System in place at the Aerodrome.

14.3.4 Refusal to grant an Aerodrome Certificate

14.3.4.1 If the HOA refuses to grant an Aerodrome Certificate, the applicant shall be provided with a written notice of the refusal stating the reasons not later than 14 days after the refusal to grant the certificate.

14.3.5 Endorsement of conditions

14.3.5.1 The HoA may grant an aerodrome certificate subject to any conditions necessary in the interests of safety.

14.3.5.2 The HoA shall give an applicant a written notice of the reasons for any conditions applied to the certificate.

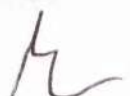
14.3.5.2.1 A condition must be set out in an endorsement on the certificate or otherwise notified in writing to the certificate holder.

14.3.6 Duration of an Aerodrome Certificate

An Aerodrome Certificate shall remain in force until it is suspended/cancelled or revoked.

14.3.7 Surrender or cancellation of an Aerodrome Certificate by the holder

14.3.7.1 If the holder of an Aerodrome Certificate wishes to surrender/cancel the certificate, the holder shall give the HoA not less than 60 days written notice of the date on which the certificate is to be surrendered in order that suitable promulgation action can be taken.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.3.7.2 The HoA shall cancel the certificate on the date specified in the notice.

14.3.7.3 Upon the surrender/cancellation of aerodrome certificate, the certificate holder shall return the aerodrome certificate to the BCAA.

14.3.8 Cancellation/Suspension or Revocation of an Aerodrome Certificate by the BCAA

14.3.8.1 The HoA may by written notice, suspend/cancel or revoke an Aerodrome Certificate based on a reasonable grounds that:

- a. A condition to which the certificate was subject has been breached; or
- b. The aerodrome facilities, operations or maintenance are not of the standard required in the interests of the safety of air navigation.

14.3.8.2 Before suspending or canceling an aerodrome certificate, the HoA shall:

- a. Give to the certificate holder a show cause notice in writing that:
 - i. Sets out the facts and circumstances that, in the opinion of the BCAA, would justify the cancellation; and
 - ii. Invite the holder to show cause, in writing, within thirty (30) days after the date of the notice, why the certificate should not be cancelled.
- b. Take into account any written submissions that the holder makes to the BCAA within the time allowed under sub-paragraph a) (ii).

14.3.8.3 Notice of suspension or cancellation has effect on the day it is served on the Aerodrome Certificate Holder.

14.3.9 Transfer of an aerodrome certificate.

14.3.9.1 An aerodrome certificate is non transferable.

14.3.10 Responsibility of identifying aerodromes that are required to be certified

14.3.10.1 The Aerodrome operator shall be responsible for identifying aerodromes that are required to be certified by BCAA.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.3.11 Promulgation in the AIP of the certified status of the aerodrome

Upon satisfactory completion of the certification process, the Aerodrome operator shall publish in AIP the information about the aerodrome including exemptions as may be applicable.

14.3.12 Renewal of Aerodrome certificate

The Aerodrome operator shall renew the Aerodrome certificate through HoA, BCAA in the event of leasing out Aerodrome operations to private parties.

14.3.13 Amendment to an Aerodrome Certificate

14.3.13.1 The certified aerodrome operator shall request BCAA for the amendment of the aerodrome certificate as established in Section 14.3.3 when:

- a. There is a change in the ownership or management of the aerodrome;
- b. There is a change in the use or operation of the aerodrome;
- c. There is a change in the boundaries of the aerodrome;
- d. There is any change on the original conditions of the aerodrome certification including facilities, equipment; or
- e. At the request of the aerodrome certificate holder.

14.3.14 Interim Aerodrome Certificate

- a) The HoA may issue an interim certificate to the applicant authorizing the applicant to operate an aerodrome. An aerodrome certificate in respect of the aerodrome will be issued to the applicant as soon as the application procedure for the grant of an aerodrome certificate has been completed; and
- b) The grant of the interim certificate is in the public interest and is not detrimental to aviation safety
- c) An interim aerodrome certificate issued shall expire on the date on which the aerodrome certificate is issued; or the expiry date specified in the interim aerodrome certificate; whichever is earlier.
- d) The regulation applied to an interim aerodrome certificate is same as it is applied to an aerodrome certificate.

14.4 AERODROME MANUAL

14.4.1 Preparation of an Aerodrome Manual

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.4.1.1 The operator of a certified aerodrome shall have a Manual, to be known as the Aerodrome Manual for the aerodrome.

a) The Aerodrome Manual shall:

- i. Be type written or printed and signed by the aerodrome operator;
- ii. Be in a format that is easy to revise;
- iii. Have a system for recording the currency of page and amendments, thereto, and should include a page for logging revisions-; and
- iv. Be organized in a manner that will facilitate the preparation and review processes.

14.4.2 Location of an Aerodrome Manual

14.4.2.1 The aerodrome operator shall provide the HoA with a complete and current copy of the Aerodrome Manual.

14.4.2.2 The aerodrome operator shall keep at least one complete and current copy of the Aerodrome Manual at the aerodrome and, additionally at least one copy at the operator's principal place of business, if different from the aerodrome.

14.4.2.3 The operator of a certificated aerodrome shall keep the copies of the Aerodrome Manual referred to in sub-regulation 14.4.2.2 above in a printed form.

14.4.2.4 Other copies of the manual may be held in an electronic form.

14.4.3 Information to be included in the Aerodrome Manual

14.4.3.1 The operator of a certified aerodrome must include the following particulars in an aerodrome manual, to the extent that they are applicable to the aerodrome, under the following parts:

Part 1. General information including –

- i. Purpose and scope of the aerodrome manual;
- ii. The legal requirement for an aerodrome certificate and an aerodrome manual;
- iii. Conditions for use of the aerodrome - a statement to indicate that the aerodrome shall at all times, when it is available for the take-off and landing of aircraft, be so available to all persons on equal terms and conditions;
- iv. The available aeronautical information system and procedures for its promulgation; and

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- v. The system for recording aircraft movements; and obligations of the aerodrome operator

Part 2: Particulars of the aerodrome site

- i. A plan of the aerodrome showing the main aerodrome facilities particularly, the location of each wind direction indicator;
- ii. A plan of the aerodrome showing the aerodrome boundaries;
- iii. A plan showing the distance of the aerodrome from the nearest town or other populous area, and the location of any aerodrome facilities and equipment outside the boundaries of the aerodrome; and
- iv. Titles to properties associated with the aerodrome site, the property on which the aerodrome is located and a plan showing the boundaries and position of the aerodrome.

