



Part 311

Aeronautical charts

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Subpart A General

311.1 Applicability

- (a) This part prescribes rules governing:
 - (1) The certification and operation of organizations providing an aeronautical charts design and production in Egypt; and
 - (2) The operating and technical standards for the provision of aeronautical charts design and production.
- (b) These Rules were developed using:
 - (1) ANNEX 4 (Aeronautical charts) and ICAO DOC 8697 (Aeronautical Charts Manual)
 - (2) ANNEX 14 (Aerodromes) and ICAO .
 - (3) ICAO Document 10066 (Aeronautical Information Management)
- (c) All charts coming within the scope of this Part and bearing the aeronautical information date of 1 November 2001 or later shall conform to the Standards relevant to the particular chart.
- (d) All charts produced under the standard of this Part shall be sent to ECAR Part 173 certificate holder after ECAA approval to be published in the AIP.

311.3 Definitions

When the following terms are used in the Standards and Recommended Practices for aeronautical charts, they have the following meanings:

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

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

Area minimum altitude (AMA). The lowest altitude to be used under instrument meteorological conditions (IMC) that will provide a minimum vertical clearance of 300 m (1 000 ft) or in designated mountainous terrain 600 m (2 000 ft) above all obstacles located in the area specified, rounded up to the nearest (next higher) 30 m (100 ft).

Arrival routes. Routes identified in an instrument approach procedure by which aircraft may proceed from the en-route phase of flight to an initial approach fix.

Change-over 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.

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

Electronic aeronautical chart display. 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.

Final approach fix or point. That fix or point of an instrument approach procedure where the final approach segment commences.

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

Glide path. A descent profile determined for vertical guidance during a final approach.

Holding procedure. A predetermined maneuver which keeps an aircraft within a specified airspace while awaiting further clearance.

Hypsometric tints. A succession of shades or color gradations used to depict ranges of elevation.

Initial approach segment. That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point, between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, racetrack or dead reckoning track procedure and the final approach fix or point, as appropriate.

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

Isogriv. 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. The angular difference between True North and Magnetic North.

Metadata. Data about data (ISO 19115*).

Point light. A luminous signal appearing without perceptible length.

Position. refers to rating degrees.

Precision approach procedure. An instrument approach procedure utilizing azimuth and glide path information provided by ILS or PAR.

Procedure altitude/height. A specified altitude/height flown operationally at or above the minimum altitude/height and established to accommodate a stabilized descent at a prescribed descent gradient/angle in the intermediate/final approach segment.

Procedure turn. A manoeuvre in which a turn is made away from a designated track followed by a turn in the opposite direction to permit the aircraft to intercept and proceed along the reciprocal of the designated track.

Radar vectoring. Provision of navigational guidance to aircraft in the form of specific headings, based on the use of radar.

Reversal procedure. A procedure designed to enable aircraft to reverse direction during the initial approach segment of an instrument approach procedure. The sequence may include procedure turns or base turns.

Terminal arrival altitude (TAA). The lowest altitude that will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an arc of a circle defined by a 46-km (25 NM) radius centered on the initial approach fix (IAF), or where there is no IAF on the intermediate approach fix (IF), delimited by straight lines joining the extremity of the arc to the IF. The combined TAAs associated with an approach procedure shall account for an area of 360 degrees around the IF.

Visual approach procedure. A series of predetermined maneuvers by visual reference, 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, a go-around procedure can be carried-out.

311.5 Application for certification

- (a) Each applicant for the grant of aeronautical charts design and production service certificate shall:
 - (1) Complete the ECAA aeronautical charts design and production service certification form which requires the following information:
 - (i) The applicant's name and address for service in Egypt;
 - (ii) The specific aeronautical charts design and production or services to be provided and
 - (iii) Such other particulars relating to the applicant and the intended service as may be required by the ECAA as indicated on the form.
 - (2) Submit the completed form to the ECAA with payment of the appropriate application fee prescribed by ECAA
- (b) Each applicant shall include with the application all the documents listed in the application form.

311.7 Issuance of certificate

An applicant is entitled to aeronautical charts design and production service certificate if the ECAA is satisfied that:

- (a) The applicant meets the requirements of this Part .
- (b) The applicant, and the applicant's senior person or persons required by 311.51(a)(1) and (2) are fit and properly qualified persons; and
- (c) The granting of the certificate is not contrary to the interests of aviation safety.

