



CIVIL AVIATION SAFETY AUTHORITY OF PNG

PNG

Civil Aviation Rules

Part 175

Aeronautical Information Service Organizations - Certification

Effective 1 February 2018

DESCRIPTION

Part 175 prescribes –

- rules governing the certification and operation of organisations providing an aeronautical information service for Papua New Guinea on behalf of the Authority; and
- the requirements for the Papua New Guinea Aeronautical Information Publications, Aeronautical Information Circulars and NOTAM

BULLETIN

This Part first came into force on 1 January 2004 and now incorporates the following amendments:

Amendment	Effective Date
Amendment 1	1 May 2017
Amendment 2	1 February 2018

Summary of amendments

Amendment 2:
(Docket CAR17/173/04) **New paragraph 175.1 (3) is inserted to include the aeronautical chart requirement; New rule 175.2 is inserted for definition; Rule 175.3 is amended to correct the anomalies within the rule replacing Papua New Guinea with Port Moresby; Rule 175.5(1) is amended to reflect the amended Rule reference; Rule 175.51 is amended to improve structure and layout for consistency with other rule parts; Subpart B Rule references are renumbered in the Schedule of Rules and throughout for consistency from 175.55 to 175.73; Rule 175.54 is amended to read 175.55 and (d) is inserted to specify the requirements for aeronautical data security; Rule 175.63 is amended to reflect the correct Rule references; Rule 175.69 is amended to reflect consistency with Part 100; Rule 175.71 is amended to reflect consistency with Part 100; Rule 175.67(b)(3) & (4) is amended to correct the anomalies with the updated rule re-numbering; Rule 175.73(a) is amended to reflect the correct Rule references; Rule 175.73(a)(10)(iii) is inserted to correct previous oversight; Rule 175.103(b)(4) is amended to connect the charts requirements inserted in subpart G; New Subpart G created for the aeronautical charts.**

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Subpart A —General

175.1 Purpose

This Part prescribes—

- (1) rules governing the certification and operation of organisations providing an aeronautical information service for Papua New Guinea on behalf of the Authority; and
- (2) the requirements for the Papua New Guinea Aeronautical Information Publications, Aeronautical Information Circulars and NOTAM; and
- (3) the aeronautical charts requirements used for air navigation.

175.2 Definition

In this Part:

Aeronautical chart means a representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.

Application means manipulation and processing of data in support of user requirements (ISO 19104*).

Bare Earth means surface of the Earth including bodies of water and permanent ice and snow, and excluding vegetation and man-made objects.

Calendar means discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19108*).

Canopy means bare earth supplemented by vegetation height.

Contour line means a line on a map or chart connecting points of equal elevation.

Culture means all man-made features constructed on the surface of the Earth, such as cities, railways and canals.

Cyclic redundancy check (CRC) means a mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

Datum means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities (ISO 19104*).

Electronic aeronautical chart display means an electronic device by which flight crews are enabled to execute, in a convenient and timely manner, route planning, route monitoring and navigation by displaying required information.

Geodesic distance means the shortest distance between any two points on a mathematically defined ellipsoidal surface.

* *Note: ISO Standards.*

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

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

Note.— The geoid is irregular in shape because of local gravitational disturbances (wind tides, salinity, current, etc.) and the direction of gravity is perpendicular to the geoid at every point.

Geoid undulation means the distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.

Note.— In respect to the World Geodetic System — 1984 (WGS-84) defined ellipsoid, the difference between the WGS-84 ellipsoidal height and orthometric height represents WGS-84 geoid undulation.

Hypsometric tints means a succession of shades or colour gradations used to depict ranges of elevation.

Integrity classification (aeronautical data) means classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as:

- a) routine data: there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
- b) essential data: there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and
- c) critical data: there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.

Isogonal means a line on a map or chart on which all points have the same magnetic variation for a specified epoch.

Isogriv means a line on a map or chart which joins points of equal angular difference between the North of the navigation grid and Magnetic North.

Magnetic variation means the angular difference between True North and Magnetic North.

Note.— The value given indicates whether the angular difference is East or West of True North.

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

Meta data means data about data (ISO 19115*).

Note.— Data that describes and documents data.

Missed approach point (MAPt). That point in an instrument approach procedure at or before which the prescribed missed approach procedure must be initiated in order to ensure that the minimum obstacle clearance is not infringed.

Orthometric height means height of a point related to the geoid, generally presented as an MSL elevation.

Relief means the inequalities in elevation of the surface of the Earth represented on aeronautical charts by contours, hypsometric tints, shading or spot elevations.

Resolution means a number of units or digits to which a measured or calculated value is expressed and used.

175.3 Requirement for certificate

No person shall provide an aeronautical information service for the Port Moresby FIR except under the authority of, and in accordance with, the provisions of an aeronautical information service certificate issued under this Part.

175.5 Application for certificate

An applicant for the grant of an aeronautical information service certificate shall complete form CAA 175/01 and submit it to the Director with—

- (1) the exposition required by 175.73; and
- (2) a payment of the appropriate application fee prescribed by regulations made under the Act.

175.7 Issue of certificate

An applicant is entitled to an aeronautical information service certificate if the Director is satisfied that—

- (1) the applicant meets the requirements of Subpart B; and
- (2) the applicant, and the applicant's senior person or persons required by 175.51(a)(1) and are fit and proper persons; and
- (3) the granting of the certificate is not contrary to the interests of aviation safety.

175.9 Privileges of certificate

The aeronautical information service certificate specifies the aeronautical information services that the certificate holder is authorised to provide.

175.11 Duration of certificate

- (a) An aeronautical information service certificate remains in force until it expires or is suspended or revoked.
- (b) The holder of an aeronautical information service certificate that expires or is revoked shall forthwith surrender the certificate to the Director.
- (c) The holder of an aeronautical information service certificate that is suspended, shall forthwith produce the certificate to the Director for appropriate endorsement.

175.13 Renewal of certificated

The application shall be submitted to the Director before the application renewal date specified on the certificate or, if no such date is specified, not less than 30 days before the certificate expires.

Subpart B — Certification Requirements

175.51 Personnel requirements

- (a) An applicant for the grant of an aeronautical information service certificate shall employ, contractor otherwise engage—
- (1) a senior person identified as the Chief Executive who has the authority within the organisation to ensure that each aeronautical information service listed in the applicant's exposition—
 - (i) is provided in accordance with the requirements of this Part; and
 - (2) senior person(s) -ultimately be responsible to the Chief Executive who are responsible for ensuring that the organisation complies with the requirements of this Part; and
 - (3) sufficient personnel to collect, collate, check, coordinate, edit and publish aeronautical information for the aeronautical information services listed in the applicant's exposition; and
- (b) The applicant must –
- (1) establish a procedure to initially assess the competence of those personnel authorised by the applicant to check, edit, and publish aeronautical information for the aeronautical information services listed in their exposition; and
 - (2) establish a procedure to maintain the competence of those authorised personnel; and
 - (3) provide those authorised personnel with written evidence of the scope of their authorisation.