Part 3: Information required to be reported in aeronautical information publication (AIP)

- i. the name of the aerodrome;
- ii. the location of the aerodrome;
- iii. the geographical coordinates of the aerodrome reference point determined in terms of the World Geodetic System — 1984 (WGS-84) reference datum;
- iv. the aerodrome elevation and geoid undulation;
- v. the aerodrome reference temperature;
- vi. details of the aerodrome beacon; and
- vii. the name of the aerodrome operator and the address and telephone numbers at which the aerodrome operator may be contacted at all times.
- viii. Aerodrome dimensions and related information including:
 - elevation of each threshold and geoid undulation, the elevation of the runway end and any significant high and low points along the runway;
 - length, width and surface type of strip, runway end safety areas, stopways; length, width and surface type of taxiways; apron surface type and aircraft stands;
 - clearway length and ground profile;
 - pavement surface type and bearing strength using the Aircraft Classification Number - Pavement Classification Number (ACN-PCN) method;
 - one or more pre-flight altimeter check locations established on an apron and their elevation;



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- declared distances: take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA), landing distance available (LDA).
- disabled aircraft removal plan: the telephone/telex/ facsimile numbers and e-mail address of the aerodrome coordinator for the removal of a disabled aircraft on or adjacent to the movement area, information on the capability to remove a disabled aircraft, expressed in terms of the largest type of aircraft which the aerodrome is equipped to remove; and
- rescue and fire-fighting: the level of protection provided, expressed in terms of the category of the rescue and fire-fighting services, which should be in accordance with the longest aeroplane normally using the aerodrome and the type and amounts of extinguishing agents normally available at the aerodrome.

Part 4: The particulars of the aerodrome operating procedures.

- i. Aerodrome reporting - Particulars of the procedures for reporting any changes to the aerodrome information set out in the AIP and procedures for requesting the issue of NOTAMs, including the following:
- ii. Access to the aerodrome movement area - Particulars of the procedures that have been developed and are to be followed in coordination with the agency responsible for preventing unlawful interference in civil aviation at the aerodrome and for preventing unauthorized entry of persons, vehicles, equipment, animals or other things into the movement area, including the following:
 - a. Particulars of the aerodrome emergency plan;
 - b. Rescue and firefighting - Particulars of the facilities, equipment, personnel and procedures for meeting the rescue and firefighting requirements, including the names and roles of the persons responsible for dealing with the rescue and fire-fighting services at the aerodrome;
 - c. Inspection of the aerodrome movement area and obstacle limitation surface by the aerodrome operator including particulars of the procedures for the inspection of the aerodrome movement area and obstacle limitation surfaces;
 - d. Visual aids including particulars of the procedures for the inspection and maintenance of signs and markers;
 - e. Maintenance of the movement area including particulars of the facilities and procedures for the maintenance of the movement area;

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- f. Aerodrome works – Safety including particulars of the procedures for planning and carrying out construction and maintenance work safely on or in the vicinity of the movement area which may extend above an obstacle limitation surface;
- g. Particulars of the apron management procedures and apron safety management;
- h. Airside vehicle control procedure for the control of surface vehicles operating on or in the vicinity of the movement area;
- i. Wildlife hazard management procedures to deal with the danger posed to aircraft operations by the presence of birds or mammals in the aerodrome flight pattern or movement area;
- j. Procedures for monitoring the obstacle limitation surfaces and Type A Chart for obstacles in the take-off surface; controlling obstacles within the authority of the operator; monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces; controlling new developments in the vicinity of aerodromes; and notifying the BCAA of the nature and location of obstacles and any subsequent addition or removal of obstacles for action as necessary, including amendment of the AIS publications.
- k. Procedures for removal of disabled aircraft on or adjacent to the movement area including the roles of the aerodrome operator and the holder of the aircraft certificate of registration; arrangements for notifying; arrangements for obtaining equipment and personnel to remove the disabled aircraft; and handling of hazardous materials;
- l. Low-visibility operation procedures to be introduced for low-visibility operations.
- m. Protection of sites for navigational aids located on the aerodrome to ensure that their performance will not be degraded, including control of activities in the vicinity of nav aids installations;

Part 5: Details of the aerodrome administration and the safety management system:

- i. Particulars of the aerodrome administration, including the following:
 - a) An aerodrome organizational chart showing the names and positions of key personnel, including their responsibilities;
 - b) The name, position and telephone number of the person who has overall responsibility for aerodrome safety; and
 - c) Airport committees
 - d) The framework for the implementation and maintenance of an SMS shall comprise of four components and twelve elements as the minimum requirements for SMS implementation:



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- Safety policy and objectives
 - Management commitment and responsibility
 - Safety accountabilities
 - Appointment of key safety personnel
 - Coordination of emergency response planning
 - SMS documentation
- Safety risk management
 - Hazard identification
 - Safety risk assessment and mitigation
- Safety assurance
 - Safety performance monitoring and measurement
 - The management of change
 - Continuous improvement of the SMS
- Safety promotion
 - Training and education
 - Safety communication

14.4.4 Revision and amendment or variation of information of Aerodrome Manual

- 14.4.4.1 The operator of a certified aerodrome shall alter or amend the Aerodrome Manual, whenever necessary, in order to maintain the accuracy of the manual.
- 14.4.4.2 To maintain the accuracy of the Aerodrome Manual, the HoA may issue written directions to the aerodrome operator to alter or amend the manual in accordance with the direction.