311.9 Privileges of certificate

- (a) An aeronautical charts design and production service certificate:
 - (1) Shall specify the aeronautical charts that the certificate holder is authorized to provide; and
 - (2) Shall not provide an aeronautical charts that is not specified on the certificate.

311.11 Duration of certificate

- (a) An aeronautical charts design and production service certificate may be issued or renewed for a maximum period up to 2-years;
- (a) An aeronautical charts design and production service certificate remains in force until it expires or withdrawn or suspended or revoked;
- (b) The holder of an aeronautical charts design and production service certificate that expires or is revoked shall forthwith surrender the certificate to the ECAA; and
- (c) The holder of an aeronautical charts design and production service certificate that is suspended shall forthwith produce the certificate to the ECAA for appropriate endorsement.

311.13 Renewal of certificate

- (a) The renewal application shall be submitted to the ECAA not less than 30 days before the certificate expires.
- (b) Where the certificate has been in force for the full 2-years period, the applicant will be subjected to a full entry-level assessment by the ECAA.

311.15 Inspection by ECAA

- (a) Each person holds a certificate under this part (or applied for such certificate) shall grant unrestricted and unlimited access for ECAA inspectors to inspect his personnel, facilities, equipment, documents and records to determine:
 - (1) Eligibility to continue to hold his certificate.
 - (2) Compliance with this ECAR part
- (b) ECAA shall conduct an initial certification audit and thereafter audits at intervals not exceeding 2 years (24 months) to verify and ensure compliance of the aeronautical charts design and production service certificate holder.
- (c) Failure to comply with paragraph 312.14 (a) above shall be a basis to suspend, withdraw or revoke any certificate issued under this part.
- (d) When objective evidence is found showing non-compliance of the aeronautical charts design and production service certificate holder with the requirements, the finding shall be set out as follows:
 - (1) Category 3 (Critical): A Safety Oversight Inspection finding that identify area(s) where there is direct impact on safety.
 - (2) Category 2 (major): A Safety Oversight Inspection finding that identifies areas where law, ECARs, ICAO Standards, Recommended Practices, and provisions in related manuals are not implemented
 - (3) Category 1 (Minor): A Safety Oversight Inspection finding that identifies areas where standards and procedures specified in the Service provider manuals and related documents are not applied or not applied correctly.
 - (4) Observations: An area, which, in the view of the Safety Oversight Inspection team, could improve efficiency and/or generate improved safety outcome, and which the Safety Oversight Inspector should note and address.
- (e) After a receipt of notification of findings:
 - (1) Category 3 (Critical) Finding shall be rectified immediately;
 - (2) Category 2 (major) Findings shall be rectified within 15 to 90 days depending on the nature and circumstance of the non-compliance.
 - (3) Category 1 (Minor) Findings shall be rectified within 40 to 90 days depending on the nature and circumstance of the non-compliance.
 - (4) Observations should be rectified within 60 to 90 days depending on the nature and circumstance of the non-compliance..
 - (5) The certificate holders shall:
 - i. Conduct a Root Cause Analysis to identify the root cause of the non-compliance(s);
 - ii. Define a Corrective Action Plan (CAP), including Estimate Completion Dates (ECD), acceptable to the Authority; and
 - iii. Demonstrate corrective action implementation to the satisfaction of the Authority within the period agreed with the Authority.
- (f) In the case of Category 3 or Category 2 findings, the aeronautical charts design and production service certificate may be subject to restriction, a partial or full suspension or revocation. The aeronautical charts design and production service certificate holder shall provide confirmation of receipt of the notice of suspension or revocation of the certificate upon receipt of the inspection report.
- (g) Non-compliance with this Regulation or instructions issued by the Authority may require the Authority to restrict, suspend or revoke the aeronautical charts design and production service certificate.
- (h) If deemed necessary, the Authority may take additional enforcement action in terms of paragraph 312.15 of this part.

