Statutory Instrument No. 134 of 2020

CIVIL AVIATION (AERONAUTICAL INFORMATION SERVICES) REGULATIONS, 2020

(*Published on 6th November, 2020*)

ARRANGEMENT OF REGULATIONS

IN EXERCISE of the powers conferred on the Minister of Transport and Communications by section 89 of the Civil Aviation Act, the following Regulations are hereby made —

PART I — *Preliminary provisions*

Citation

1. These Regulations may be cited as the Civil Aviation (Aeronautical Information Services) Regulations, 2020.

Interpretation

2. In these Regulations, unless the context otherwise requires —

"aerodrome mapping data" means data collected for the purpose of compiling aerodrome mapping information;

"aerodrome reference point (ARP)" means a designated geographical location of an aerodrome;

"aeronautical chart" a representation of a portion of the earth, its culture and relief, specifically designated to meet the requirements of air navigation;

"aeronautical data" means a representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing;

"aeronautical fixed service (AFS)" a telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services;

"aeronautical information" means information resulting from the assembly, analysis and formatting of aeronautical data;

"aeronautical information circular (AIC)" means a notice containing information that does not qualify for the origination of a Notice To Air Men (NOTAM) or for inclusion in the aeronautical information publication, but which relates to flight safety, air navigation, technical, administrative or legislative matters;

"aeronautical information management (AIM)" means the dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties;

"aeronautical information product" means aeronautical data and aeronautical information provided either as digital data sets or as a standardized presentation in paper or electronic media and includes —

(*a*) Aeronautical Information Publication (AIP), including Amendments and Supplements;

(*b*) Aeronautical Information Circulars (AIC);

(*c*) Aeronautical charts;

(*d*) NOTAM; and

(*e*) Digital data sets;

"aeronautical information publication (AIP)" means a publication issued by or with the authority of the Authority and containing aeronautical information of a lasting character essential to air navigation;

"Aeronatical Information Regulation and Control (AIRAC) means a regulated system where establishment, withdrawal or significant changes in aeronautical information is based upon a series of common effective dates at intervals of 28 days"

"aeronautical information service (AIS)" means a service established within the defined area of coverage responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation;

"AIP amendment" means permanent changes to the information contained in the aeronautical information publication;

"AIP supplement" means temporary changes to the information contained in the aeronautical information publication which are provided by means of special pages;

"aeronautical information regulation and control" means a system aimed at advance notification, based on common effective dates, of circumstances that necessitate significant changes in operating practices;

"air defence identification zone (ADIZ)" means special designated airspace of defined dimensions within which aircraft are required to comply with special identification or reporting procedures additional to those related to the provision of air traffic services;

"Air Traffic Management (ATM)" means the dynamic, integrated management of air traffic and airspace (including air traffic services, airspace management and air traffic flow management) — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions;

"application" means manipulation and processing of data in support of user requirements (ISO 19104*);

"area navigation (RNAV)" means a method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these;

"assemble" means a process of merging data from multiple sources into a database and establishing a baseline for subsequent processing;

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

"confidence level" means the probability that the true value of a parameter is within a certain interval around the estimate of its value;

"culture" means all man-made features constructed on the surface of the earth, such as cities, railways and canals;

"danger area" means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times;

"data accuracy" means a degree of conformance between the estimated or measured value and the true value;

"data completeness" means the degree of confidence that all of the data needed to support the intended use is provided;

"data format" means a structure of data elements, records and files arranged to meet standards, specifications or data quality requirements;

"data integrity assurance level" means a degree of assurance that an aeronautical data and its value has not been lost or altered since the data origination or authorized amendment;

"data product" means a data set or data set series that conforms to a data product specification (ISO 19131*);

"data product specification" means a detailed description of a data set or data set series together with additional information that will enable it to be created, supplied to and used by another party (ISO 19131*);

"data quality" means a degree or level of confidence that the data provided meet the requirements of the data user in terms of accuracy, resolution and integrity or equivalent assurance level), traceability, timeliness, completeness and format;

"data resolution" means a number of units or digits to which a measured or calculated value is expressed and used;

"data set" means an identifiable collection of data (ISO 19101*);

"data set series" means a collection of data sets sharing the same product specification (ISO 19115*);

"data timeliness" means the degree of confidence that the data is applicable to the period of its intended use;

"data traceability" means the degree that a system or a data product can provide a record of the changes made to that product and thereby enable an audit trail to be followed from the end-user to the originator;

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

"feature" means abstraction of real world phenomena (ISO 19101*);

"feature type" means class of real world phenomena with common properties (ISO 19110*);

"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;

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

"gregorian calendar" means calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108*);

"height" means the vertical distance of a level, point or an object considered as a point, measured from a specific datum;

"heliport" means an aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters;

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

"integrity classification (aeronautical data)" means classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data are 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;

"international NOTAM office (NOF)" means an office designated by the Authority for the exchange of NOTAM internationally;

"manoeuvring area" means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons;

"metadata" means data about data (ISO 19115*);

"movement area" means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron;

"next intended user" means the entity that receives the aeronautical data or information from the Aeronautical Information Service;

"NOTAM" means a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;

"obstacle" means all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that —

(*a*) are located on an area intended for the surface movement of an aircraft; or