14.4.5 Notification of changes

- 14.4.5.1 An aerodrome operator shall notify the HoA as soon as practicable, of any alterations that the operator wishes to make to the Aerodrome Manual.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

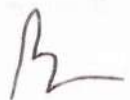
14.5 OBLIGATIONS OF THE AERODROME OPERATOR

14.5.1 Compliance with standards

- 14.5.1.1 The aerodrome operator shall comply with the standards specified in section 14.3.3 and with any conditions endorsed in the certificate pursuant to subsection 14.3.5.
- 14.5.1.2 The Aerodrome operator of a certified aerodrome must ensure that the operations and maintenance of the aerodrome are carried out with a reasonable degree of care and diligence.
- 14.5.1.3 The Aerodrome operator of a certified aerodrome must ensure that they have established the Runway safety team as per requirement.
- 14.5.1.4 The Aerodrome operator shall determine pavement bearing strength including information concerning the capability to remove disabled aircraft from the maneuvering areas.
- 14.5.1.5 The Aerodrome operator shall conduct necessary study/assessment of presence of wildlife (birds and animals) on and in the aerodrome vicinity aerodrome which can pose serious threat to aircraft operational safety including assessment, recording and reporting of wildlife strike on aircraft.
- 14.5.1.6 The Aerodrome operator shall determine and define an aerodrome reference code, determined in accordance with the characteristics of the aeroplane for which an aerodrome facility is intended, to be used for planning purposes.
- 14.5.1.7 The Aerodrome operator shall establish aerodrome visual aids for navigation including indicators and markings and denoting restricted use areas.
- 14.5.1.8 The Aerodrome operator shall determine runway friction characteristics at regular intervals including defining the minimum maintenance level.

14.5.2 Competence of operational and maintenance personnel

- 14.5.2.1 The aerodrome operator shall employ adequate numbers of qualified and skilled personnel for performing all critical activities in the aerodrome operation and maintenance processes.
- 14.5.2.2
- 14.5.2.3 Where the HoA or any other competent authority of the government has prescribed competency certification requirement for personnel referred to in regulation 14.5.2.1, the aerodrome operator shall only those persons possessing such certificates.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.5.2.4 The aerodrome operator shall implement a programme to upgrade the competency of the personnel referred to in regulation 14.5.2.1.

14.5.3 Aerodrome manual controller

14.5.3.1 The operator of a certified aerodrome shall appoint an aerodrome manual controller. The functions of the aerodrome manual controller are to ensure that:

- i. A distribution record is maintained for the holder of each copy, in whole or in part, of the manual; and
- ii. Updates of the manual are provided appropriately to all holders.

14.5.4 Reporting officer

14.5.4.1 The operator of a certified aerodrome shall appoint one or more reporting officers for the aerodrome.

14.5.4.2 The functions of a reporting officer are:

- i. to monitor the serviceability of the aerodrome; and
- ii. to report to the NOTAM Office (AIS) and air traffic control any changes in conditions, or any other occurrences, at the aerodrome that must be reported under 14.5.21.1.

14.5.4.3 The operator shall not appoint a person as a reporting officer if the person has not been trained to perform the reporting officer's functions.

14.5.5 Works safety officer for aerodrome works other than time-limited works

14.5.5.1 If aerodrome works (other than time-limited works) are being carried out at a certified aerodrome, the operator of the aerodrome shall appoint one or more persons as works safety officers for the aerodrome works.

14.5.5.2 The function of a works safety officer is to ensure aerodrome safety while the aerodrome works are being carried out.

14.5.6 Works safety officer for time-limited works

14.5.6.1 If time-limited works are being carried out at a certified aerodrome, the operator of the aerodrome shall ensure that a person who has been trained to perform the function of a works safety officer performs that function for those works.

14.5.6.2 The function of a works safety officer is to ensure aerodrome safety while the aerodrome works are being carried out.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.5.6.3 The operator shall not appoint a person to perform as a works safety officer if the person has not been trained, in accordance with aerodrome standards, to perform the works safety officer's functions.

14.5.7 Aerodrome safety officer

14.5.7.1 The operator of the certified aerodrome shall appoint an aerodrome safety officer, responsible for providing guidance and direction for the operation of the aerodrome safety management system.

14.5.8 Competence of operational and maintenance personnel

14.5.8.1 The aerodrome operator shall employ adequate numbers of qualified and skilled personnel for performing all critical activities in the aerodrome operation and maintenance processes.

14.5.8.2 Where the Head of the Authority or any other competent authority of the government has prescribed competency certification requirements for personnel referred in 14.5.8.1, the aerodrome operator shall employ only those persons possessing such certificates.

14.5.8.3 The aerodrome operator shall implement a programme to upgrade the competency of the personnel referred in 14.5.8.1.

14.5.9 Coordination with other service providers

14.5.9.1 The aerodrome operator shall coordinate with ATS provider in order to be satisfied that appropriate air traffic services are available to ensure the safety of aircraft in the airspace associated with the aerodrome.

14.5.9.2 The coordination shall cover other areas related to safety such as aeronautical information services, designated meteorological authorities, and security.

14.5.10 Physical characteristics of the movement area

14.5.10.1 The operator of a certified aerodrome shall ensure that the physical characteristics of the movement area comply with the standards and recommended practices set out in the Bhutan Aerodrome Standards.

14.5.11 Obstacle limitation surfaces

14.5.11.1 An aerodrome operator shall ensure that obstacle limitation surfaces are established for the aerodrome in accordance with the standards set out in the Bhutan Aerodrome Standards.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.5.12 Visual aids for navigation

14.5.12.1 An aerodrome operator shall ensure that visual aids for navigation of aircraft are established for the aerodrome in accordance with the standards and recommended practices set out in the Bhutan Aerodrome Standards.

14.5.12 Visual aids for denoting obstacles and restricted use areas

14.5.12.1 An aerodrome operator shall ensure that visual aids for denoting obstacles and restricted use areas at the aerodrome are provided in accordance with the standards and recommended practices set out in the Bhutan Aerodrome Standards.

14.5.13 Electrical systems

14.5.13.1 An aerodrome operator shall ensure that electrical power supply systems for air navigation facilities, its system design and monitoring at the aerodrome are carried out in accordance with the standards and recommended practices set out in the Bhutan Aerodrome Standards.

14.5.14 Aerodrome emergency plan

14.5.14.1 The operator of a certified aerodrome shall establish an aerodrome emergency committee and prepare an aerodrome emergency plan in accordance with requirements specified in the Bhutan Aerodrome Standards. The Aerodrome emergency Plan shall provide for the coordination of the actions to be taken in an emergency occurring at an aerodrome or in its vicinity. The emergencies are:

- a) Aircraft emergencies;
- b) Sabotage including bomb threats;
- c) Unlawful seizure of aircraft;
- d) Dangerous goods occurrences;
- e) Building fires;
- f) Natural disaster; and
- g) Public health emergencies.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.5.15 Rescue and Fire fighting

14.5.15.1 The operator of a certified aerodrome shall employ adequate trained personnel; provide necessary equipment and facilities to establish rescue and fire fighting services at the aerodrome in accordance with requirements specified in Bhutan Aerodrome Standards.