311.17 Enforcement issues

- (a) Penalties:
 - (1) ECAA may impose a penalty (according to the Civil aviation Law NO 28), or reduce some privileges to the certificate holder if:

- (i) It finds that the certificate holder does not comply with the requirements of this Part and such holder failed to remedy such non-compliance within 60-days after receiving notice in writing from ECAA to do so;
 - (ii) Such action is necessary in the interest of safety;
 - (iii) Its inspector is prevented by the service provider from carrying out a safety inspection when his report recommends such action;
 - (iv) The certificate holder failed to provide the service in the required standard level, which is confirmed to ECAA by receiving reports from the users of the service and proved by a legal investigation; and
- (2) When proposing a penalty, ECAA will state the reasons for such action and will furnish them to the certificate holder.
- (b) Suspension of certificate this is a subsequent procedure to impose a penalty:
- (1) ECAA may suspend for a defined period, an aeronautical charts design and production service certificate issued under this part if:
 - (i) the certificate holder still unable to remedy any of these non-compliant areas with the specified time frame of 60 days;
 - (ii) The investigation, in case of an accident, proves that it was caused due to the faulty procedures and/or the malfunction or failure of aeronautical charts design and production equipment or system;
 - (iii) The certificate holder failed to perform the action plan stated in the certificate in the exact period of time if so stated; and
 - (iv) Such actions still necessary in the interest of aviation safety.
 - (2) When proposing a suspension, the ECAA will state the reasons for such action and furnish them to the certificate holder;
 - (3) The certificate holder may appeal against such notice within 30-days of receipt;
 - (4) The applicant shall furnish to ECAA any documents, records, or other pertinent information supporting the appeal; and
 - (5) ECAA may confirm, modify, or set aside the proposed suspension based on the appeal.
- (c) Revocation of certificate this is a subsequent procedure to suspension:
- (1) ECAA may permanently revoke an aeronautical charts design and production service certificates issue under this part if:
 - (i) It is verified that the certificate holder will not be able to overcome non-compliant areas; and
 - (ii) The certificate holder stops providing the service concerned without a convincing argument.
 - (2) ECAA has decided for the interest of safety to terminate the services.
 - (3) The Ministerial Order issued for the certificate holder is revoked.
 - (4) The revoked certificate cannot be renewed, it has to be reissued not less than one year after the revocation date.

311.19 Withdrawal or change in level of service

- (a) Each holder of the aeronautical charts design and production service certificate who wishes to permanently withdraw the aeronautical charts design and production service shall give the ECAA at least 90 days notice of the proposal and include in that notice a summary of factors considered in arriving at the decision to withdraw the service.
- (b) Each holder of the aeronautical charts design and production service certificate that intends to permanently reduce the hours of operation of aeronautical charts design and production service shall provide to the ECAA an advance notice of, and the reasons for, the proposed reduction.
- (c) Each holder of the aeronautical charts design and production service certificate that is the outgoing provider of aeronautical charts design and production service shall not hinder the preparation and execution of transitional arrangements.

311.21 Provisional approval

The ECAA may, if it is considered in the interest of safety, grant an existing certificate holder a provisional approval to act as a substitute aeronautical charts design and production service in respect to certificate that has been withdrawn, suspended or revoked.

311.23 Transfer of service

An aeronautical charts design and production service certificate granted under this part is not transferable.

311.25 Display of certificate

Each IFPDS certificate holder shall display the certificate in a prominent place, generally accessible to the public at the holders principal place of business and, if a copy of the approval is displayed, shall produce the original approval to an ECAA inspector if so requested by such inspector.

311.27 Register of certificates

- (a) The ECAA will maintain a register of all aeronautical charts design and production service certificate issued under this Part.
- (b) The register contains:
 - (1) The full name of the certificate holder;
 - (2) The business address of the certificate holder;
 - (3) The date on which the certificate was approved;
 - (4) The type of aeronautical charts design and production for which the certificate was issued;
 - (5) The date on which the certificate is revoke or suspend, if applicable; and
 - (6) The date on which the certificate expires.

311.29 Availability

- (a) Information. A certificate holder shall on request by ECAA provide all information relating to the Egyptian territory that is necessary to enable the Standards of this Part to be met.
- (b) Charts. A certificate holder shall, when so specified, ensure the availability of charts in whichever of the appropriate ways prescribed in this Part for a particular chart or single sheet of a chart series.