(*b*) extend above a defined surface intended to protect aircraft in flight; or

(*c*) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation;

"obstacle or terrain data collection surface" means a defined surface intended for the purpose of collecting obstacle or terrain data;

"origination (aeronautical data or aeronautical information)" means the creation of the value associated with new data or information or the modification of the value of an existing data or information;

"originator (aeronautical data or aeronautical information)" means an entity that is accountable for data or information origination or from which the AIS organisation receives aeronautical data and information;

"position (geographical)" means a set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of a point on the surface of the earth;

"precision" means the smallest difference that can be reliably distinguished by a measurement process;

"prohibited area" means an airspace of defined dimensions, above the land areas or territorial waters of the Republic of Botswana, within which the flight of aircraft is prohibited;

"quality" means a degree to which a set of inherent characteristics fulfils requirements (ISO 9000*);

"quality management" means coordinated activities to direct and control an organisation with regard to quality (ISO 9000*);

"requirement" means a need or expectation that is stated, generally implied or obligatory (ISO 9000*);

"resolution" means a number of units or digits to which a measured or calculated value is expressed and used;

"restricted area" means an airspace of defined dimensions, above the land areas or territorial waters of the Republic of Botswana, within which the flight of aircraft is restricted in accordance with certain specified conditions;

"terrain" means the surface of the earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles;

"traceability" means ability to trace the history, application or location of that which is under consideration (ISO 9000*);

"validation" means confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled (ISO 9000*);

"verification" means confirmation, through the provision of objective evidence, that specified requirements have been fulfilled (ISO 9000*).

Application of the Regulations

3. These Regulations shall apply to an aeronautical information services provider.

PART II — *General Provisions*

Provision of an aeronautical information service

4. A person shall not provide an aeronautical information service, and undertake aeronautical data and information management unless he or she has certificate issued in accordance with the Civil Aviation (Certification of Air Navigation Service Providers) Regulations.

Horizontal reference system

5. An aeronautical information service provider shall ensure that —

(*a*) the horizontal reference system is the world geodetic system-1984 (WGS- 84);

(*b*) the published aeronautical geographical coordinates indicating latitude and longitude are expressed in terms of the (WGS – 84) geodetic reference datum;

(*c*) the precise geodetic applications and some air navigation applications, temporal changes in the tectonic plate motion and tidal effects on the earth's crust are modelled and estimated; and

(*d*) an epotch shall be included with any set of absolute station co-ordinates to reflect the temporal effect.

Vertical reference system

6. An aeronautical information service provider shall ensure that —

(*a*) the mean sea level datum is used as the vertical reference system for international air navigation;

(*b*) the earth gravitational model 1996 (EGM-96 is used for international air navigation as the global gravity model;

(*c*) at those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EGM-96 data, regional, national or local geiod models containing high resolution (short wavelength) gravity field data are developed and used; and

(*d*) when a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, are provided in the Aeronautical Information Publication (AIP).

Temporal reference system

7. An aeronautical information service provider shall ensure that —

(*a*) the gregorian calendar and coordinated universal time is used as the temporal reference system for civil aviation; and

(*b*) when a different temporal reference system is used for some applications, the feature catalogue, or the metadata associated with an application schema or a data set, as appropriate, and includes either a description of that system or a citation for a document that describes that temporal reference system.

Miscellaneous specifications

8. An aeronautical service provider shall ensure that —

(*a*) aeronautical information products intended for international distribution include English text for parts expressed in plain language;

(*b*) the names of places are spelt in conformity with loca usage, transliterated, when necessary, into the ISO-Basic Latin alphabet;

(*c*) the units of measurement used in the origination, processing and distribution of aeronautical data and aeronautical information are consistent with the tables contained in Civil Aviation (Units of Measurement to be Used in Air and Ground Operations) Regulations; and

(*d*) abbreviations published in the Botswana AIP are used in the aeronautical information products whenever they are appropriate and that their use will facilitate distribution of aeronautical data and aeronautical information.

PART III — *Responsibilities and Functions*

Role of Authority

9. The Authority —

(*a*) may delegate the authority for the provision of the Aeronautical Information service to any agency, provided the requirements of these Regulations are adequately met;

(*b*) shall ensure that the provision of aeronautical data and aeronautical information covers the entire territory of Botswana including delegated airspace for which Botswana is responsible for the provision of air traffic services;

(*c*) shall ensure that aeronautical data and aeronautical information provided for and on behalf of the Authority clearly indicate that they are provided under the authorisation of the Authority irrespective of the format in which they are provided;

(*d*) shall ensure that the aeronautical data and aeronautical information provided are of required quality in accordance with these Regulations; and

(*e*) shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information and the aeronautical information service in relation to the timely and complete provision of aeronautical data and aeronautical information.

Aeronautical information service provider responsibilities and functions

10. (1) An aeronautical information service provider shall ensure that aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation are made available in a form suitable for the operational requirements of the air traffic management community, including —

(*a*) those involved in flight operations, including flight crews, flight planning and flight simulators; and

(*b*) the air traffic services unit responsible for flight information service and the services responsible for pre-flight information.