14.5.16 Aerodrome serviceability inspections

14.5.16.1 An **aerodrome serviceability inspection** is an inspection of the aerodrome to ensure that it is safe for aircraft operations.

14.5.16.2 The aerodrome operators shall carry out aerodrome serviceability inspections:

- a) On each day on which an airline service operates at the aerodrome; or
- b) In any other case - at least twice a week.

14.5.16.3 The inspection must comply with all applicable standards for aerodrome serviceability inspections set out in the Bhutan Aerodrome Standards.

14.5.17 Aerodrome technical inspections

14.5.17.1 An **aerodrome technical inspection** is an inspection of aerodrome facilities for an aerodrome to ensure that any deterioration that could make a facility unsafe for aircraft operations is detected.

14.5.17.2 Aerodrome operators shall carry out technical inspection of aerodrome facilities, equipment and services at regular intervals not exceeding 12 months by a person or persons with appropriate technical qualifications and experience.

14.5.17.3 The inspection must comply with all applicable standards for aerodrome technical inspections set out in the Bhutan Aerodrome Standards.

14.5.18 Special Inspections

14.5.18.1 An aerodrome operator shall inspect or arrange for inspection of an aerodrome, as the circumstances requires ensuring of aviation safety:

- a) As soon as practicable, after an aircraft accident or incident within the meaning of these terms defined in ICAO Annex 13 and the States notification procedure for notifying incidents and accidents;



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- b) During any period of construction or repair of the aerodrome facilities or equipment that is critical to the safety of aircraft operations; and
- c) At any other time when there are conditions at the aerodrome that could affect aviation safety.

14.5.19 Planning and execution of aerodrome works

- 14.5.19.1 The operator of a certified aerodrome shall ensure that any aerodrome works at the aerodrome are carried out in a way that does not create a hazard to aircraft, or confusion to pilots.
- 14.5.19.2 The operator shall comply with the requirements of Aerodrome Standards in relation to planning and notice requirements that shall be satisfied before aerodrome works may be carried out.

14.5.20 Aerodrome operation and maintenance

- 14.5.20.1 Subject to any directions that the HoA may issue, the aerodrome operator shall operate and maintain the aerodrome in accordance with the procedures set out in the Aerodrome Manual.
- 14.5.20.2 To ensure the safety of aircraft, the HoA may give written directions to an aerodrome operator to alter the procedures set out in the Aerodrome Manual.
- 14.5.20.3 The aerodrome operator shall ensure that proper and efficient maintenance of the aerodrome facilities are being carried out.

14.5.21 Notifying and reporting

- 14.5.21.1 An aerodrome operator shall adhere to the requirements of notifying and reporting, within the specified time limits, to the HoA, air traffic control and pilots, as required in these regulations.
- 14.5.21.2 Notification of inaccuracies in Aerodrome Information Service (AIS) publications. An aerodrome operator shall review the issue of Aeronautical Information Publication (AIP), AIP Supplements, AIP Amendments, Notice to Airmen (NOTAMS), Pre-flight Information Bulletins and Aeronautical Information Circulars issued by the AIS on receipt, thereof, and immediately after such reviews, notify AIS of any inaccurate information contained, therein, that pertains to the aerodrome.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

14.5.21.3 Notification of changes in aerodrome facilities, equipment, and level of service planned in advance.

14.5.21.4 An aerodrome operator shall notify AIS and the HoA in writing at least 60 days before any change to an aerodrome facility or equipment or the level of service at the aerodrome that has been planned in advance and that is likely to affect the accuracy of the information contained in any AIS publication referred to in subsection 14.5.21.2.

a) Issues requiring immediate notification:

Subject to the requirements in subsection 14.5.21.2, an aerodrome operator shall give to AIS and cause to be received at air traffic control and the flight operations unit, immediate notice giving details of any of the following circumstances of which the operator has the knowledge:

b) Obstacles, obstructions and hazards:

- any projections by an object through an obstacle limitation surface relating to the aerodrome; and
- the existence of any obstruction or hazardous condition affecting aviation safety at or near the aerodrome;

i. level of service:

- reduction in the level of service at the aerodrome set out in AIS publications referred to in subsection 14.5.21.2.

ii. movement area:

- closure of any part of the movement area of the aerodrome; and

iii. any other condition that could affect aviation safety at the aerodrome and against which precautions are warranted.

c) Immediate notification to pilots;

d) When it is not feasible for an aerodrome operator to cause notice of a circumstance referred to in subsection 14.5.21.4 to be received at the air traffic control or a flight operations unit in accordance with that regulation,



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

the operator must give immediate notice directly to the pilot who may be affected by that circumstance.

14.5.22 Removal of obstruction from aerodrome surface

14.5.22.1 An aerodrome operator shall remove, or arrange for the removal of, other obstructions from the surface of the aerodrome or any vehicle that is likely to be hazardous.

14.5.23 Warning notices

14.5.23.1 Where low flying aircraft, at or near an aerodrome, or taxiing aircraft are likely to be hazardous to people or vehicular traffic, the aerodrome operator shall:

- i. post notices warning of the hazard on any public way that is adjacent to the maneuvering area; or
- ii. if such a public way is not controlled by the aerodrome operator, inform the authority responsible for posting the notices on the public way that there is a hazard.

14.5.24 Access to aerodrome

14.5.24.1 Personnel authorized by the HoA may inspect and carry out tests/audits on the aerodrome facilities, services and equipment, inspect aerodrome operator's documents and records, and verify the aerodrome operator's safety management system before the aerodrome certificate is granted or renewed and subsequently, at any other time, for the purpose of ensuring safety and order at the aerodrome.

14.5.24.2 An aerodrome operator shall, at the request of the person referred to in regulation 14.5.24.1, allow access to any part of the aerodrome or, any aerodrome facility, including equipment, records, documents and operator's personnel for the purpose referred to in sub section 14.5.24.1.