311.31 - 311.49 [Reserved]

Subpart B **Certification Requirements**

311.51 Personnel requirements

Each applicant for the grant of aeronautical charts design and production service certificate shall employ or contract:

- (a) A senior person acceptable to the ECAA, who has the authority within the applicant's organization to ensure that each activity listed in their exposition:
 - (1) Can be financed and is provided to meet operational requirements; and
 - (2) Is provided in accordance with the requirements prescribed by this Part.
- (b) A senior person or group of senior persons who are responsible for assuring that the applicant's organization complies with the requirements of this Part. Such nominated person or persons shall be ultimately responsible to the ECAA;
- (c) Sufficient number of suitably qualified personnel to collect, check, coordinate, design, edit, and amend aeronautical charts design.
- (d) Sufficient number of suitably qualified personnel to ensure compliance with minimum qualifications and experience in and not limited to (navigation systems, aircraft operations, aircraft performance, aeronautical information services, geography, and geodesy).
- (e) Establish a procedure to initially assess the competence of those personnel authorized by the applicant to do what is mentioned in Item (c).
- (f) Establish a procedure to maintain the competence of those authorized personnel.
- (g) Provide those authorized personnel with written evidence of the scope of their authorization.
- (h) An applicant for an aeronautical charts design and production service certificate shall develop Job descriptions for its aeronautical charts design personnel.
- (i) Qualifications and experience details for the qualified personnel nominated by the applicant for the positions above shall be forwarded to the ECAA for acceptance and approval. ECAA retains the right to reject any person appointed and who has been found unsuitable for the position.

311.53 Facility and equipments

Each applicant for an aeronautical charts design and production service certificate shall establish offices equipped with appropriate hardware and other facilities; including access to up-to-date reference documents, manuals, data and aeronautical charts design Software; that are appropriate for the aeronautical charts design and production service listed in its Operations Manual.

311.55 Collection of information

- (a) Each applicant for the grant of an aeronautical charts design and production service certificate shall establish procedures to collect and collate the information required for the activities listed in their exposition.
- (b) The procedures shall ensure that:
 - (1) Applicable information is obtained from organizations that provide services in support of the Egyptian air navigation system;
 - (2) Applicable information is obtained from the other States relevant to the requirements of international aircraft operators operating on international air routes originating from Egypt;
 - (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.

311.57 Documentation

- (a) Each applicant for the grant of an Aeronautical charts design and production service certificate shall:

- (1) document the format and standards for the aeronautical charts produced and revised under the authority of their certificate; and
- (2) ensure that the format and standards 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 charts design listed in their exposition. an Aeronautical Charts design provider shall, at all times, maintain the following reference materials:
 - (i) ICAO Annex 15 "Aeronautical Information Services" to the Chicago Convention.
 - (ii) ICAO Annex 4 to the Chicago Convention "Aeronautical Charts";
 - (iii) CAO Aeronautical Chart Manual (Doc 8697).
 - (iv) ICAO Doc. 8126 (Aeronautical Information Services Manual);
 - (V) Arab Republic of Egypt AIP; and
 - (vi) ECAR-173 "Aeronautical Information Services".
- (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 authorized 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 charts 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.

311.59 Maintenance of Aeronautical Charts

- (a) An applicant for the grant of an Aeronautical Charts design certificate shall establish procedure to ensure that the information on aeronautical charts produced under the authority of their certificate are comprehensive and accurate, and in compliance with this ECAR.
- (b) The procedure shall ensure that the charts are reviewed regularly and maintained up to date by a defined revision/amendment service for the AIP/aeronautical charts in accordance with ICAO Aeronautical Chart Manual (Doc-8697) Chapter 3, Maintenance of Charts.

311.61 Error Correction in Published Information

- (a) An applicant for the grant of an Aeronautical Charts services certificate shall establish procedures to record, investigate, correct, and report any errors that are detected in the aeronautical charts listed in their exposition.
- (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 Authority is notified of a promulgated information incident.