(2) An aeronautical information service provider shall —

(*a*) receive, collate or assemble, edit, format, publish or store and distribute aeronautical data and aeronautical information concerning the entire territory of Botswana;

(*b*) provide aeronautical data and aeronautical information as aeronautical information products;

(*c*) make available aeronautical information service during the whole period an aircraft is in flight in the area of responsibility of an aeronautical information service and the period of at least two hours before and after such a period where 24-hour service is not provided;

(*d*) make available aeronautical information service at such other time as may be requested by an appropriate ground organisation; and

(*e*) obtain aeronautical data and aeronautical information for pre-flight information service and in-flight information from the aeronautical information services of other States or other sources that may be available.

(3) An aeronautical information service provider shall ensure that the

(*a*) aeronautical data and aeronautical information obtained from other States, when distributed, is clearly identified as having the authority of the State of Origin; and

(*b*) aeronautical data and aeronautical information obtained from other sources other than other States, is verified before distribution and if not verified, when distributed, be clearly identified as such.

(4) An aeronautical information service provider shall promptly make available to the aeronautical information services of other States, any aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation required by them to enable compliance with these Regulations.

Exchange of aeronautical data and aeronautical information

11. An aeronautical information service provider shall —

(*a*) designate the office to which all elements of the aeronautical information products originated by other States is addressed and the office shall be qualified to deal with requests for aeronautical data and aeronautical information provided by other States;

(*b*) arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication;

(*c*) establish direct contact with other providers of aeronautical information services in order to facilitate the international exchange of aeronautical data and aeronautical information;

(*d*) except as provided in paragraph (*e*) avail one copy of each of the elements of the following aeronautical information products, where available, that have been requested by the aeronautical information service of an ICAO Contracting State without charge —

(i) Aeronautical Information Publication (AIP), including its amendments and Supplements,

(ii) Aeronautical Information Circulars (AIC), and

(iii) NOTAM and Aeronautical Charts;

(*e*) ensure that the exchange of more than one copy of the elements of aeronautical information products and other air navigation documents, including those containing air navigation legislation and regulations, are subject to a bilateral agreement between the participating aeronautical information service provider and entity of other ICAO Contracting States;

(*f*) where aeronautical information and aeronautical data is provided in the form of digital data sets to be used by the AIS, it is provided on the basis of agreement between the Botswana and concerned Contracting States;

(*g*) ensure that the procurement of aeronautical data and aeronautical information, including the elements of aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, by other entities is subject to separate agreement with the aeronautical information service provider; and

(*h*) globally interoperable aeronautical data and information exchange models are used for the provision of data sets.

Obligation of aeronautical data and aeronautical information service providers

12. (1) An aeronautical information service provider shall identify, notify and make formal arrangements with persons in custody of aeronautical data and aeronautical information.

(2) The aeronautical information service provider shall ensure that formal arrangements established with data originators or providers identified in subregulation (1) require timely submission of new or amended aeronautical data and aeronautical information.

(3) The data originator or provider shall ensure that the aeronautical data and aeronautical information provided is accurate, complete and timely.

(4) A data or information originator shall as soon as practicable after becoming aware of the need for the change of the data or information, provide aeronautical information services with updated aeronautical data and aeronautical information with an effective date.

(5) A data or information originator who contravenes the provisions of subregulation (4) commits an offence.

(6) An aeronautical information service provider shall by notice in writing, request a person who owns, controls or operates objects and or structures that affects aviation safety to submit data or information on the objects and structures.

(7) Any person who fails to comply with the request made under subregulation (6) commits an offence.

Copyright and cost recovery

13. An aeronautical information service provider shall ensure that —

(*a*) any product received by the aeronautical service provider in accordance with these Regulations from another State's aeronautical service provider which has been granted copyright protection by that State is —

(i) only made available to a third party on the condition that the third party is made aware that the product is copyright protected, and

(ii) appropriately annotated that the product is subject to copyright by the originating State;

(*b*) when aeronautical information and aeronautical data is provided to a aeronautical service provider provider by the aeronautical service provider of other State in accordance with regulation 11 (*e*), digital data sets of the providing State is not provided to any third party without the consent of the providing State; and

(*c*) the overhead cost of collecting and compiling aeronautical data and aeronautical information are included in the cost basis for airport and air navigation services charges, as appropriate.

Information management requirements

14. An aeronautical information service provider shall ensure that the information management resources and processes established are adequate to warrant the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management system.

Data quality specifications

15. An aeronautical information service provider shall ensure —

(*a*) data accuracy by ensuring that the order of accuracy for aeronautical data provided by the aeronautical information service provider is in accordance with its intended use;

(*b*) data resolution by ensuring that the order of resolution of aeronautical data is commensurate with the actual data accuracy;

(*c*) data integrity by ensuring that —

(i) the integrity of aeronautical data is maintained throughout the data process from origination to distribution to the next intended user,

(ii) based on the applicable intergrity classification, procedures are put in place in order to —

(*aa*) avoid corruption throughout the processing of routine data,

(*bb*) assure corruption does not occur at any stage of the entire process and include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level for essential data, and

(*cc*) 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 by thorough analysis of the overall system architecture as potential data integrity risks for critical data;

(*d*) data traceability by ensuring that traceability of aeronautical data is retained as long as the data is in use;

(*e*) data timeliness by including limits on the effective period of the data elements;

(*f*) data completeness in order to support the intended use; and

(*g*) that the format of the delivered data is adequate such that the data is interpreted in a manner that is consistent with its intended use.