175.53 Facility requirements

An applicant for the grant of an aeronautical information service certificate shall establish offices and facilities that—

- (1) are appropriate for the aeronautical information services listed in their exposition; and
- (2) meet the applicable requirements of 175.103(b) and 175.105.

175.55 Security Programme

- (a) An applicant for the grant of an aeronautical information service certificate shall establish a security programme for the facilities listed in their exposition.
- (b) The security programme required by paragraph (a) shall specify the physical security requirements, practices and procedures that may be necessary-
- (1) to minimise the risk of destruction, damage, or interference, to the certificate holder's facilities if such an act to a facility is likely to endanger the safety of air navigation; and
 - (2) to prevent unauthorised access to a facility; and
 - (3) for personnel to follow in the event of a bomb threat or other threat of violence at a facility; and
 - (4) to monitor unattended facilities to detect unauthorised intrusion or interference at a facility.

- (5) to protect critical information and communications technology systems from interference that may jeopardise the safety of air navigation services.
- (c) The security programme required under paragraph (a) shall include procedures to notify, investigate and report security incidents to the Director in accordance with rule Part 12.
- (d) The applicant shall establish procedures to protect aeronautical data and data sets in accordance with data error detection, security and authentication techniques.

175.57 Scope of pre-flight information service

An applicant for the grant of an aeronautical information service certificate for a pre-flight information service shall, for the pre-flight services listed in their exposition, specify—

- (1) the geographic area; and
- (2) the aerodromes and the air routes originating from those aerodromes.

175.59 Documentation

- (a) An applicant for the grant of an aeronautical information service certificate shall—
- (1) document the format and standards for the aeronautical information published under the authority of their certificate; and
 - (2) ensure that the format and standard take into account the circumstances under which the information will be used; and
 - (3) hold copies of relevant reference material, standards, practices and procedures, and any other documentation that is necessary for the aeronautical information services listed in their exposition.
- (b) The applicant shall establish a procedure to control all the documentation required by paragraph (a), to ensure that—
- (1) the documentation is reviewed and authorised by appropriate personnel before issue; and
 - (2) current issues of relevant documentation are available to staff at all locations where they need access to such documentation for the aeronautical information services listed in their exposition; and
 - (3) all obsolete documentation is promptly removed from all points of issue or use; and
 - (4) changes to documentation are reviewed and approved by appropriate personnel; and
 - (5) the current version of each item of documentation can be identified to preclude the use of out-of-date editions.

175.61 Collection of information

- (a) An applicant for the grant of an aeronautical information service certificate shall establish procedures to collect and collate the information required for the aeronautical information services listed in their exposition.
- (b) The procedures shall ensure that—
- (1) applicable information is obtained from organisations that provide services in support

of the Papua New Guinea air navigation system; and

- (2) applicable information is obtained from the aeronautical information services of other States relevant to the requirements of international aircraft operators operating on international air routes originating from Papua New Guinea; and
- (3) arrangements for the timely provision of information are made with the information originators prescribed in paragraph (b)(1) and (2); and
- (4) information received from the information originators prescribed in paragraph (b)(1) is certified as accurate by a person identified by the originator to be responsible for the accuracy of that information.

(c) The procedures for the NOTAM service shall, in addition to paragraph (b), ensure that any originator's request for the issue of a NOTAM does not require the NOTAM to be effective for more than 3 months.

175.63 Publication of aeronautical information

(a) An applicant for the grant of an aeronautical information service certificate shall establish procedures for checking, coordinating, editing, publishing and disseminating aeronautical information for the services listed in applicant's exposition.

(b) The applicant must ensure that the procedures established under paragraph (a) provide for the following—

- (1) the information received under 175.596 1 to be rechecked against available information is verified as accurate before its publication; and
- (2) the information received under 175.596 1 to be edited, accurately published, and disseminated—
 - (i) in the format applicable to the operational significance of the information; and
 - (ii) where applicable, in accordance with Subparts D, E, or F; and
 - (iii) is in a format that takes account of the circumstances under which the information will be used; and
- (3) except for paragraph (b)(4), permanent publications and long-term temporary publications to be clearly identified as being published under the authority of the applicant's aeronautical information service certificate; and
- (4) if aeronautical information obtained from the aeronautical information services of other States under 175.61(b)(2) is disseminated, that information to be clearly identified as having the authority of the originating State; and
- (5) if information that has not been certified as required under 175.61(b)(4) is disseminated, that information must be clearly identified as being unverified; and
- (6) any permanent change to published information to be coordinated with other applicable information originators before the change is published; and

- (7) temporary information that is published without a defined expiry date to be reviewed at an appropriate time to ensure that the originator takes the required action to cancel or reissue the information; and
 - (8) the aeronautical information is published in the English language; and
 - (9) place names to be spelt according to local usage, transliterated when necessary into the Latin alphabet; and
 - (10) units of measurement are consistent with those prescribed in Part 1; and
 - (11) abbreviations, consistent with those prescribed in Part 1, to be used in the published aeronautical information when—
 - (i) their use is appropriate; and
 - (ii) their use facilitates the dissemination of the information; and
 - (12) any of the aeronautical information published to be promptly made available to the aeronautical information services of other States, upon request by those States; and
 - (13) the aeronautical information to be made available in a form that is suitable for the operational requirements of—
 - (i) flight operations personnel, including flight crew members and the services responsible for pre-flight briefing; and
 - (ii) the air traffic service units responsible for flight information services.
- (c) The applicant must ensure that the procedures for the PNGAIP service must, in addition to paragraph (b), require—
- (1) aeronautical charts, and operationally significant information published in AIP Amendments and AIP Supplements, are published in accordance with the AIRAC system; and
 - (2) the information published under the AIRAC system to be clearly identified with the acronym AIRAC; and
 - (3) the information published under the AIRAC system to be distributed so that recipients receive the information at least 28 days before its effective date; and
 - (4) the information published under the AIRAC system to not be changed for at least 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period; and
 - (5) if an AIP Supplement is published to replace a NOTAM, the supplement includes a reference to the serial number of the NOTAM; and
 - (6) in an AIP Amendment or AIP Supplement is published under the AIRAC system, a NOTAM to be originated giving a brief description of the operationally significant contents, the effective date and the reference number of each amendment or supplement. The NOTAM must—
 - (i) come into force on the same effective date as the amendment or supplement; and
 - (ii) remain in force for a period of 14 days; and
 - (7) if there is no applicable information to be published by the AIRAC date, a NIL

notification to be issued; and

- (8) a NOTAM to be originated if information to be published as an AIP Amendment or AIP Supplement takes effect prior to the effective date of the amendment or supplement.