311.63 Preparation of aeronautical chart

- (a) Each applicant for the grant of an aeronautical charts design and production service certificate shall establish procedures to check, co-ordinate, edit, publish and disseminate aeronautical information for the services listed in their exposition.
- (b) The procedures shall ensure that:

- (1) The information received under 311.29 is checked against available information to verify its accuracy prior to publication; and
 - (2) The information received under 311.29 is edited, accurately.
 - (i) In the format applicable to the operational significance of the information; and
 - (ii) In a format that takes account of the circumstances under which the information will be used; and
 - (3) Permanent publications and long-term temporary publications that related to an Aeronautical charts design and production are clearly identified as being published under the authority of the ECAA;
 - (4) Any permanent change to published information is coordinated with other applicable information originators before the change is published;
 - (5) Temporary information that is published with - an estimated period is reviewed at an appropriate time to ensure that the originator takes the required action to cancel or reissue the information;
 - (6) The Aeronautical chart, airways, instrument procedures, control zone, and control area are published in the English and Arabic language;
 - (7) Units of measurement are consistent with those prescribed in Part 305;
 - (8) Abbreviations, consistent with those prescribed in Part 1, and are used in the published an aeronautical charts when:
 - (i) Their use is appropriate; and
 - (ii) Their use will facilitate the dissemination of the information; and
 - (9) Any of the aeronautical information related to an aeronautical charts is promptly made available to the other States, upon request by those States;
 - (10) The aeronautical information related to an aeronautical charts and instrument procedures is made available in a form under DOC 8697 and that is suitable for the operational requirements of flight operations personnel, including flight crew members.
- (c) The procedures for aeronautical charts instrument procedures shall, in addition to Paragraph (b), ensure that:
- (1) Aeronautical chart format is carried out in accordance with this Part;
 - (2) Airways format is carried out in accordance with this Part;
 - (3) Control zone and control area format is carried out in accordance with this Part; and
 - (4) Obstacle evaluation format is carried out in accordance with this Part.

311.65 Correction in published information

- (a) Each applicant for the grant of an aeronautical charts design and production service certificate shall establish procedures to record, investigate, correct, and report any errors that are detected in the aeronautical chart 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;
 - (2) The correction is clearly identified in the republished information; and
 - (3) The source of the error is identified and, where possible, eliminated.

311.67 Files

- (a) The applicant for the grant of an aeronautical charts design and production service certificate shall establish procedures to identify, collect, index, store, maintain and dispose of the files that are necessary and listed in their exposition.
- (b) The procedures shall ensure that:
 - (1) There are files enabling all incoming and outgoing aeronautical data to be readily identified by serial number and date, and that supplementary data can be similarly verified and, where necessary, authenticated;
 - (2) There is a file of each person who is authorized by the applicant to check and edit aeronautical data;

- (3) There is a file of each error correction;
- (4) There is a file of each SQAMS review of the applicant's organization carried out under the procedures required by 311.61;
- (5) All files are legible and of a permanent nature; and
- (6) All electronic files are retained for at least 5-years after which complete update of the contents of those files is required.

311.69 Safety and quality management system

- (a) Each applicant for an aeronautical charts design and production service certificate shall establish and implement an acceptable Quality Management System (QMS) for aeronautical charts design in accordance with ICAO DOC 8697 and annex 4;
- (b) Each applicant for an aeronautical charts design and production service certificate shall establish and implement an acceptable Safety Management System; and
- (c) The results of these systems and related audits and corrective actions shall be made available to the ECAA upon request.

311.71 Security

- (a) Each applicant for the grant of an aeronautical charts design and production service certificate shall prepare an aeronautical charts and instrument procedures security program, if applicable.
- (b) Each an aeronautical charts and instrument procedures security program shall specify the physical security requirements, practices, and procedures to be followed for the purposes of minimizing the risk of, destruction of, damage to, or interference with the operation of, any an aeronautical charts design and production unit operated by the applicant where such destruction, damage, or interference is likely to endanger the safety of aircraft.
- (c) Without limiting the generality of paragraph (b), the security program shall specify such physical security requirements, practices, and procedures as may be necessary:
 - (1) To ensure that entrances to permanent an aeronautical charts design and production facilities operated by the applicant are subject to positive access control at all times, so as to prevent unauthorized entry;
 - (2) To protect personnel on duty;
 - (3) To be followed in the event of a bomb threat or other threat of violence against an Aeronautical charts design and production unit; and
 - (4) To monitor unattended an aeronautical charts design and production unit facilities to ensure that any intrusion or interference is detected.