Aeronautical data and aeronautical information validation and verification

16. An aeronautical information raw data provider shall —

(*a*) ensure that material to be issued as part of an aeronautical information product is thoroughly checked before submission to the aeronautical information service, in order to ensure that all necessary information has been included and that the information is correct in detail; and

(*b*) establish verification and validation procedures which ensure that the aeronautical data and aeronautical information received meets the quality requirements.

Data error detection

17. An aeronautical information service provider shall ensure that —

(*a*) digital data error detection techniques are used during the transmission or storage of aeronautical data and digital data sets; and

(*b*) digital data error detection technique is used in order to maintain the intergrity levels as specified in regulation 15 (*c*).

Use of automation

18. An aeronautical information service provider shall ensure that —

(*a*) automation is applied in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services;

(*b*) due consideration to the integrity of data and information is given when automated processes are implemented and mitigating steps taken where risks are identified; and

(*c*) in order to meet the data quality requirements, automation —

(i) enables digital aeronautical data exchange between the parties involved in the data processing chain, and

(ii) uses aeronautical information exchange models and data exchange models designed to be globally interoperable.

Quality management system

19. (1) An aeronautical information service provider shall implement and maintain a quality management system that —

(*a*) encompasses all functions of an aeronautical information service as outlined in these Regulations and the execution of such quality management systems is made demonstrable at each function stage;

(*b*) is applicable to the whole aeronautical information data chain from data origination to distribution to the next intended user, taking into consideration the intended use of data;

(*c*) is based on the elements of the latest edition of the ISO 9001 standard, as in force from time to time, that are relevant to the provision of aeronautical information service and as may be prescribed by the Authority;

(*d*) is certified by an ISO accredited certification body;

(*e*) include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data are is traceable throughout the aeronautical information data chain so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users; and

(*f*) provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements.

(2) The aeronautical information service provider shall —

(*a*) ensure that all necessary measures are taken to monitor compliance with the quality management system;

(*b*) ensure that the competencies and the associated knowledge, skills and abilities required for each function are identified;

(*c*) ensure that the personnel assigned to perform those functions are adequately trained;

(*d*) ensure that processes are in place to ensure that personnel possess the competencies required to perform specific assigned functions;

(*e*) ensure that appropriate records are maintained so that the qualifications of personnel can be confirmed;

(*f*) ensure that initial and periodic assessments are established that require personnel to demonstrate the required competencies;

(g) ensure that periodic assessments of personnel is used as a means to detect and correct shortfalls in knowledge, skills and abilities;

(*h*) ensure that the quality management system takes into account human factor considerations as stipulated under regulation 20; and

(*i*) demonstrate compliance of the quality management system by audit and where non-conformity is identified, initiating action to determine and correct its cause without undue delay and shall properly document all audit observations and remedial actions taken.

Human factor considerations

20. An aeronautical information service provider shall ensure that —

(*a*) the organisation of an AIS as well as the design, contents, processing and distribution of aeronautical data and aeronautical information takes into consideration human factors principles which shall facilitate their optimum utilization; and

(*b*) due consideration is given to the integrity of information where human interaction is required and that mitigating steps are taken where risks are identified.

Scope of aeronautical data and aeronautical information

21. (1) An aeronautical information service provider shall receive and manage atleast the following sub-domains of aeronautical data and aeronautical information —

(*a*) national regulations, rules and procedures;

(*b*) aerodromes and heliports;

(*c*) Air Traffic Services (ATS) routes;

(*d*) instrument flight procedures;

(*e*) radio navigation aids or systems;

(*f*) obtacles;

(*g*) terrain;

(*h*) geographic information; and

(*i*) airspace.

(2) An aeronautical information service provider shall ensure that determination and reporting of aeronautical data is in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

Metadata

22. (1) An aeronautical information service provider shall collect metadata for aeronautical processes and exchange points.

(2) The metadata collected shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user.

(3) The metadata collected under subregulation (1), shall include the following —

(*a*) the names of organisations or entities performing any action of originating, transmitting or manipulating the data;

(*b*) the action performed; and

(*c*) the date and time the action was performed.

Aeronautical information on products and services

23. (1) An aeronautical information service provider shall provide aeronautical information in the form of aeronautical information products and associated services.

(2) Where aeronautical data and aeronautical information are provided in multiple formats, the aeronautical information provider shall implement processes to ensure data and information consistency between formats.

Aeronautical information in standardised presentation

24. An aeronautical information service provider shall ensure that —

(*a*) aeronautical information is provided in a standardised presentation and includes the AIP, AIP Amendments, AIP Supplements, AICs, NOTAMs and aeronautical charts;

(*b*) the AIP, AIP Amendment, AIP Supplement and AIC are provided on a paper form or as an electronic document; and

(*c*) the AIP, AIP Amendment, AIP Supplement and AIC provided as an electronic document (eAIP) allow for both displaying on electronic devices and printing on paper.