175.65 Error correction in published information

(a) An applicant for the grant of an aeronautical information service certificate shall establish procedures to record, investigate, correct, and report any errors that are detected in the aeronautical information published under the authority of their certificate.

(b) The procedures shall ensure that—

- (1) the error is corrected by the most appropriate means relative to the operational significance of the error; and
- (2) the correction is clearly identified in the republished information; and
- (3) the source of the error is identified and, where possible, eliminated; and
- (4) the Director is notified of a promulgated information incident in accordance with Part 12.

175.67 Records

(a) An applicant for the grant of an aeronautical information service certificate shall establish procedures to identify, collect, index, store, maintain and dispose of the records that are necessary for the aeronautical information services listed in their exposition.

(b) The procedures shall ensure that—

- (1) there are records enabling all incoming and outgoing aeronautical information to be readily identified by serial number and date, and that supplementary information can be similarly verified and, where necessary, authenticated; and
- (2) there is a record of each person who is authorised by the applicant to check, edit, and publish aeronautical information; and
- (3) there is a record of each occurrence of error correction under the procedures required by 175.65; and
- (4) there is a record of each internal quality assurance review of the applicant's organisation carried out under the procedures required by 175.71; and
- (5) all records are legible and of a permanent nature; and
- (6) all records are retained for at least 5 years except NOTAM, AIP Supplements and Aeronautical Information Circulars, which need only be retained for 30 days after cancellation.

175.69 Safety Management System

An applicant for the grant of an aeronautical information service certificate shall establish, implement and maintain a safety management system which meets the requirements of Part 100.

175.71 Quality Management System

An applicant for the grant of an aeronautical information service certificate shall establish, implement and maintain a quality management system which meets the requirements of Part100.

175.73 Organisation exposition

(a) An applicant for the grant of an aeronautical information service certificate shall provide the Director with an exposition containing—

- (1) a statement signed by the Chief Executive on behalf of the applicant's organisation confirming that—
 - (i) the exposition and any included manuals define the organisation and demonstrate its means and methods for ensuring ongoing compliance with this Part; and
 - (ii) the exposition and any included manuals will be complied with at all times; and
- (2) the titles and names of the senior person or persons required by 175.51(a)(1) and (2);and
- (3) the duties and responsibilities of the senior persons specified in paragraph(a)(2) including matters for which they have responsibility to deal directly with the Director or the Authority on behalf of the organisation; and
- (4) an organisation chart showing lines of responsibility of the senior persons specified in paragraph (a)(2);and
- (5) a summary of the applicant's staffing structure for each aeronautical information service listed under paragraph 175.51(a)(2, 3);and
- (6) a list of the aeronautical information services to be covered by the certificate; and
- (7) for a pre-flight information service, details of the area, aerodromes and air routes required by 175.57;and
- (8) the location and address details of the applicable offices required by 175.103(b)(1)and 175.105(1);and
- (9) details of the applicant's format and standards required by 175.59(a)(1) for their published aeronautical information; and
- (10) details of the applicant's procedures required by—
 - (i) 175.51(4) regarding the competence of personnel; and
 - (ii) 175.55 regarding the applicant's security programme; and
 - (iii) 175.57 regarding the scope of pre-flight information service; and
 - (iv) 175.59(b) regarding the control of documentation; and
 - (v) 175.61(a) regarding the collection of information; and
 - (vi) 175.63(a) regarding the publication of aeronautical information; and
 - (vii) 175.65(a) regarding the correction of errors in published information; and

- (viii) 175.67(a) regarding the identification, collection, indexing, storage, maintenance, and disposal of records; and
 - (ix) 175.69 regarding safety management system; and
 - (x) 175.71 regarding quality management system; and
- (11) procedures to control, amend and distribute the exposition.
- (b) The applicant's exposition must be acceptable to the Director.

Subpart C — Operating Requirements

175.101 Continued compliance

The holder of an aeronautical information service certificate shall—

- (1) hold at least one complete and current copy of their exposition at each office listed in their exposition; and
- (2) comply with all procedures and standards detailed in their exposition; and
- (3) make each applicable part of their exposition available to personnel who require those parts to carry out their duties; and
- (4) continue to meet the standards and comply with the requirements of Subpart B prescribed for certification under this Part; and
- (5) notify the Director of any change of address for service, telephone number, or facsimile number required by form CAA 175/01 within 28 days of the change.

175.103 AIP service

(a) The holder of the aeronautical information service certificate for the AIP service shall publish—

- (1) the PNGAIP in accordance with Subpart D; and
- (2) AIP Amendments in accordance with 175.155; and
- (3) AIP Supplements in accordance with 175.157 for notification of—
 - (i) temporary changes that are effective for 3 months or longer; and
 - (ii) information of less than 3 months duration which contains extensive text or graphics; and
- (4) the Aeronautical Information Circular (AIC) in accordance with Subpart E.

(b) The certificate holder shall, in addition to paragraph(a)—

- (1) designate an office as Papua New Guinea's point of contact with the aeronautical information services of other States for the interchange of the Integrated Aeronautical Information Package, except NOTAM; and
- (2) make the PNGAIP, AIP Amendments, AIP Supplements and AIC available to any person upon payment of a charge that may apply to the supply of the publications; and
- (3) establish a system to disseminate the PNGAIP, AIP Amendments, AIP Supplements,

aeronautical charts, and AIC in accordance with 175.63(c)(3);and

- (4) ensure that all aeronautical charts published as part of the PNGAIP conform to the applicable standards in accordance with subpart G; and
- (5) coordinate the input of all aeronautical information from the originators prescribed in 175.61(b)(1),except—
 - (i) information which is of immediate operational significance necessitating the immediate issue of a NOTAM; and
 - (ii) temporary information of a duration of less than three months, that only requires the issue of a NOTAM.

175.105 NOTAM service

The holder of the aeronautical information service certificate for the NOTAM service shall—

- (1) designate a International NOTAM Office (NOF) for Papua New Guinea; and
- (2) operate the NOF on a 24-hour basis; and
- (3) establish agreements with other international NOTAM offices for the exchange of NOTAM; and
- (4) ensure that—
 - (i) the NOF is connected to the AFTN; and
 - (ii) the AFTN connection provides for printed communication; and
 - (iii) the NOF has appropriate facilities to issue and receive NOTAM distributed by means of telecommunication; and
- (5) promptly issue a NOTAM that is in accordance with Subpart F, whenever information received under 175.61 requires the issue of a NOTAM; and
- (6) at intervals of not more than one month, issue a checklist over the AFTN of the NOTAM that are currently in force.

175.107 Pre-flight information service

(a) The holder of an aeronautical information service certificate for a pre-flight information service shall make available to flight operations personnel and flight crewmembers, aeronautical information that—

- (1) is essential for the safety, regularity and efficiency of air navigation; and
- (2) relates to the geographic area, aerodromes and air routes listed in their exposition.