14.5.24.3 The aerodrome operator shall co-operate in conducting the activities referred to in sub-section 14.5.24.1.

14.5.25 Aerodrome operator's safety management

14.5.25.1 The aerodrome operator shall establish a safety management system for the aerodrome describing the structure of the organization and the duties, powers and responsibilities of the officials in the organizational structure, with a view

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

to ensuring that operations are carried out in a demonstrably controlled way and are improved where necessary.

14.5.25.2 The aerodrome operator shall oblige all the users of the aerodrome including aircraft operators and which perform activities independently at the aerodrome in relation to flight or aircraft handling, to comply with the requirements laid down by the aerodrome operator with regard to safety and order at the aerodrome, and shall monitor such compliance.

14.5.25.3 The aerodrome operator shall oblige all the users of the aerodrome including aircraft operator and organizations referred to in regulation 14.5.25.2 to cooperate in the programme to promote safety and order at, and the safe use of, the aerodrome by immediately informing it of the accidents, incidents, defects and faults which have bearing on safety.

14.5.26 Aerodrome operator's internal safety audits and safety reporting

14.5.26.1 The aerodrome operator shall arrange for an audit of the safety management system including an inspection of the aerodrome facilities and equipment. The audit shall cover the aerodrome operator's own functions. The aerodrome operator shall also arrange an external audit and inspection programme for evaluation of other users including fixed-base operators and organizations working at the aerodrome referred to in sub-section 14.5.25.2.

14.5.26.2 The audits referred to in regulation 14.5.26.1 shall be carried out every 12 months or less, as agreed with the Aerodrome Operator.

14.5.26.3 The aerodrome operator shall ensure that the audit reports including the report on the aerodrome facilities, services and equipment are prepared by suitably qualified safety experts.

14.5.26.4 The aerodrome operator shall retain a copy of the report(s) referred to in regulation 14.5.26.3 for a period of two years. The HoA may request for a copy of the report(s) for its review/reference.

14.5.26.5 The reports referred to in regulation 14.5.26.3 must be prepared and signed by the persons who carried out the audit and inspection.

14.6 EXEMPTIONS

14.6.1 The HoA may exempt, in writing, an aerodrome operator from compliance with specified provisions of these regulations.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14 - Aerodromes

- 14.6.2 Before the HoA decides to exempt the aerodrome operator; the HoA shall take into account all the relevant considerations relating to the safety of air navigation.
- 14.6.3 An exemption is subject to the aerodrome operator complying with the conditions/procedures specified by the HoA in the aerodrome certificate as being necessary in the interests of safety.
- 14.6.4 The aerodrome operator shall present an aeronautical study to the BCAA that contains a risk analysis of that non-compliant aerodrome Standards and demonstrates that the level of air navigation safety is acceptable to the BCAA.
- 14.6.5 Where an aerodrome does not meet the requirement of a standard specified in 14.2.2, the HoA may determine, after carrying out aeronautical studies, such conditions and procedures relating to the standards as are necessary to ensure a level of safety equivalent to that established by the standard.
- 14.6.6 The deviation from a standard and the conditions and procedures referred to in 14.3.5 shall be set out in an endorsement on the aerodrome certificate or otherwise in writing. If an exemption is provided otherwise in writing it shall be incorporated in the aerodrome manual.
- 14.6.7 The validity of any exemption is dependent on the operator complying with any condition that BCAA specifies in the exemption as being necessary in the interests of safety of air navigation.
- 14.6.8 The aerodrome operator shall comply with a condition specified in the exemption.

14.7 Categorization of audit finding

- 14.7.1 Audit finding of non-compliance with the regulation or Bhutan aerodrome standards or guidance materials shall be categorized as Level 1, Level 2 or Level 3 depending on the seriousness of finding.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14B - Heliports

14.1B Applicability

14.1.2B This regulation is derived from and based upon ICAO Annex 14, Volume II, Heliports and helipads, which contains Standards and Recommended Practices (specifications) that prescribe the physical characteristics and obstacle limitation surfaces to be provided for at heliports and helipads, and certain facilities and technical services normally provided at a heliport.

14.1.3B the specifications shall apply to all heliports and helipads and helipads intended to be used by helicopters in Bhutan. The specifications of Section 14 volume I- Aerodromes shall apply, where appropriate, to these heliports and helipads and helipads as well.

14.1.4B wherever a colour is referred hereunder, the specifications for that colour given in Appendix 1 to Section 14 volume I - Aerodromes and/or ICAO Annex 14, Volume I, shall apply.

14.2B Aeronautical data

14.2.1B The regulation for determination and reporting of heliport and helipad related aeronautical data shall be in accordance with the accuracy and integrity requirements set forth in Bhutan aerodrome standards volume II.

14.3B Physical Characteristics

14.3.1B Surface-level heliports and helipads

Final approach and take-off areas

A surface-level heliport shall be provided with at least one FATO.

14.3.2B the dimensions of a FATO shall be:

- i. for a heliport intended to be used by performance class 1 helicopters, the width shall be not less than 1.5 times the over-all length/width, whichever is greater, of the longest/ widest helicopter the heliport is intended to serve;
- ii. for a heliport intended to be used by performance class 2 and 3 helicopters, of sufficient size and shape to contain an area within which can be drawn a circle of diameter not less than 1.5 times the over-all length/width, whichever is greater, of the longest/widest helicopter the heliport is intended to serve; and

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14B - Heliports

14.3.3B the over-all slope in any direction on the FATO shall not exceed 3 percent. No portion of a FATO shall have a local slope exceeding:

- i. 5 per cent where the heliport is intended to be used by performance class 1 helicopters; and
- ii. 7 per cent where the heliport is intended to be used by performance class 2 and 3 helicopters.

14.3.4B the surface of the FATO shall:

- a. be resistant to the effects of rotor downwash;
- b. be free of irregularities that would adversely affect the take-off or landing of helicopters; and
- c. have bearing strength sufficient to accommodate a rejected take-off by performance class 1 helicopters.

14.3.5B The FATO should provide ground effect.

14.4B Helicopter clearways

14.4.1B when it is necessary to provide a helicopter clearway, it shall be located beyond the upwind end of the rejected take-off area available.

14.4.2B the width of a helicopter clearway should not be less than that of the associated safety area.

14.4.3B the ground in a helicopter clearway should not project above a plane having an upward slope of 3 per cent, the lower limit of this plane being a horizontal line which is located on the periphery of the FATO.