311.73 Coordination

- (a) Each applicant for the grant of an aeronautical charts design and production service certificate shall establish systems and procedures to ensure, where applicable, coordination between each unit listed in the applicant's exposition and the following agencies:
 - (1) The holder of the Telecommunications and Radio Air Navigation Facilities Service certificate issued under Part 171;
 - (2) Any holder of an aeronautical telecommunication service certificate issued under Part 174;
 - (3) The Egyptian Meteorological Services organization;
 - (4) The Egyptian Defense Force;
 - (5) Aircraft operators;
 - (6) Search and rescue authorities; and
 - (7) Where the listed an aeronautical charts design and production unit is an aerodrome control or aerodrome AIS unit:
 - (i) The aerodrome operator; and
 - (ii) The apron management service, if the aerodrome control unit does not provide that service.
- (b) The applicant shall provide systems and procedures to facilitate communications between the units having an operational requirement to communicate with each other.

- (c) The applicant shall provide systems and procedures to ensure that units, aircraft operators, and aviation meteorological service providers, are provided with charts required.

311.75 Training

Each applicant for the grant of aeronautical charts design and production service certificate shall:

- (a) Develop Training Program Manual and Training Plan.
- (b) Send Training Program Manual and Training Plan to ECAA for approval.
- (c) Establish procedures in accordance to the approved training programs for aeronautical charts designers position as follows:
 - 1- Initial training;
 - 2- Advanced training;
 - 3- On –job –training;
 - 4- Recurrent training; and
 - 5- Refresher training.
- (d) Ensure that the Training Programme must include all the training required for the incumbent of the position to acquire and maintain the necessary competencies for the position.
- (e) Ensure that the training programmes are appropriately implemented in accordance with periodic training plans detailing and prioritising the type of training needed over a specified time frame;
- (f) Ensure that the OJTI in an operational working position shall hold appropriate current instructor authorization by the ECAA.

Note: This authorization for personnel who are qualified and have received an instructional technique course and are selected for a specified appropriate in connection with training.

- (g) Nominate the qualified personnel carrying out assessment, training and examining to be authorized by the ECAA.
- (h) Ensure that all rating examinations of aeronautical charts conducted by aeronautical charts service provider shall be supervised by ECAA Charts inspector representative or as may be delegated by ECAA. (service provider shall inform ECAA two weeks earlier to examinations dates).

311.77 Training record

- (a) Each applicant for the grant of aeronautical charts design and production service certificate shall establish acceptable procedures by ECAA for keeping training record for all technical staff (in accordance with paragraph 311.75) and to be maintained up to date.
- (b) Each holder of an aeronautical charts design and production service certificate shall ensure that Training Record is done according to its Training Program Manual and Training Plan and shall send it to ECAA for approval.

311.79 Operations manuals

- (a) Each applicant for an aeronautical charts design and production service certificate shall provide an up to date operations manual, to be available for compliance by its personnel, to perform the services listed in its exposition.
- (b) Operations manual shall include and not limited to the following:
 - 1. Details of the applicant's staffing structure, including an organisation chart showing lines of responsibility of the persons specified and description for all services listed;
 - 2. The duties and responsibilities of the person or persons;
 - 3. List of the types of instrument flight procedure to be designed and certified by the applicant's organisation;
 - 4. Description for all services listed;
 - 5. Contain the Technical specifications for the services provided Such as: procedures, instructions and information required by the operations personnel to perform their duties;
 - 6. Exposition contain the title, duties and responsibilities for the persons and seniors;
 - 7. Contingency, emergency, safety and quality plans;
 - 8. Other Technical and administrative procedures concerned

-
9. The format and standards for the aeronautical charts design designed under the authority of their IFPDS certificate;
 10. The relevant parts of the Operations Manual are accessible to the personnel concerned;
 11. Procedures to control, amend and distribute the Operations Manual.
 12. Operations personnel are informed of amendments to the Operations Manual.
- (c) Each holder of an aeronautical charts design service certificate shall ensure that aeronautical charts design staff have access to relevant and up-to-date reference material such as and not limited to (ICAO documents and other user material/guides) instructions, and any other documentation that is necessary for the execution of aeronautical charts design and production service listed in their Operations Manual.

311.81 Contingency plan

Each applicant for the grant of aeronautical information services certificate shall establish a contingency plan providing for the safe and orderly flow of information in the event of a disruption, and / or interruption.

311.83 RE – qualification requirements

Each aeronautical charts design and production service provider personnel who has become unqualified due to not having satisfactorily completed recurrent training, competency or familiarization with the appropriate eligibility period shall comply with the re-qualification procedures accepted by the ECAA.