Aeronautical Information Publication (AIP)

25. The Authority shall ensure that the AIP includes —

(*a*) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP;

(*b*) the general conditions under which the services or facilities are available for international use;

(*c*) a list of significant differences between the national regulations and practices of Botswana and the related ICAO Standards, Recommended Practices and Procedures, given in a form that would enable a user to differentiate readily between the requirements of Botswana and the related ICAO provisions; and

(*d*) the choice made by Botswana in each significant case where an alternative course of action is provided for in ICAO Standards, Recommended Practices and Procedures.

Aeronautical Information Publication Supplement

26. An aeronautical information service provider shall provide a checklist of valid AIP Supplements on a monthly basis to its customers.

Aeronautical Information Circular (AIC)

27. The Authority shall ensure that the AIC —

(*a*) provides a long term forecast of major change in legislation, regulations, procedures or facilities;

(*b*) provides information of a purely explanatory or advisory nature liable to affect flight safety;

(*c*) provides information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters;

(*d*) is not used for information that qualifies for inclusion in AIP or NOTAM; and

(*e*) is reviewed at least once a year and a new checklist is provided.

Aeronautical charts

28. (1) The Authority shall ensure that the following aeronautical charts are, when available for designated international aerodromes or heliports, form part of the AIP, or are provided separately to recipients of the AIP —

(*a*) Aerodrome or Heliport Chart – ICAO;

(*b*) Aerodrome Ground Movement Chart – ICAO;

(*c*) Aerodrome Obstacle Chart – ICAO Type A;

(*d*) Aerodrome Obstacle Chart – ICAO Type B (when available);

(*e*) Aerodrome Terrain and Obstacle Chart – ICAO (Electronic);

(*f*) Aircraft Parking or Docking Chart – ICAO;

(*g*) Area Chart – ICAO;

(*h*) Air Traffic Control Surveillance Minimum Altitude Chart – ICAO;

(*i*) Instrument Approach Chart – ICAO;

(*j*) Precision Approach Terrain Chart – ICAO;

(*k*) Standard Arrival Chart – Instrument (STAR) - ICAO;

(*l*) Standard Departure Chart – Instrument (SID) - ICAO;

(*m*) Visual Approach Chart – ICAO; and

(*n*) Enroute Chart – ICAO.

(2) The aeronautical charts listed alphabetically below shall, when available, be provided as aeronautical information products - –

(*a*) World Aeronautical Chart – ICAO 1:1 000 000;

(*b*) Aeronautical Chart – ICAO 1:500 000;

(*c*) Aeronautical Navigation Chart – ICAO Small Scale;

(*d*) Plotting Chart – ICAO chart; and

(*e*) Air Traffic Control Surveillance Minimum Altitude Chart – ICAO.

(3) The chart resolution of aeronautical data shall be as specified for a particular chart under Civil Aviation (Aeronautical Charts) Regulations.

(4) The electronic aeronautical chart shall be provided based on digital databases and the use of geographic information system.

Digital data sets

29. (1) An aeronautical information service provider shall ensure that digital data are in the following form —

(*a*) AIP data set;

(*b*) terrain data sets;

(*c*) obstacle data sets;

(*d*) aerodrome mapping data sets; and

(*e*) instrument flight procedure data sets.

(2) An aeronautical information service provider shall ensure that —

(*a*) each data set is provided to the next intended user together with at least the minimum set of metadata that ensures traceability; and

(*b*) a checklist of valid data sets is regularly provided.

(3) An aeronautical information service provider shall ensure that —

(*a*) an AIP data set provided covers the extent of information provided in the AIP;

(*b*) when it is not possible to provide a complete AIP data set, the data subset that is available is provided; and

(*c*) the AIP data set contains the digital representation of aeronautical information of lasting character (permanent information and long duration temporary changes) essential to air navigation.

Terrain and obstacle data sets

30. (1) An aeronautical information service provider shall ensure that the coverage areas for sets of terrain and obstacle data are specified as —

(*a*) Area 1: the entire territory of a State;

(*b*) Area 2: within the vicinity of an aerodrome, subdivided as follows —

(i) Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists,

(ii) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10km and a splay of 15 percent to each side,

(iii) Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a, and

(iv) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45km from the aerodrome reference point, or to an existing terminal control area (TMA) boundary, whichever is nearest;

(*c*) Area 3:- the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90m from the runway centre line and 50m from the edge of all other parts of the aerodrome movement area; and

(*d*) Area 4: the area extending 900m prior to the runway threshold and 60m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

(2) Where the terrain at a distance greater than 900 m (3 000 ft) from the runway threshold is mountainous or otherwise significant, the length of Area 4 shall be extended to a distance not exceeding 2 000 m (6 500 ft) from the runway threshold.

(3) Terrain data sets shall —

(*a*) contain the digital representation of the terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum;

(*b*) be provided for Area 1;

(*c*) for aerodromes regularly used by international civil aviation, be provided for –

(i) Area 2a,

(ii) the take-off flight path area; and

(iii) an area bounded by the lateral extent of the aerodrome obstacle limitation surfaces;

(*d*) for aerodromes regularly used by international civil aviation, additional terrain data shall be provided within Area 2 as follows —

(i) in an area extending 10km from the ARP, and

(ii) within the area 10km and the TMA boundary or 45km radius which evar is smaller where terrain penetrates a horizontal terrain data collection surface as 120m above the lowest runway elevation;

(*e*) arrangements shall be made for the coordination of providing terrain and data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same terrain are correct;

(*f*) for those aerodromes located near territorial boundaries, arrangements shall be made among States concerned to share terrain data;

(*g*) for aerodromes regularly used by international civil aviation,terrain data shall be provided for Area 3;

(*h*) for aerodromes regularly used by international civil aviation, electronic terrain data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters; and

(i) where additional terrain data is collected to meet other aeronautical requirements, the terrain data sets shall be expanded to include this additional data.