14.4.4B an object situated on a helicopter clearway which may endanger helicopters in the air should be regarded as an obstacle and should be removed.

14.5B Touchdown and lift-off areas

14.5.1B at least one touchdown and lift-off area shall be provided at a heliport.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14B - Heliports

14.5.2B the touchdown and lift-off area (TLOF) shall be of sufficient size to contain a circle of diameter 1.5 times the length or width of the undercarriage, whichever is the greater, of the largest helicopter the area is intended to serve.

14.5.3B slopes on a touchdown and lift-off area shall be sufficient to prevent accumulation of water on the surface of the area, but shall not exceed 2 per cent in any direction.

14.5.4B a touchdown and lift-off area shall be capable of withstanding the traffic of helicopters that the area is intended to serve.

14.6B Safety areas

14.6.1B A FATO shall be surrounded by a safety area.

14.6.2B a safety area surrounding a FATO intended to be used in visual meteorological conditions (VMC) shall extend outwards from the periphery of the FATO for a distance of at least 3 m or 0.25 times the over-all length/width, whichever is greater, of the longest/widest helicopter the area is intended to serve.

14.6.3B a safety area surrounding a FATO intended to be used by helicopter operations in instrument meteorological conditions (IMC) shall extend:

- Laterally to a distance of at least 45 m on each side of the centre line; and
- Longitudinally to a distance of at least 60 m beyond the ends of the FATO.

14.6.4B the regulation for other Physical Characteristics shall be in accordance with the Bhutan aerodrome standards volume II.

14.7B Obstacle Restriction and Removal

14.7.1B Obstacle limitation surfaces and sectors Approach surface

14.7.2B the slope(s) of the approach surface shall be measured in the vertical plane containing the centre line of the surface.

14.7.3B the limits of a transitional surface shall comprise:

- a. a lower edge beginning at the intersection of the side of the approach surface with the inner horizontal surface, or beginning at a specified height



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14B - Heliports

above the lower edge when an inner horizontal surface is not provided, and extending down the side of the approach surface to the inner edge of the approach surface and from there along the length of the side of the safety area parallel to the centre line of the FATO; and

- b. an upper edge located in the plane of the inner horizontal surface, or at a specified height above the lower edge when an inner horizontal surface is not provided.

14.7.4B the elevation of a point on the lower edge shall be:

- d) along the side of the approach surface - equal to the elevation of the approach surface at that point; and
- e) along the safety area - equal to the elevation of the centre line of the FATO opposite that point.

14.7.4B the slope of the transitional surface shall be measured in a vertical plane at right angles to the centre line of the FATO.

14.7.5B the radius of the inner horizontal surface shall be measured from the mid-point of the FATO.

14.7.6B the height of the inner horizontal surface shall be measured above an elevation datum established for such purpose.

14.7.7B the limits of the conical surface shall comprise:

- d) a lower edge coincident with the periphery of the inner horizontal surface, or outer limit of the transitional surface if an inner horizontal surface is not provided; and
- d) an upper edge located at a specified height above the inner horizontal surface, or above the elevation of the lowest end of the FATO if an inner horizontal surface is not provided.

14.7.8B the slope of the conical surface shall be measured above the horizontal.

14.7.9B the limits of a take-off climb surface shall comprise:

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14B - Heliports

- a. an inner edge horizontal and equal in length to the minimum specified width of the FATO plus the safety area, perpendicular to the centre line of the take-off climb surface and located at the outer edge of the safety area or clearway;
- b. two side edges originating at the ends of the inner edge and diverging uniformly at a specified rate from the vertical plane containing the centre line of the FATO; and
- c. an outer edge horizontal and perpendicular to the centre line of the take-off climb surface and at a specified height above the elevation of the FATO.

14.7.10B the elevation of the inner edge shall be the elevation of the safety area at the point on the inner edge that is intersected by the centre line of the take-off climb surface, except that when a clearway is provided, the elevation shall be equal to the highest point on the ground on the centre line of the clearway.

14.7.11B In the case of a straight take-off climb surface, the slope shall be measured in the vertical plane containing the centre line of the surface.

14.7.12B In the case of a take-off climb surface involving a turn, the surface shall be a complex surface containing the horizontal normals to its centre line and the slope of the centre line shall be the same as that for a straight take-off climb surface. That portion of the surface between the inner edge and 30 m above the inner edge shall be straight.

14.7.13B Any variation in the direction of the centre line of a take-off climb surface shall be designed so as not to necessitate a turn of radius less than 270 m.

14.7.14B Any other requirements in this section of the regulation shall be in accordance with the Bhutan Aerodrome Standards volume II disturbances caused by nearby objects or rotor downwash. It shall be visible from a helicopter in flight, in a hover or on the movement area.

14.8B Visual Aids

14.8.1B Heliport and helipads shall be equipped with at least one wind direction indicator.

14.8.2B A wind direction indicator shall be located so as to indicate the wind conditions over the final approach and take-off area and in such a way as to be free from the effects of airflow.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 14B - Heliports

14.8.3B A wind direction indicator shall be constructed so that it gives a clear indication of the direction of the wind and a general indication of the wind speed.

14.8.4B the colour of the wind direction indicator should be so selected as to make it clearly visible and understandable from a height of at least 200 m (650 ft) above the heliport, having regard to background. Where practicable, a single colour, preferably white or orange, should be used. Where a combination of two colours is required to give adequate conspicuity against changing backgrounds, they should preferably be orange and white, red and white, or black and white, and should be arranged in five alternate bands the first and last band being the darker colour.

14.8.5B the designs, specifications and requirements in this section of the regulation shall be in accordance with the Bhutan Aerodrome Standards volume II

14.9B Heliport and helipad Services

14.9.1B the heliports shall have firefighting services and certified helipads shall have adequate serviceable fire extinguishers in place.

14.10B Operation Manual

14.10.1B certified helipads shall have operation manuals for each designated helipad.

14.10.2B the designs, specifications and requirements for heliports and helipads not covered under this regulation shall be as per the provisions of Bhutan Aerodrome Standards volume II.