(b) The aeronautical information provided under paragraph (a) shall include, where applicable—

- (1) a summary of current NOTAM and other information of an urgent character, in a plain text Pre-flight Information Bulletin (PIB);and
- (2) relevant elements of the Integrated Aeronautical Information Package; and

- (3) relevant maps and charts; and
- (4) current information relating to the aerodrome of departure concerning any of the following:
 - (i) construction or maintenance work on or immediately next to the manoeuvring area:
 - (ii) rough portions of any part of the manoeuvring area, whether marked or not, including broken parts of the surface of runways and taxiways:
 - (iii) presence and depth of snow, ice, or water on runways and taxiways, including their effect on surface friction:
 - (iv) parked aircraft or other objects on or immediately next to taxiways:
 - (v) the presence of other temporary hazards including those created by birds:
 - (vi) failure or irregular operation of part or all of the aerodrome lighting system including approach, threshold, runway, taxiway, and obstruction lights, and manoeuvring area un-serviceability lights, and aerodrome power supply:
 - (vii) failure, irregular operation or changes in the operational status of air navigation facilities including ILS and markers, PSR, SSR, VOR, NDB, VHF aero-mobile channels, RVR observing system, and secondary power supply.
- (c) The certificate holder shall make provision for flight crew members to report any concern about the state and operation of air navigation facilities as post-flight information at those aerodromes listed in the holder's exposition.
- (d) The certificate holder shall forward any post-flight information reported by flight crew members under paragraph (c) concerning the state and operation of air navigation facilities, to the operator of the navigation facility.

175.109 Changes to certificate holder's organisation

- (a) The holder of an aeronautical information service certificate shall ensure that their exposition is amended so as to remain a current description of the holder's organisation and services.
- (b) The certificate holder shall ensure that any amendments made to the holder's exposition meet the applicable requirements of this Part and comply with the amendment procedures contained in the holder's exposition.
- (c) The certificate holder shall provide the Director with a copy of each amendment to the holder's exposition as soon as practicable after its incorporation into the exposition.
- (d) Where a certificate holder proposes to make a change to any of the following, prior notification to and acceptance by the Director is required:
 - (1) the Chief Executive:
 - (2) the listed senior persons:
 - (3) the aeronautical information services provided by the holder:
 - (4) the format and standards for the aeronautical information published under the authority of their certificate.

- (e) The Director may prescribe conditions under which a certificate holder may operate during or following any of the changes specified in paragraph (d).
- (f) The certificate holder shall comply with any conditions prescribed under paragraph (e).
- (g) Where any of the changes referred to in this rule requires an amendment to the certificate, the certificate holder shall forward the certificate to the Director as soon as practicable.
- (h) The certificate holder shall make such amendments to the holder's exposition as the Director may consider necessary in the interests of aviation safety.

Subpart D — Papua New Guinea Aeronautical Information Publications

175.151 Contents of PNGAIP

- (a) The PNGAIP shall contain current information, data and aeronautical charts relating to—
 - (1) the regulatory and airspace requirements for air navigation in the Port Moresby FIR in which Papua New Guinea is responsible for air traffic services; and
 - (2) the Papua New Guinea services and facilities that support international air navigation to and from Papua New Guinea; and
 - (3) the services and facilities that support air navigation within the Port Moresby flight information region; and
 - (4) aerodromes operating under an aerodrome operating certificate issued under Part 139.
- (b) The PNGAIP may contain current information, data, and aeronautical charts relating to aerodromes not operating under an aerodrome operating certificate, where—
 - (1) the aerodrome operator provides the holder of the aeronautical information service certificate for the AIP service with the required data and information relating to the aerodrome; and
 - (2) the aerodrome operator accepts responsibility for the accuracy and currency of that data and information.
- (c) The PNGAIP shall include at an appropriate location—
 - (1) a statement to advise which certificated organisations are responsible for the air navigation facilities, services and procedures covered by the PNGAIP; and
 - (2) the general conditions under which those services and facilities are available for use; and
 - (3) a list of the differences with the ICAO Standards, Recommended Practices and Procedures that the Director has filed under Article 38 of the Convention; and
 - (4) a summary of any significant standards, practices and procedures followed by Papua New Guinea, where the ICAO Standards, Recommended Practices and Procedures allow alternative courses of action.

175.153 Specifications for PNGAIP

- (a) Each publication that forms part of the PNGAIP shall—

- (1) specify the purpose of the publication, the geographic area covered and that the publication is part of the PNGAIP; and
 - (2) be self-contained, include a table of contents with page numbers, and be paginated clearly; and
 - (3) specify that it is published—
 - (i) by the holder of the aeronautical information service certificate for the AIP service; and
 - (ii) under the authority of their certificate issued by the Director; and
 - (4) not duplicate information unnecessarily and if duplication is necessary, there shall be no difference in the duplicated information in respect of the same facility, service or procedure; and
 - (5) be dated, or where the publication is in loose-leaf form, each page shall be dated. The date shall consist of the day, month by name, and the year when the aeronautical information becomes effective; and
 - (6) be kept up-to-date by means of AIP Amendments or by reissue at regular intervals; and
 - (7) show clearly the degree of reliability of any unverified information.
- (b) A publication published in loose-leaf form shall—
- (1) specify on each page, which publication the page belongs to and that the page is part of the PNGAIP; and
 - (2) contain a checklist that—
 - (i) gives the current date, and page number or chart title of each page or chart in the publication; and
 - (ii) is issued with each AIP Amendment; and
 - (iii) specifies which publication it belongs to; and
 - (iv) is printed with a page number and the date as prescribed in paragraph(a)(5).

175.155 Specifications for AIP amendments

Each AIP Amendment shall—

- (a) clearly identify, by a distinctive symbol or annotation, all changes to the published information, and all new information on a reprinted page; and
- (b) be allocated a serial number, which shall be consecutive and based on the calendar year.

175.157 Specifications for AIP supplements

- (a) Each AIP Supplement shall be allocated a serial number which shall be consecutive and based on the calendar year.
- (b) The AIP Supplement pages shall remain part of the AIP while any part of their contents remain valid.

- (c) A checklist of AIP Supplements currently in force shall be issued with each AIP Supplement or at intervals of not more than one month. The checklist shall be given the same distribution as the supplement.

Subpart E — Aeronautical Information Circulars

175.201 Specifications for an AIC

- (a) An AIC shall—
- (1) be issued in printed form; and
 - (2) be allocated a serial number which should be consecutive and based on the calendar year.
- (b) An AIC affecting international aircraft operators shall be given the same distribution as the AIP.
- (c) Where AIC are distributed in more than one series, each series shall be separately identified by a prefix letter.
- (d) A checklist of AIC currently in force shall be issued at least once a year and distributed as an AIC.