(4) Obstacle data sets shall —

(*a*) contain the digital representation of the vertical and horizontal extent of obstacles;

(*b*) not be included in terrain data sets;

(*c*) be provided for obstacles in Area 1 whose height is 100m or higher above ground;

(*d*) for aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation;

(*e*) for aerodromes regularly used by international civil aviation, obstacle data shall be provided for —

(i) Area 2a for obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists and Area 2a obstacle collection surface shall have height of 3m above the nearest runway elevation measured along the runway centre line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end,

(ii) objects in the take-off flight path area which project above a plane surface having a 1.2 percent slope and having a common origin with the take-off flight path area, and

(iii) penetrations of the aerodrome obstacle limitation surfaces;

(*f*) for aerodromes regularly used for international civil aviation, obstacle data shall be provided for Areas 2b, 2c and 2d for obstacles that penetrate the relevant obstacle data collection surface specified as follows —

(i) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10km and a splay of 15 percent to each side and Area 2b obstacle collection surface has a 1.2 percent slope extending from the ends of Area 2a at the elevation of the runway end in the direction of departure, with a length of 10km and a splay of 15 percent to each side, and

(ii) Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10km from the boundary of Area 2a and Area 2c obstacle collection surface has a 1.2 percent slope extending outside Area 2a and Area 2b at a distance of not more than 10km from the boundary of Area 2a and the initial elevation of Area 2c shall be the elevation of the point of Area 2a at which it commences, and

(iii) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest and Area 2d obstacle collection surface has a height of 100m above ground;

(*g*) not be collected for obstacles less than a height of 3m above ground in Area 2b and less than a height of 15m above ground in Area 2c;

(*h*) for adjacent aerodromes, where their respective coverage areas overlap, arrangements shall be made for co-ordinating the provision of obstacle data to ensure that the data for the same obstacle is correct;

(*i*) for aerodromes located near territorial boundaries, arrangements shall be made amongst States concerned to share obstacle data;

(*j*) for aerodromes regularly used for international civil aviation, obstacles data shall be provided for Area 3 for obstacles that penetrate the obstacle data collection surface which extends a half metre (0.5m) above the horizontal plane passing through the nearest point on the aerodrome movement; and

(*k*) when additional obstacle data is collected to meet other aeronautical requirements, the obstacle data sets shall be expanded to include this additional data.

Aerodrome mapping data sets

31. An aeronautical information service provider shall ensure that an aerodrome mapping data set -

(*a*) contains the digital representation of aerodrome features; and

(*b*) is made available for aerodromes regularly used by international civil aviation.

Instrument flight procedure data sets

32. An aeronautical information service provider shall ensure that —

(*a*) instrument flight procedure data sets contain the digital representation of instrument flight procedures; and

(*b*) instrument flight procedures data sets are made available for acrodromes regularly used by international civil aviation.

Distribution services

33. An aeronautical information service provider shall ensure that —

(*a*) aeronautical information products are distributed to authorised users who request them;

(*b*) AIP, AIP Amendments, and AIP Supplements and AIC are made available by the most expeditious means; and

(*c*) global communication networks such as the internet are, whenever practicable, employed for the provision of aeronautical information products.

NOTAM distribution

34. (1) An aeronautical information service provider shall —

(*a*) distribute NOTAM on the basis of a request;

(*b*) prepare NOTAM in conformity with the relevant provisions of the ICAO communication procedures; and

(*c*) whenever practicable, use Aeronautical Fixed Service AFS for NOTAM distribution.

(2) When a NOTAM is sent by means other than the AFS, a six-digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator shall be used, preceding the text and the originating State shall select the NOTAM that are to be given international distribution.

(3) An aeronautical information service provider shall ensure International exchange of NOTAM takes place only as mutually agreed between the international NOTAM offices concerned and between the NOTAM offices and multinational NOTAM Processing Units.

(4) The originating State shall, upon request, grant distribution of NOTAM series other than those distributed internationally.

(5) Selective distribution lists should be used when practicable.

(6) A checklist of valid NOTAM shall be provided monthly.

Pre-flight information service

35. An aeronautical information service provider shall ensure that —

(*a*) for any aerodrome or heliport normally used for international air operations, aeronautical information efficiency of air navigation and relative to the route stages originating at the aerodrome or heliport is made available to flight operations personnel, including flight crews and services responsible for pre-flight information; and

(*b*) aeronautical information provided for pre-flight planning purposes includes information of operational significance from the elements of the aeronautical information products.

Post-flight information service

36. An aeronautical information service provider shall —

(*a*) make arrangements to receive information concerning the state and operation of air navigation facilities or services noted by aircrews for any aerodrome or heliport used for international air operations;

(*b*) ensure that arrangements specified in paragraph (*a*) are made available to the aeronautical information service for publication;

(*c*) make arrangements to receive information concerning the presence of wildlife hazard observed by aircrews for any aerodrome or heliport used for international air operations; and

(*d*) ensure that the information about presence of wildlife hazard is made available to the aeronautical information service for such distribution as the circumstances necessitate.