BHUTAN AIR NAVIGATION REGULATIONS



SECTION 15- Search and Rescue

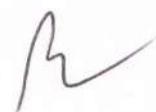
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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 15 - Search and Rescue

15.1. Search and Rescue

The regulation for search and rescue shall be in accordance with BCAR-12 (Search and Rescue).



BHUTAN AIR NAVIGATION REGULATIONS



SECTION 16 - Environmental Protection

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

16.1 Applicability:

- 16.1.1 This section applies to airport operators, aircraft operators, entities tenants and individuals who undertake activities on airport property.
- 16.1.2 The aviation environmental issues referred to in this Section are issues that relate to aircraft noise, aircraft emissions and land use planning on and surrounding airports
- 16.1.3 For any national related issues shall be as per National Environment Protection Act, 2007.

16.2 General Provisions:

- 16.2.1 The BCAA shall supervise all aspects of this section related to aviation environmental protection and its implementation. BCAA shall establish aviation environmental standards, procedures and requirements in accordance with international obligations, national laws and applicable regulations and required good practice sufficient to ensure proper aviation sector environmental practices and standards are applied and maintained. BCAA shall inspect and enforce the requirements of this section with respect to aviation environmental issues.
- 16.2.2 BCAA shall ensure that appropriate staff with environmental management expertise exists to coordinate the implementation of this Section and shall promptly communicate the name of the individual responsible for environmental management to each airport operator.
- 16.2.3 Within 6 months of the enactment of BANRs, each airport operator shall identify and, as necessary, train appropriate staff to ensure sufficient environmental management capacity to coordinate the implementation of this Section at the airport operator level and shall promptly communicate the name of the individual responsible for environmental management to the BCAA.
- 16.2.4 Airport operators shall adhere to the requirements of this Section as they apply to the airports for which they are responsible. Airport operators shall also ensure that all entities and individuals who undertake operations or other activities on their behalf meet the environmental standards, procedures and requirements set out in this Part. Where more than one entity has a responsibility for airport operations, each such entity shall meet the requirements set out in this section.
- 16.2.5 Entities and individuals that undertake activities on airport property shall undertake the actions necessary to comply with the requirements of this section.
- 16.2.6 All reports, charts, maps and other documents required to be provided to the BCAA by this section, shall be in both electronic and hard copy formats.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

16.3 Airport Noise:

16.3.1 Noise Reduction and Management Measures:

Specify and implement operational procedures to reduce noise levels in specific areas to become compatible with the existing land use and Prepare, in consultation with the appropriate authorities, a Noise Reduction and Management Plan to be implemented in the case where the operational procedures to reduce noise were ineffective in reaching compatible noise levels.

16.3.2 Operational Procedures to Reduce Noise:

16.3.1.1 Where the airport operator receives an order from the BCAA to specify and implement operational procedures to reduce noise at the airport, the airport operator shall consider the following, in consultation with the concerned parties, among other things that may be specified by the BCAA:

- a) Selection of runways to reduce noise in adjacent communities
- b) Delayed engine start up
- c) Use of ground power units in place of auxiliary power units
- d) Application of continuous descent approach procedures
- e) Use of low power/low drag procedure
- f) Minimizing flap angles
- g) Reduced use of reverse thrust
- h) Taxiing with fewer engines running
- i) Joining the instrument landing slope from a higher angle
- j) Enforced shut down of engines while on the apron/ramp
- k) Requirements for aircraft to maintain airspace allotted for takeoff and landing
- l) Imposing curfews

16.3.1.2 The airport operator shall specify, and forward to the BCAA, operational measures within 30 working days of an order being issued by the BCAA under this Section after consulting with all relevant airport operational units.

16.3.1.3 The BCAA shall give its determination on the specified operational measures within 30 working days of receipt of the measures.

16.3.1.4 The airport operator shall implement operational procedures to reduce noise at the airport within 30 working days of the date of issuance of an approval by the BCAA.

16.4.3 Noise Reduction and Management Plan:

16.4.3.1 Where the airport operator receives an order to prepare a Noise Reduction and Management Plan under this Section, the airport operator shall develop a Noise Reduction and Management Plan to reduce noise levels in the non-compatible area to levels.

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

16.4.4 Noise Monitoring:

Airport Operator shall develop procedure and requirements to monitor noise levels at the airport to determine non-compliance with operational measure set to reduce noise.

16.5 Aircraft Engine Emissions:

16.5.1 Operation of Aircraft:

For the purpose of this Section, all civil aviation aircraft using Paro International Airports and domestic Airports shall meet the requirements.

16.5.2 Operational Procedures to Minimize Aircraft Engine Emissions:

16.5.2.1 Within 6 months of the implementation of this section, the airport operator shall submit to the BCAA operational procedures to reduce aircraft engine emissions at airports. The following procedures shall be considered in addition to others that the airport operator may specify:

- a) Delayed engine start up
- b) Use of ground power units in place of auxiliary power units
- c) Use of low power/low drag procedure
- d) Taxiing with minimum engines running
- e) Shutting down of engines immediately upon arrival at the ramp or apron

16.5.2.2 The airport operator shall require aircraft operators to implement the operational procedures to reduce aircraft emissions at the airport within 10 working days of the date of issuance of an approval by the BCAA.

16.6 Airport Operations:

16.6.1 General:

The airport operator shall undertake airport operations in compliance with the requirements of this Section and in compliance with the environmental requirements of relevant government authorities.

16.6.2 Quarantine Waste Management:

16.6.2.1 Within 2 years from the enactment of this Section, unless required earlier by local authorities, the airport operator shall ensure the availability of technology and trained expertise to treat quarantine waste and shall designate the technology for the treatment of quarantine waste and shall communicate the designation to aircraft operators and their agents together with the responsibilities of aircraft operators and their agents to treat quarantine waste.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

16.6.3 Non-Hazardous Solid Waste Management:

16.6.3.1 The airport operator and all parties operating at the airport:

- a) manage their non-hazardous solid waste in accordance with the requirements of the Waste prevention and Management Regulation 2012.
- b) Shall not dispose of solid waste except in containers that are designed for solid waste management and for which the airport operator, service provider or commercial entity, as appropriate, has made waste collection and disposal arrangements and which comply with international or national requirements which relate to recycling of non-hazardous solid waste.
- c) Shall not discard solid waste into a solid waste container that is too small for the waste or which is too full to properly accommodate the waste.
- d) Shall not place liquids in a container designed or intended for solid waste.