Subpart F —NOTAM

175.251 Specifications for NOTAM

- (a) A NOTAM must be allocated a serial number by the NOTAM Office in either an A series or a C series. The serial number within each series must be consecutive and based on the calendar year.
- (b) The C series of NOTAM must only contain aeronautical information that—
- (1) is operationally significant to operators operating within the Port Moresby FIR; and
 - (2) is not published in the A series of NOTAM.
- (c) The A series of NOTAM must contain aeronautical information that is operationally significant to international operators operating in the Port Moresby FIR; and
- (d) Each NOTAM must be brief, deal with only one subject, and be compiled so that its meaning is clear without reference to another document.
- (e) If a NOTAM contains information that requires an amendment to the AIP or an AIP Supplement, the NOTAM must contain across-reference to the affected AIP text or AIP Supplement.
- (f) If a NOTAM is issued which cancels or supersedes a previous NOTAM, the serial number of the previous NOTAM must be specified.
- (g) If an error is detected in a NOTAM, a replacement NOTAM which cancels the original must be issued.
- (h) Location indicators included in the text of a NOTAM must conform to those approved by ICAO
- (i) A curtailed form of location indicator must not be used.

- (j) If no location indicator is assigned to the location, the name of the place, spelt in accordance with 175.63(b)(9), must be entered in the text of the NOTAM.
- (k) The NOTAM checklist required under 175.105(6) must—
 - (1) refer to the latest AIP Amendments, AIP Supplements and the internationally distributed AIC; and
 - (2) have the same distribution as the actual NOTAM series to which they refer and must be clearly identified as a checklist.
- (l) A NOTAM in the A series must be prepared and composed in a manner suitable for international distribution.

175.253 Distribution of NOTAM

- (a) A NOTAM shall—
 - (1) where possible, be transmitted as a single telecommunication message; and
 - (2) be distributed to addressees to whom the information is of direct operational significance, and who would not otherwise have at least seven days prior notification.
- (b) The C series of NOTAM shall be distributed within Papua New Guinea.
- (c) The A series of NOTAM shall be distributed within Papua New Guinea and to those international NOTAM offices with whom agreements have been established under 175.105(3).
- (d) The AFTN shall be employed for NOTAM distribution, whenever practicable.
- (e) When a NOTAM exchanged under the agreement established under 75.105(3), is sent by means other than the AFTN, a six-digit date-time group indicating the date and time of filing the NOTAM and the identification of the originator shall precede the text of the NOTAM.
- (f) A predetermined distribution system for NOTAM transmitted on the AFTN shall be used, whenever possible, subject to the agreements established under 175.105(3) with other international NOTAM offices.

Subpart G — AERONAUTICAL CHARTS

175.301 Standards and Specifications of Charts

- (a) Each aeronautical chart that forms part of the PNGAIP shall—
 - (1) provide information relevant to the function of the chart and its design shall observe Human Factors principles which facilitate its optimum use;
 - (2) provide information appropriate to the phase of flight to ensure the safe and expeditious operation of the aircraft;
 - (3) be accurate, free from distortion and clutter, unambiguous, and be readable under all normal operating conditions;
 - (4) such that the colours or tints and type size used for the chart can be easily read and interpreted by the pilot in varying conditions of natural and artificial light;
 - (5) clearly indicate on the face of each chart the date of validity of the aeronautical information.

(b) The information contained in the aeronautical charts shall be in a form which enables the pilot to acquire it in a reasonable time consistent with workload and operating conditions.

175.303 Title and presentation of Charts

(a) The title of a chart or chart series prepared in accordance with the specifications contained in rule 175.301 and intended to satisfy the function of the chart shall be that of the relevant chapter heading as modified by application of any Standard contained therein, except that such title shall not include “ICAO” unless the chart conforms with all Standards specified in Annex 4 and any specified for the particular chart;

(b) The presentation of information provided on each type of chart shall permit smooth transition from chart to chart as appropriate to the phase of flight.

175.305 Miscellaneous Information

(a) The following information shall be shown on the face of each chart unless otherwise stated in the specification of the chart concerned:

- (1) designation or title of the chart series;
- (2) name and reference of the sheet;
- (3) on each margin an indication of the adjoining sheet (when applicable).

Note.— The title may be abbreviated.

(c) A legend to the symbols and abbreviations used shall be provided. The legend shall be on the face or reverse of each chart except that, where it is impracticable for reasons of space, a legend may be published separately.

(d) The name and adequate address of the producing agency shall be shown in the margin of the chart except that, where the chart is published as part of an aeronautical document, this information may be placed in the front of that document.

175.307 Chart Symbols

(a) Symbols used shall conform to those shown in Appendix 2 — Chart Symbols, except that where it is desired to show on an aeronautical chart special features or items of importance to civil aviation for which no ICAO symbol is at present provided, any appropriate symbol may be chosen for this purpose, provided that it does not cause confusion with any existing chart symbol or impair the legibility of the chart;

(b) To represent ground-based navigation aids, intersections and waypoints, the same basic symbol shall be used on all charts on which they appear, regardless of chart purpose;

(c) The symbol used for significant points shall be based on a hierarchy of symbols and selected in the following order: ground-based navigation aid, intersection, waypoint symbol. A waypoint symbol shall be used only when a particular significant point does not already exist as either a ground-based navigation aid or intersection;

(d) The symbols of the Roman alphabet shall be used for all writing.

175.309 Geographical names

(a) The names of places and of geographical features in countries which officially use varieties of the Roman alphabet shall be accepted in their official spelling, including the accents and diacritical marks used in the respective alphabets;

(b) Where a geographical term such as “cape”, “point”, “gulf”, “river” is abbreviated on any particular chart that word shall be spelt out in full in the language used by the publishing agency, in respect of the most important example of each type. Punctuation marks shall not be used in abbreviations within the body of a chart.

175.311 Air Traffic Services airspaces

When ATS airspace is shown on a chart, the class of airspace, the type, name or call sign, the vertical limits and the radio frequency(ies) to be used shall be indicated and the horizontal limits depicted in accordance with Appendix 2 — Chart Symbols.

175.313 Aeronautical Data

(a) An applicant for an aeronautical information service certificate shall take all necessary measures to introduce a properly organized quality system containing procedures, processes and resources necessary to implement quality management at each function stage;

(b) The execution of such quality management shall be made demonstrable for each function stage, when required. In addition, States shall ensure that established procedures exist in order that aeronautical data at any moment is traceable to its origin so to allow any data anomalies or errors, detected during the production/maintenance phases or in the operational use, to be corrected.

(c) The order of chart resolution of aeronautical data shall be that as specified for a particular chart and as presented in a tabular form in Appendix 2.

175.315 Aeronautical Data Integrity

(a) The integrity of aeronautical data must be maintained throughout the data process from survey/origin to the next intended user. Based on the applicable integrity classification, the validation and verification procedures shall:

- (1) for routine data: avoid corruption throughout the processing of the data;
- (2) for essential data: assure corruption does not occur at any stage of the entire process and may include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level; and
- (3) for critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified thorough analysis of the overall system architecture as potential data integrity risks.