Aeronautical information updates

37. An aeronautical information service provider shall keep aeronautical data and aeronautical information up to date.

Aeronautical Information Regulation and Control (AIRAC)

38. (1) An aeronautical information service provider shall distribute information concerning the following circumstances under the AIRAC system —

(*a*) limits (horizontal and vertical), regulations and procedures applicable to —

(i) flight information regions,

(ii) control areas,

(iv) advisory areas,

(v) ATS routes,

(vi) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and ADIZ, and

(vii) permanent areas or routes or portions thereof where the possibility of interception exists;

(*b*) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities;

(*c*) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;

(*d*) transition levels, transition altitudes and minimum sector altitudes;

(*e*) meteorological facilities (including broadcasts) and procedures;

(*f*) runways and stopways;

(*g*) taxiways and aprons;

(*h*) aerodrome ground operating procedures (including low visibility procedures);

(*i*) approach and runway lighting; and

(*j*) aerodrome operating minima if published by a State.

(2) An aeronautical information service provider shall ensure that —

(*a*) information notified under the AIRAC system shall not be changed further for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period;

(*b*) information provided under the AIRAC system is made available by the AIS so as to reach recipients at least 28 days in advance of the effective date;

(*c*) when information has not been submitted by the AIRAC date, a NIL notification is distributed not later than one cycle before the AIRAC effective date concerned;

(*d*) implementation dates other than AIRAC effective dates are not used for pre-planned operationally significant changes requiring cartographic work or for updating of navigation databases;

(*e*) the AIRAC system is also used for the provision of information relating to the establishment and withdrawal of, and premeditated significant changes in the circumstances listed below —

(i) position, height and lighting of navigational obstacles,

(ii) hours of service of aerodromes, facilities and services,

(iii) customs, immigration and health services,

(iv) temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft, and

(v) temporary areas or routes or portions thereof where the possibility of interception exists.

(3) An aeronautical information service provider shall ensure that whenever major changes are planned and where advance notice is desirable and practicable, information is made available by the AIS so as to reach recipients at least 56 days in advance of the effective date and is applied to the establishment of, and premeditated major changes in, the the following circumstances, and other major changes —

(*a*) new aerodromes for international instrument flight rules operations;

(*b*) new runways for instrument flight rules operations at international aerodromes;

(*c*) design and structure of the air traffic services route network;

(*d*) design and structure of a set of terminal procedures including change of procedure bearings due to magnetic variation change; and

(*e*) circumstances listed in these Regulations if the entire State or any significant portion thereof is affected or if cross-border coordination is required.

Aeronautical information product updates

39. (1) An aeronautical information service provider shall ensure that —

(*a*) AIP is amended or re-issued at such regular intervals as may be necessary to keep them up to date; and

(*b*) permanent changes to the AIP shall be published as AIP Amendments; and

(*c*) temporary changes of long duration, three months or longer, and information of short duration which contains extensive text or graphics is published as AIP Supplements.

(2) An aeronautical information service provider shall ensure that —

(*a*) when an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a "Trigger" NOTAM is originated;

(*b*) a NOTAM is originated and issued promptly whenever the information to be distributed is of a temporary nature and of short duration or when operationally significant permanent changes, or temporary changes of long duration are made at short notice, except for extensive text or graphics;

(*c*) a NOTAM is originated and issued concerning the following information —

(i) establishment, closure or significant changes in operation of an aerodrome, heliport or runway,

(ii) establishment, withdrawal and significant changes in operation of aeronautical services, (iii) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services, including —

(*aa*) interruption or return to operation,

(*bb*) change of frequencies,

(*cc*) change in notified hours of service,

(*dd*) change of identification,

(*ee*) change of orientation (directional aids),

(*ff*) change of location,

(*gg*) power increase or decrease amounting to 50 percent or more,

(*hh*) change in broadcast schedules or contents,

(*ii*) irregularity or unreliability of operation of any radio navigation and air-ground communication services, or

(*jj*) limitations of relay stations including operational impact, affected service, frequency and area;

(iv) unavailability of back-up and secondary systems, having a direct operational impact,

(v) establishment, withdrawal or significant changes made to visual aids,

(vi) interruption of or return to operation of major components of aerodrome lighting systems,
(vii) establishment, withdrawal or significant changes made to procedures for air navigation services,
(viii) occurrence or correction of major defects or impediments in the manoeuvring area,
(ix) changes to and limitations on availability of fuel, oil and oxygen,
(x) major changes to search and rescue facilities and services available,
(xi) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation,
(xii) changes in regulations requiring immediate action, e.g. prohibited areas for search and rescue action,
(xiii) the presence of hazards not otherwise promulgated, which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events);
(xiv) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;
(xv) erecting or removal of, or changes to, obstacles to air navigation in the take-off or climb, missed approach, approach areas and runway strip;
(xvi) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas;
(xvii) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;
(xviii) allocation, cancellation or change of location indicators;
(xix) changes in aerodrome or heliport rescue and fire fighting category provided;
(xx) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area,
(xxi) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures,
(xxii) observations or forecasts of space weather phenomena, the date and time of their occurrence, the flight levels where provided, and portions of the airspace which may be affected by the phenomena;
(xxiii) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions or horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;
(xxiv) release into the atmosphere of radioactive materials or toxic chemicals following a nuclear or chemical incident, the location, date and time of the incident, the flight levels and routes or portions thereof which could be affected and the direction of movement;
(xxv) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures or limitations which affect air navigation;
(xxvi) implementation of short-term contingency measures in cases of disruption, or partial disruption, of air traffic services and related supporting services; and
(xxvii) conflict zones which affect air navigation shall include information that is as specific as possible regarding the nature and extent of threats of that conflict and consequences for civil aviation.