311.85 - 311.99 [Reserved]

Subpart C Operating Requirements

311.101 Operational requirements for aeronautical charts

- (a) The total phase of flight can be sequenced into the following phases:
 - (1) Phase 1 — Taxi from aircraft stand to take-off point
 - (2) Phase 2 — Take-off and Note. — The total flight is divided into the following phases: Climb to en-route ATS route structure
 - (3) Phase 3 — En route ATS route structure
 - (4) Phase 4 — Descent to approach
 - (5) Phase 5 — Approach to land and missed approach
 - (6) Phase 6 — Landing and taxi to aircraft stand.
- (b) Each type of chart shall provide information relevant to the function of the chart and its design shall observe Human Factors principles, which facilitate its optimum use.
- (c) Each type of chart shall provide information appropriate to the phase of flight, to ensure the safe and expeditious operation of the aircraft.
- (d) The presentation of information shall be accurate, free from distortion and clutter, unambiguous, and be readable under all normal operating conditions.
- (e) Colors or tints and type size used shall be such that the chart can be easily read and interpreted by the pilot in varying conditions of natural and artificial light.
- (f) The information shall be in a form, which enables the pilot to acquire it in a reasonable time consistent with workload and operating conditions.
- (g) 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.
- (h) Each applicant for the grant of an aeronautical charts design and production service certificate should make the charts to be True North orientated.
- (i) The basic sheet size of the charts should be 210 x 148 mm (A5).

311.103 Titles

The title of a chart or chart series prepared in accordance with the requirements of this Part 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 the requirements specified in this Part.

311.105 Miscellaneous information

Each applicant for the grant of an aeronautical charts design and production service certificate shall:

- (a) Make the marginal note layout in accordance to Annex.
- (b) Show the following information 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.
- (c) Provide a legend to the symbols and abbreviations used. 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) Show the name and adequate address of the producing agency in the margin of the chart.

311.107 Symbols

Each applicant for the grant of an aeronautical charts design and production service certificate shall conform the symbols used to those shown in Annex 4, 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 ICAO chart symbol or impair the legibility of the chart.

311.109 Units of measurement

Each applicant for the grant of an aeronautical charts design and production service certificate shall:

- (a) Derive distances as geodesic distances.
- (b) Express the distances in nautical miles.
- (c) Express altitudes, elevations and heights in feet.
- (d) Express linear dimensions on aerodromes and short distances in meters.
- (e) Specify the order of resolution of distances, dimensions, elevations and heights for a particular chart.
- (f) State the units of measurement used to express distances, altitudes, elevations and heights on the face of each chart.
- (g) Provide the conversion scales (kilometers/nautical miles, meters/feet) on each chart on which distances, elevations or altitudes are shown. The conversion scales shall be placed on the face of each chart.

311.111 Scale and projection

Each applicant for the grant of an aeronautical charts design and production service certificate shall indicate:

- (a) The name and basic parameters and scale of the projection for charts of large areas.
- (b) A linear scale only for charts of small areas.

311.113 Date of validity of aeronautical information

Each applicant for the grant of an aeronautical charts design and production service certificate shall indicate clearly the date of validity of aeronautical information on the face of each chart.

311.115 Spelling of geographical names

Each applicant for the grant of an aeronautical charts design and production service certificate shall:

- (a) Use the symbols of the Roman alphabet for all writing.
- (b) Accept the names of places and of geographical features in countries which officially use varieties of the Roman alphabet in their official spelling, including the accents and diacritical marks used in the respective alphabets.
- (c) Spell where a geographical term such as “cape”, “point”, “gulf”, “river”, is abbreviated on any particular chart, that word 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.

311.117 Abbreviations

Each applicant for the grant of an aeronautical charts design and production service certificate:

- (a) Shall use abbreviations on aeronautical charts whenever they are appropriate.
- (b) Where applicable, should select abbreviations from the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (Doc 8400).

311.119 Political boundaries

Each applicant for the grant of an aeronautical charts design and production service certificate shall:

- (a) Show International boundaries but may be interrupted if data more important to the use of the chart would be obscured.
- (b) Where the territory of more than one State appears on a chart, shall indicate the names identifying the countries.