(b) Aeronautical data quality requirements related to the integrity and data classification shall be as provided in Tables 1 to 6 in Appendix 2.

175.317 Scale and projection

For charts of large areas, the name and basic parameters and scale of the projection shall be

indicated. For charts of small areas, a linear scale only shall be indicated.

175.319 Date of validity

The date of validity of aeronautical information shall be clearly indicated on the face of each chart.

175.321 Magnetic variation

True North and magnetic variation shall be indicated. The order of resolution of magnetic variation shall be that as specified for a particular chart.

175.323 Common reference system

(a) World Geodetic System – 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system. Published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum;

(b) Geographical coordinates which have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the requirement of Annex 11, Chapter 2 and Annex 14, Volumes I and II, Chapter shall be identified by an asterisk;

(c) The order of chart resolution of geographical coordinates shall be that specified for a particular chart series and in accordance with Appendix 2, Table 1.

(d) Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as geoid, shall be used as the vertical reference system;

(e) In addition to the elevations referenced to MSL, for the specific surveyed ground position, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions shall also be published as specified for a particular chart;

(f) The order of chart resolution of elevation and geoid undulation shall be that specified for a particular chart series and in accordance with Appendix 2, Table 2.

175.325 Type of Aeronautical Chart – ICAO Type A (Operating Limitation)

The following type of aeronautical charts shall be published as in integral part of the PNG AIP-

- (1) Aerodrome Obstacle Chart - ICAO Type A (Operating Limitation)
- (2) Aerodrome Obstacle Chart – ICAO Type B
- (3) Enroute Chart – ICAO
- (4) Standard Departure Chart – Instrument (SID) – ICAO
- (5) Standard Arrival Chart – Instrument (STAR) – ICAO
- (6) Instrument Approach Chart – ICAO
- (7) Visual Approach Chart – ICAO
- (8) Aerodrome/Heliport Chart – ICAO
- (9) Aircraft Parking/Docking Chart – ICAO
- (10) ATC Surveillance Minimum Altitude Chart – ICAO

Appendix 1 Chart Symbols

TOPOGRAPHY

1	Contours		8	Gravel		12	Highest elevation on chart	Alternative	17456
2	Approximate contours		9	Levee or eskar	Alternative 	13	Spot elevation		.6997 .8975
3	Relief shown by hachures		10	Unusual land features appropriately labelled		14	Spot elevation (of doubtful accuracy)		.6370
4	Bluff, cliff or escarpment		11	Mountain pass		15	Coniferous trees		
5	Lava flow					16	Other trees		
6	Sand dunes					17	Palms		
7	Sand area								
18	Areas not surveyed for contour information or relief data incomplete								Caution

HYDROGRAPHY

19	Shore line (reliable)		30	Abandoned canal Note.— Dry canal having landmark value.		38	Reservoir		
20	Shore line (unreliable)		31	Lakes (perennial)		39	Dry lake bed	Alternative	
21	Tidal flats		32	Lakes (non-perennial)	Alternative 	40	Wash	Alternative	
22	Coral reefs and ledges		33	Salt lake		41	Shoals		
23	Large river (perennial)		34	Salt pans (evaporator)		42	Glaciers and ice caps		
24	Small river (perennial)		35	Swamp		43	Danger line (2 m or one fathom line)		
25	Rivers and streams (non-perennial)	Alternative 	36	Rice field	Alternative 	44	Charted isolated rock		+
26	Rivers and streams (unsurveyed)		37	Spring, well or water hole	perennial 	45	Rock awash		⊕
27	Rapids				intermittent 	46	Unusual water features appropriately labelled		
28	Falls								
29	Canal								

CULTURE

BUILT-UP AREAS

47	City or large town	
48	Town	
49	Village	
50	Buildings	

HIGHWAYS AND ROADS

57	Dual highway	
58	Primary road	
59	Secondary road	
60	Trail	
61	Road bridge	
62	Road tunnel	

MISCELLANEOUS (Cont.)

69	Pipeline	
70	Oil or gas field	
71	Tank farms	
72	Nuclear power station	
73	Coast guard station	
74	Lookout tower	
75	Mine	
76	Forest ranger station	
77	Race track or stadium	
78	Ruins	
79	Fort	
80	Church	
81	Mosque	
82	Pagoda	
83	Temple	

RAILROADS

51	Railroad (single track)	
52	Railroad (two or more tracks)	
53	Railroad (under construction)	
54	Railroad bridge	
55	Railroad tunnel	
56	Railroad station	

MISCELLANEOUS

63	Boundaries (international)	
64	Outer boundaries	
65	Fence	
66	Telegraph or telephone line (when a landmark)	
67	Dam	
68	Ferry	

AERODROMES

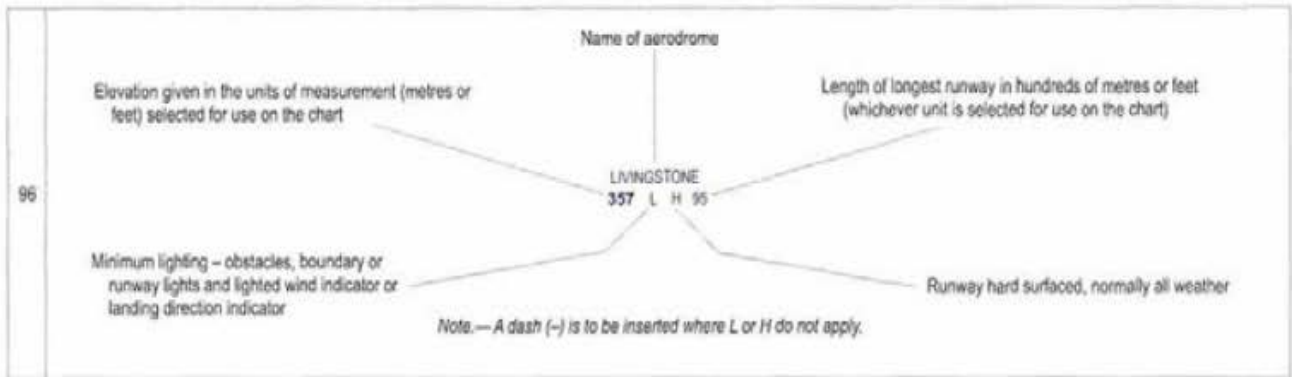
84	Civil	Land	
85	Civil	Water	
86	Military	Land	
87	Military	Water	

88	Joint civil and military	Land	
89	Joint civil and military	Water	
90	Emergency aerodrome or aerodrome with no facilities		
91	Abandoned or closed aerodrome		