(3) The following information shall not be notified by NOTAM —

(*a*) routine maintenance work on aprons and taxiways which does not affect the safe movement of aircraft;

(*b*) runway marking work, when aircraft operations can safely be conducted on other available runways, or the equipment used can be removed when necessary;

(*c*) temporary obstructions in the vicinity of aerodromes or heliports that do not affect the safe operation of aircraft;

(*d*) partial failure of aerodrome or heliport lighting facilities where such failure does not directly affect aircraft operations;

(*e*) partial temporary failure of air-ground communications when suitable alternative frequencies are known to be available and are operative;

(*f*) the lack of apron marshalling services and road traffic control;

(*g*) the unserviceability of location, destination or other instruction signs on the aerodrome movement area;

(*h*) parachuting when in uncontrolled airspace under VFR when controlled, at promulgated sites or within danger or prohibited areas;

(*i*) training activities by ground units;

(*j*) unavailability of back-up and secondary systems if these do not have an operational impact;

(*k*) limitations to airport facilities or general services with no operational impact;

(*l*) national regulations not affecting general aviation;

(*m*) announcement or warnings about possible or potential limitations, without any operational impact;

(*n*) general reminders on already published information;

(*o*) availability of equipment for ground units without containing information on the operational impact for airspace and facility users;

(*p*) information about laser emissions without any operational impact and fireworks below minimum flying heights;

(*q*) closure of movement area parts in connection with planned work locally coordinated of duration of less than one hour;

(*r*) closure, changes, unavailability in operation of aerodrome or heliport outside the aerodrome or heliport operational hours; and

(*s*) other non-operational information of a similar temporary nature.

Data set updates

40. An aeronautical information service provider shall ensure that —

(*a*) data sets are amended or re-issued at such regular intervals as maybe necessary to keep them up to date;

(*b*) permanent changes and temporary changes of long duration (three months or longer) made available as digital data are issued in the form of a complete data set or a sub-set that includes only the differences from the previously issued complete data set;

(*c*) when made available as a completely re-issued data set, the differences from the previously issued complete data set are indicated;

(*d*) when temporary changes of short duration are made available as digital data (Digital NOTAM), they use the same aeronautical information model as the complete data set; and

(*e*) updates to AIP and the digital data sets are synchronised.

PART V — *Administrative and Personnel Requirements*

Aeronautical information service facility, equipment, data and information requirements

41. An aeronautical information service provider shall —

(*a*) have the facilities and equipment that are necessary for providing its aeronautical information service, including appropriate premises and equipment to allow operational personnel to perform their duties; and

(*b*) provide its operational personnel with access to the aeronautical data and aeronautical information required for the publication of the Aeronautical Information product, or the aeronautical charts, that the aeronautical information service provider publishes.

Maintenance of records

42. An aeronautical information service provider shall have procedures for making, collecting, indexing, storing, securing, maintaining, accessing and disposing of the following —

(*a*) records that identify all incoming and outgoing aeronautical data and aeronautical information;

(*b*) records that identify each person who is authorised by the provider to process, check, edit, publish or distribute aeronautical data and aeronautical information;

(*c*) records that list the endorsements, qualifications and competencies of personnel who process, check, edit, publish or distribute aeronautical data and aeronautical information;

(*d*) records that identify each aeronautical information publication responsible person for an aeronautical data originator that provides aeronautical data or aeronautical information to the aeronautical information service provider;

(*e*) records that identify each occurrence of an error or omission in aeronautical data or aeronautical information published by the aeronautical information service provider in the aeronautical information product or on an aeronautical chart;

(*f*) records that contain the results of any audit, inspection or review of the provider's aeronautical information service; and

(*g*) an aeronautical information service provider shall ensure that records required to be maintained in terms of this regulation are legible and permanent.

PART VI — *Miscellaneous*

Reports of violation

43. (1) Any person who knows or suspects a violation of these Regulations shall report it to the Authority.

(2) For purposes of subregulation (1), the Authority shall determine the nature and type of investigation or enforcement action that need to be taken.

Failure to comply with direction

44. Any person who fails to comply with any direction given to him or her by the Authority or by any authorised person under these Regulations shall be deemed to have contravened these Regulations.

Penalties

45. A person who contravenes any provision of these Regulations, shall be liable to a fine not exceeding P100 000 or to imprisonment for a term not exceeding six months, or to both and may in addition have his certificate cancelled, or suspended.

MADE this 13th day of October, 2020.

THULAGANO M. SEGOKGO,
Minister of Transport and Communications.