16.6.4 Hazardous Wastes:

The airport operator and all parties operating at the airport shall prepare a Management Plan that identifies actions to address hazardous waste at the airport.

16.6.5 Dangerous Goods:

The airport operator and all parties operating at the airport shall manage their Dangerous Goods in accordance with the requirements of Section 5 of BANRs.

16.6.6 Enforcement:


The BCAA may order the airport operator or the responsible party as appropriate for causing the spill to take additional actions to address spills or the clean up of spills. The additional actions required shall be at the expense of the party causing the spill.

16.6.7 Atmospheric Emissions:

The airport operator and all parties operating at the airport shall not discharge gases or vapours to the atmosphere except in accordance with the standards and provisions of the National Environment Protection Act 2007 or relevant laws as applicable.

16.6.8 Land Use within Airports:

Land use within the airport shall be managed by the Airport Operator.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

16.6.9 Land Use Planning Around Airports:

Where the airport operator owns, or is responsible for, land around the airport, the airport operator shall comply with approved land use plans.

In the case of any actual or suspected infringement, such infringement shall be reported by the relevant airport operator to the appropriate land authority and to BCAA.

16.7 Environmental Management System:

16.7.1 Certification of Airports:

16.7.1.1 The Environmental Management System shall address:

- a) The environmental compliance requirements of this Section by both the airport operator and by the services and commercial entities operating at the airport under agreement with the airport operator
- b) The assessment of violation penalties identified by this Section, and the invoicing, management of these penalties

16.7.2 Content of an Environmental Management System:

- a) The Environmental Management System to be included in the Airport Certification Manual shall describe to the satisfaction of the BCAA the following:
 - b) The Environmental Policy statement for the airport operator that provides the airports' commitment to environmental quality.
 - c) The Environmental Management Plan to be implemented by the airport operator, including:
 - i. The environmental priorities of the airport operator during the period during the certification period to ensure compliance with applicable environmental requirements
 - ii. How the priorities shall be achieved
 - iii. General timing of key actions to achieve the priorities
 - iv. The financial resources necessary to achieve the priorities and how they shall be raised
- d) The Environmental Monitoring and Enforcement Plan to be implemented by the airport operator, including:
 - i. Mechanisms for monitoring the proper environmental performance of all parties operating at the airport
 - ii. Mechanisms for enforcing the environmental management obligations of all parties operating at the airport

BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

- iii. Compliance of the airport operator and all parties operating at the airport with the environmental requirements set out in this Section as well as including non-compliance and corrective actions

16.7.3 Environmental Impact Assessment:

- 16.7.3.1 The airport operator shall notify BCAA of any construction or other development they propose to undertake and shall conduct an Environmental Impact Assessment, as necessary, in accordance with the regulations of the National Environment Protection Act or relevant authorities, as applicable.
- 16.7.3.2 The Environmental Impact Assessment shall be presented to the BCAA prior to submission to the National Environment Commission or relevant authorities, as applicable for comment.

16.7.4 Payment of Noise Reduction Plan and Emissions Penalties:

- 16.7.4.1 Airline companies and all parties operating at the airport or their agents shall make payments according to the terms of agreed arrangements in accordance with this section. The penalties prescribed in enforcement manual shall be applied and be payable under this section.
- 16.7.4.2 The airport operator shall collect and maintain all penalties received in accordance with this Section in a Revenue Account.
- 16.7.4.3 The airport operator shall invoice aircraft operators for Noise Reduction Plan Penalties and the aircraft operator shall pay the required penalties to the airport operator within 15 working days of the of the invoice date.

16.8 Enforcement by Airport Operators:

16.8.1 General:

All penalties relating to non-compliance with the provisions of this Section shall be invoiced by the airport operator to the aircraft operator or airport tenant, as applicable, within 5 working days of the occurrence of the infraction and shall be payable within 15 working days.

16.8.2 Noise:

- a. A Stage 2 aircraft that fails to adhere to an operational measure for noise reduction required by the airport operator shall be assessed a Noise Operational penalty as prescribed in the Enforcement Manual and Nation Environment Protection Act.



BHUTAN AIR NAVIGATION REGULATIONS

SECTION 16 - Environmental Protection

- b. Stage 2 aircraft may be subject to curfews and other noise limiting procedures in addition to any Noise Operational penalty and/or operational measure imposed
- c. An aircraft classified as a Stage 3 aircraft, or an aircraft that is certified to be less noisy than a Stage 3 aircraft under certification standards equivalent to those set out by the ICAO, that fails to adhere to an operational measure for noise reduction required by the airport operator, shall be assessed a Noise Operational penalty as prescribed in the Enforcement Manual.

16.8.3 Aircraft Engine Emissions:

An aircraft operator that fails to adhere to an operational measure for emissions reduction that is required by the airport operator shall be assessed an Emissions Reduction penalty.

Where an aircraft operator does not pay within 15 working days of the specified time an Emissions Reduction penalty, the airport operator shall immediately send the aircraft operator a warning letter stating that the unpaid penalty shall be charged an interest rate in accordance with applicable laws and shall be applicable after 10 working days of receipt of the warning letter.

16.8.4 Non-Payment of Penalties:

Suspend a license, certificate or permit it has issued to the entity that has not made payment, and/or Order the airport operator to prohibit access to the airport by personnel, or a subset of personnel, of the entity that has not made payment, and/or and prohibit the subject aircraft from flying.

BHUTAN AIR NAVIGATION REGULATIONS



SECTION 17 - Safety Management System

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 17 - Safety Management System

- 17.1 The Regulation for Safety Management System shall be in accordance with BCAR-19 (Safety Management System).

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BHUTAN AIR NAVIGATION REGULATIONS



SECTION 18 - AERONAUTICAL CHARTS

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 18 - Aeronautical Charts

18.1 Aeronautical Charts

The Regulations for Aeronautical Charts shall be in accordance with BCAR-4 (Aeronautical Charts).

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BHUTAN AIR NAVIGATION REGULATIONS



SECTION 19 - UNITS OF MEASUREMENT

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BHUTAN AIR NAVIGATION REGULATIONS

SECTION 19- Units of Measurement

19.1 Units of Measurement

The Regulations for Units of Measurement shall be in accordance with BCAR-5(Units of Measurement).