92	Sheltered anchorage	
93	Aerodrome for use on charts on which aerodrome classification is not required e.g. Enroute Charts	
94	Heliport <i>Note.— Aerodrome for the exclusive use of helicopters</i>	

95 *Note.— Where required by the function of the chart, the runway pattern of the aerodrome may be shown in lieu of the aerodrome symbol, for example:*

AERODROMES (Cont.)
AERODROME DATA IN ABBREVIATED FORM WHICH MAY BE
IN ASSOCIATION WITH AERODROME SYMBOLS
 (Reference: 16.9.2.2 and 17.9.2.2)



AERODROME SYMBOLS FOR APPROACH CHARTS

97	Aerodromes affecting the traffic pattern on the aerodrome on which the procedure is based		98	The aerodrome on which the procedure is based	
----	---	--	----	---	--

RADIO NAVIGATION AIDS*

99	Basic radio navigation aid symbol <i>Note.— This symbol may be used with or without a box to enclose the data.</i>		107	Collocated VOR and TACAN radio navigation aids	VORTAC																																											
100	Non-directional radio beacon	NDB	<table border="1" style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;">108</td> <td style="width: 30%;">Instrument landing system</td> <td style="width: 20%; text-align: center;">ILS</td> <td style="width: 10%; text-align: center;">PLAN VIEW</td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%; text-align: center;">B Y</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">Electronic</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">FRONT COURSE</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">BACK COURSE</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">PROFILE</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">Electronic</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">GLIDE PATH</td> <td></td> <td></td> </tr> </table>				108	Instrument landing system	ILS	PLAN VIEW		B Y				Electronic						FRONT COURSE						BACK COURSE						PROFILE						Electronic						GLIDE PATH		
108	Instrument landing system	ILS					PLAN VIEW		B Y																																							
							Electronic																																									
							FRONT COURSE																																									
			BACK COURSE																																													
			PROFILE																																													
			Electronic																																													
			GLIDE PATH																																													
101	VHF omnidirectional radio range	VOR																																														
102	Distance measuring equipment	DME																																														
103	Collocated VOR and DME radio navigation aids	VOR/DME																																														
104	DME distance	Distance in kilometres (nautical miles) to DME → 15 km Identification of radio navigation aid → KAV																																														
105	VOR radial	Radial bearing from, and identification of, VOR	R 090 KAV																																													
106	UHF tactical air navigation aid	TACAN																																														
			109	Radio marker beacon	Elliptical Bone Shape 																																											

Note.— Marker beacon may be shown by outline, or stipple, or both.

110	Compass rose To be orientated on the chart in accordance with the alignment of the station (normally Magnetic North)			Compass rose to be used as appropriate in combination with the following symbols:									
		<i>Note.— Additional points of compass may be added as required.</i>			<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">VOR</td> <td style="width: 50%; text-align: center;"></td> </tr> <tr> <td>VOR/DME</td> <td style="text-align: center;"></td> </tr> <tr> <td>TACAN</td> <td style="text-align: center;"></td> </tr> <tr> <td>VORTAC</td> <td style="text-align: center;"></td> </tr> </table>	VOR		VOR/DME		TACAN		VORTAC	
VOR													
VOR/DME													
TACAN													
VORTAC													

*Note.— Guidance material on the presentation of radio navigation aid data is given in the Aeronautical Chart Manual (Doc 8697).

AIR TRAFFIC SERVICES

111	Flight information region	FIR		117	Air defence identification zone	ADIZ			
112	Aerodrome traffic zone	ATZ		118	Advisory route	ADR	Alternative 		
113	Control area Airway Controlled route	CTA AWY	Alternative 					Alternative 	Alternative
114	Uncontrolled route			119	Visual flight path	compulsory with radio communication requirement			
115	Advisory airspace	ADA				compulsory, without radio communication requirement			
116	Control zone	CTR				recommended			
				120	Scale-break (on ATS route)	Alternative 			

		On request fly-by	Compulsory fly-by	On request flyover	Compulsory flyover
121	Reporting and fly-by/flyover functionality				
	Intersection INT				
	VORTAC				
	TACAN				
	VOR				
	VORDME				
	NOB				
	Waypoint WPT				

Note.— See 2.4.4 and 2.4.5.

122	Change-over point To be superimposed on the appropriate route symbol at right angles to the route	COP		123	ATSMET reporting point	MRP	Compulsory		124	Final approach fix	FAF	
							On request					

AIR TRAFFIC SERVICES (cont.)

125	Altitudes/flight levels	Altitude/flight level "window"	<u>17 000</u> <u>10 000</u>	<u>FL 220</u> <u>10 000</u>
		"At or above" altitude/flight level	<u>7 000</u>	<u>FL 70</u>
		"At or below" altitude/flight level	<u>5 000</u>	<u>FL 50</u>
		"Mandatory" altitude/flight level	<u>3 000</u>	<u>FL 30</u>
		"Recommended" procedure altitude/flight level	5 000	FL 50
		"Expected" altitude	Expect 5 000	Expect FL 50
Note:— For use only on SID and STAR charts. Not intended for depiction of minimum obstacle clearance altitude.				

AIRSPACE CLASSIFICATIONS

126	Airspace classifications		
		<p>Aeronautical data in abbreviated form to be used in association with airspace classification symbols:</p>	
127	Abbreviation	<p>TMA DONLON 119.1 C 200m AGL - FL 245</p> <p>Type Name or call sign Radio frequency(ies) Airspace classification Vertical limits</p>	

AIRSPACE RESTRICTIONS

128	Restricted airspace (prohibited, restricted or danger area)		Common boundary of two areas	
	Note:— The angle and density of rulings may be varied according to scale and the size, shape and orientation of the area.			
129	International boundary closed to passage of aircraft except through air corridor			

OBSTACLES

130	Obstacle		134	Exceptionally high obstacle (optional symbol)	
131	Lighted obstacle		135	Exceptionally high obstacle — lighted (optional symbol)	
132	Group obstacles		Note:— For obstacles having a height of the order of 300 m (1 000 ft) above terrain.		
133	Lighted group obstacles		136		

MISCELLANEOUS

137	Prominent transmission line		140	Wind turbine -- unlighted and lighted	
138	Isogonic line or isogonal		141	Wind turbines -- minor group and group in major area, lighted	
139	Ocean station vessel (normal position)				

VISUAL AIDS

142	Marine light <i>Note 2. -- Characteristics are to be indicated as follows:</i>	Alt B F	Alternating Blue Fixed		<i>Note 1. -- Marine alternating lights are red and white unless otherwise indicated. Marine lights are white unless colours are stated.</i>	F1 G Gp	Flashing Green Group	Occ R SEC	Occulting Red Sector	sec (U) W	Second Unwatched White
143	Aeronautical ground light		Electronic 		144	Lightship					