311.121 Relief

(a) Relief, where shown, each applicant for the grant of an aeronautical charts design and production service certificate shall portray in a manner that will satisfy the chart users' need for:

- (1) Orientation and identification;
- (2) Safe terrain clearance;

- (3) Clarity of aeronautical information when shown;
- (4) Planning.
- (b) Each applicant for the grant of an aeronautical charts design and production service certificate shall show the spot elevations for selected critical points.
- (c) Each applicant for the grant of an aeronautical charts design and production service certificate shall follow the value of spot elevations of doubtful accuracy by the sign \pm .

311.123 Prohibited, restricted and danger areas

When prohibited, restricted or danger areas are shown, each applicant for the grant of an aeronautical charts design and production service certificate shall include the reference or other identification except that the nationality letters may be omitted.

311.125 Air traffic services airspace

When ATS airspace is shown on a chart, each applicant for the grant of an aeronautical charts design and production service certificate shall indicate the class of airspace, the type, name or call sign, the vertical limits and the radio frequency(ies) to be used and the horizontal limits depicted in accordance with Annex 4 .

311.127 Magnetic variation

- (a) Each applicant for the grant of an aeronautical charts design and production service certificate shall indicate:
 - (1) True North and magnetic variation shall be indicated.
 - (2) The order of resolution of magnetic variation of magnetic variation as specified for particular chart.
- (b) When magnetic variation is shown on a chart, the values shown should be those for the year nearest to the date of publication that is divisible by 5. In exceptional cases where the current value would be more than one degree different, after applying the calculation for annual change, an interim date and value should be quoted.

311.129 Aeronautical data

Each applicant for the grant of an aeronautical charts design and production service certificate shall:

- (a) 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 as outlined in ECAR Part 173.93. 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.
- (b) Ensure that the order of chart resolution of aeronautical data to be that as specified for a particular chart, and as presented in a tabular form in Annex 4 and ICAO Document 10066 (PANS-AIM).
- (c) Ensure that integrity of aeronautical data is maintained throughout the data process survey/ from receiving to the next intended user. Aeronautical data integrity requirements shall be based upon the potential risk resulting from the corruption of data and upon the use to which the data item is put.
- (d) Aeronautical data quality requirements related to the integrity and data classification shall be as provided in Annex 4 and ICAO Document 10066 (PANS-AIM). Protection of electronic aeronautical data while stored or in transit shall be totally monitored by the Cyclic Redundancy Check (CRC).
- (e) To achieve protection of the integrity level of critical and essential aeronautical data, a 32- or 24-bit CRC algorithm shall apply respectively.
- (f) To achieve protection of the integrity level of routine aeronautical data , a 16-bit CRC algorithm or a WX system software or any equivalent system.

311.131 World Geodetic System — 1984 (WGS-84)

Each applicant for the grant of an aeronautical charts design and production service certificate shall make use of the following:

- (a) Horizontal reference system. 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 requirements in ECAR Part 173.71(h) & (k) and ECAR Part 139.307 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 Annex 4 and ICAO Document 10066 (PANS-AIM) .
- (d) Vertical reference system. Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system.
- (e) In addition to the elevation (referenced to mean sea level) for the specific surveyed ground positions, publish geoids undulation (referenced to the WGS-84 ellipsoid) for those positions 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 Annex 4 and ICAO Document 10066 (PANS-AIM).
- (g) Temporal reference system. The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system.
- (h) When a different temporal reference system is used for charting, this shall be indicated in GEN 2.1.2 of the Aeronautical Information Publication (AIP).

311.133 Aeronautical Charts Provisions

Each applicant for the grant of an aeronautical charts design and production service certificate shall fulfill the requirements listed under the following headings according to last up to date Annex 4, Annex 11, ICAO Doc 8697 and ICAO Doc 10066:

- (a) Aerodrome obstacle chart — ICAO type A (operating limitations)
- (b) En route chart — ICAO
- (c) Standard departure chart — instrument (SID) — ICAO
- (d) Standard arrival chart — instrument (STAR) — ICAO
- (e) Instrument approach chart — ICAO
- (f) Aerodrome /heliport chart — ICAO
- (g) Aircraft parking/docking chart — ICAO
- (h) Precision approach terrain chart – ICAO
- (i) World Aeronautical Chart — ICAO 1:1 000 000
- (j) ATC Surveillance Minimum Altitude Chart — ICAO