SYMBOLS FOR AERODROME/HELIPORT CHARTS

145	Hard surface runway		154	Point light	
146	Pierced steel plank or steel mesh runway				
147	Unpaved runway		155	Obstacle light	
148	Stopway SWY		156	Landing direction indicator (lighted)	
149	Taxiways and parking areas		157	Landing direction indicator (unlighted)	
150	Helicopter alighting area on an aerodrome		158	Stop bar	
151	Aerodrome reference point ARP		159	Runway-holding position <i>Pattern A</i> <i>Pattern B</i>	
152	VOR check-point		160	Intermediate holding position <i>Note -- For application, see Annex 14, Volume I, 5.2.11.</i>	
153	Runway visual range (RVR) observation site		161	Hot spot <i>Note -- Hot spot location to be circled.</i>	

SYMBOLS FOR AERODROME OBSTACLE CHARTS - TYPE A, B AND C

	Plan	Profile		Plan	Profile	
162	Tree or shrub		Identification number 	167	Terrain penetrating obstacle plane	
163	Pole, tower, spire, antenna, etc.			168	Escarpment	
164	Building or large structure			169	Stopway SWY	
165	Railroad			170	Clearway CWY	
166	Transmission line or overhead cable					

ADDITIONAL SYMBOLS FOR USE ON PAPER AND ELECTRONIC CHARTS

PLAN VIEW		Electronic
171	<p>Minimum sector altitude</p> <p><i>Note.— This symbol may be modified to reflect particular sector shapes.</i></p>	MSA
172	<p>Terminal arrival altitude</p> <p><i>Note.— This symbol may be modified to reflect particular TAA shapes.</i></p>	TAA
173	Holding pattern	
174	Missed approach track	
PROFILE		
175	Runway	
176	Radio navigation aid (type of aid and its use in the procedure to be annotated on top of the symbol)	
177	Radio marker beacon (type of beacon to be annotated on top of the symbol)	
178	Collocated radio navigation aid and marker beacon (type of aid to be annotated on top of the symbol)	
179	DME fix (distance from DME and the fix use in the procedure to be annotated on top of the symbol)	
180	Collocated DME fix and marker beacon (distance from DME and the type of beacon to be annotated on top of the symbol)	

Appendix 2 - Aeronautical Data Quality Requirements.

Table 1: Latitude and longitude

Latitude and longitude	Chart resolution	Integrity Classification
Flight information region boundary points	as plotted	routine
P, R, D area boundary points (outside CTA/CTR boundaries)	as plotted	routine
P, R, D area boundary points (inside CTA/CTR boundaries)	as plotted	essential
CTA/CTR boundaries points	as plotted	essential
En-route nav aids, intersections and waypoints, and holding, and STAR/SID points	1 sec	essential
Obstacles in Area 1 (the entire State territory)	as plotted	routine
Aerodrome/heliport reference point	1 sec	routine
Nav aids located at the aerodrome/heliport	as plotted	essential
Obstacles in Area 3	1/10 sec	essential
Obstacles in Area 2	1/10 sec	essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure	1 sec	essential
Runway thresholds	1 sec	critical
Taxiway centre line/parking guidance line points	1/100 sec	essential
Runway end	1 sec	critical
Runway holding position	1 sec	critical
Taxiway intersection marking line	1 sec	essential
Exit guidance line	1 sec	essential
Apron boundaries (polygon)	1 sec	routine
De-/anti-icing facility (polygon)	1 sec	routine
Aircraft standpoint/INS checkpoints	1 /100sec	routine
Geometric centre of TLOF or FATO thresholds, heliports	1 sec	critical

Table 2: Elevation/altitude/height

Elevation/altitude/height	Chart resolution	Integrity Classification
Aerodrome/heliport elevation	1 m or 1 ft	essential
WGS-84 geoid undulation at aerodrome/heliport elevation position	1 m or 1 ft	essential
Runway or FATO threshold, non-precision approaches	1 m or 1 ft	essential
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, non-precision approaches	1 m or 1 ft	essential
Runway or FATO threshold, precision approaches	0.5 m or 1 ft	critical
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, precision approaches	0.5 m or 1 ft	critical
Threshold crossing height (Reference datum height) precision approaches	0.5 m or 1 ft	critical
Obstacle clearance altitude/height (OCA/H)	as specified in PANS-OPS (Doc 8368)	essential
Obstacles in Area 1 (the entire territory)	3 m (10 ft)	routine
Obstacle in Area 2	1 m or 1 ft	essential
Obstacle in Area 3	1 m or 1 ft	essential
Distance measuring equipment (DME)	30 m (100ft)	essential
Instrument approach procedures altitude	as specified in PANS-OPS (Doc 8368)	essential
Minimum altitudes	50 m or 100 ft	routine
Heliport crossing height, PinS approaches	1 m or 1 ft	essential

Table 3: Gradients and angles

Gradients and angles	Chart resolution	Integrity Classification
Non-precision final approach descent gradient	0.1 per cent	critical
Final approach descent angle (Non-precision approach or approach with vertical guidance)	0.1 degree	critical
Precision approach glide path/elevation angle	0.1 degree	critical

Table 4: Magnetic variation

Magnetic variation	Chart resolution	Integrity Classification
Aerodrome/heliport magnetic variation	1 degree	essential

Table 5: Bearing

Bearing	Chart resolution	Integrity Classification
Airway segment	1 degree	routine
Bearing used for the formation of an en-route and of a terminal fix	1/10 degree	routine
Terminal arrival/departure route segment	1 degree	routine
Bearing used for the formation of an instrument approach procedure fix	1/10 degree	essential
ILS localizer alignment	1 degree	essential
MLS zero azimuth alignment	1 degree	essential
Runway and FATO bearing	1 degree	routine

Table 6: Length/distance/dimension

Length/distance/dimension	Chart resolution	Integrity Classification
Airway segment length	1 km or 1 NM	routine
Distance used for the formation of an en-route fix	2/10 km (1/10 NM)	routine
Terminal arrival/departure route segment length	1 km or 1 NM	essential
Distance used for the formation of a terminal and instrument approach procedure fix	2/10 km (1/10 NM)	essential
Runway and FATO length, TLOF dimensions	1 m	critical
Runway width	1 m	essential
Stopway length and width	1 m	critical
Landing distance available	1 m	critical
Take-off run available	1 m	critical
Take-off distance available	1 m	critical
Accelerate-stop distance available	1 m	critical
ILS localizer antenna-runway end, distance	as plotted	routine
ILS glide slope antenna-threshold, distance along centre line	as plotted	routine
ILS marker-threshold distance	2/10 km (1/10 NM)	essential
ILS DME antenna-threshold, distance along centre line	as plotted	essential
MLS azimuth antenna-runway end, distance	as plotted	routine
MLS elevation antenna-threshold, distance along centre line	as plotted	routine
MLS DME/P antenna-threshold, distance along centre line	as plotted	essential