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THE CIVIL AVIATION ACT

(No. 21 of 2013)

THE CIVIL AVIATION (AERONAUTICAL INFORMATION SERVICES) REGULATIONS, 2018

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THE CIVIL AVIATION ACT

(No. 21 of 2013)

IN EXERCISE of powers conferred by section 82 of the Civil Aviation Act, 2013 the Cabinet Secretary for Transport, Infrastructure, Housing and Urban Development makes the following Regulations—

CIVIL AVIATION (AERONAUTICAL INFORMATION SERVICES) REGULATIONS, 2018

PART I—PRELIMINARY

1. These Regulations may be cited as the Civil Aviation (Aeronautical Information Services) Regulations, 2018. Citation.

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

“accuracy” means a degree of conformance between the estimated or measured value and the true value;

“aerodrome” means a defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;

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

“aerodrome mapping database” means a collection of aerodrome mapping data organized and arranged as a structured data set;

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

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

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

“aeronautical information management” 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 publication” means a publication issued by or with the authority of the Authority and containing aeronautical information of a lasting character essential to air navigation;

“aeronautical information service” 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;

“aeronautical information publication amendment” means permanent changes to the information contained in the aeronautical information publication;

“aeronautical information publication supplement” means temporary changes to the information contained in the aeronautical information publication which are published 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” means special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services;

“aeronautical information services product” means aeronautical data and aeronautical information provided in the form of the elements of the Integrated Aeronautical Information Package (except Notice To Air Men and pre-flight information bulletin), including aeronautical charts, or in the form of suitable electronic media;

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

“area navigation” 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;

“ASHTAM” means a special series Notice To Air Men notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations;

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

“air traffic services surveillance service” means a term used to indicate a service provided directly by means of an air traffic services surveillance system;

“air traffic services surveillance system” means a generic term meaning variously, automatic dependent, PSR, SSR or any comparable ground-based system that enables the identification of aircraft;

“automatic dependent surveillance — broadcast” means a means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link;

“automatic dependent surveillance — contract” means a means by which the terms of an automatic dependent surveillance —

contract agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions automatic dependent surveillance — contract reports would be initiated, and what data would be contained in the reports;

“automatic terminal information service” means the automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof;

“Authority” means the Kenya Civil Aviation Authority;

“data link-automatic terminal information service” means the provision of automatic terminal information service via data link;

“voice-automatic terminal information service” means the provision of automatic terminal information service by means of continuous and repetitive voice broadcasts;

“bare earth” means a surface of the earth including bodies of water and permanent ice and snow, and excluding vegetation and manmade objects;

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

“canopy” means bare earth supplemented by vegetation height;

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

“controller-pilot data link communications” means a means of communication between controller and pilot, using data link for ATC communications;

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

“cyclic redundancy check” means a mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data;

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

“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;

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

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

“Digital Elevation Model” means the representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum;

“direct transit arrangements” means special arrangements approved by the Authority by which traffic which is pausing briefly in its passage through the Republic of Kenya may remain under their direct control;

“ellipsoid height (Geodetic height)” means the height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question;

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

“feature attribute” means characteristic of a feature (ISO 19101*);

“feature operation” means operation that every instance of a feature type may perform (ISO 19110*);

“feature relationship” means relationship that links instances of one feature type with instances of the same or a different feature type (ISO 19101*);

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

“geodesic distance” means the shortest distance between any two points on a mathematically defined ellipsoidal surface;

“geodetic datum” means a minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system or frame;

“geoid” means the equipotential surface in the gravity field of the earth which coincides with the undisturbed mean sea level 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;

“ICAO” means abbreviation for the International Civil Aviation Organisation.

“Integrated Aeronautical Information Package” means a package in paper, or electronic media which consists of the following elements - Aeronautical information publication; including amendment service; Supplements to the aeronautical information publication; Notice To Air Men and pre-flight information bulletin; Aeronautical information circular and checklists and lists of valid Notice To Air Men;

“integrity (aeronautical data)” 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;

“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 airport” means any airport designated by the Authority as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out;

“international Notice To Air Men office” means an office designated by the Authority for the exchange of Notice To Air Men internationally;

“logon address” means a specified code used for data link logon to an air traffic services unit;

“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*);

“minimum en-route altitude” means the altitude for an en-route segment that provides adequate reception of relevant navigation facilities and ATS communications, complies with the airspace structure and provides the required obstacle clearance;

“minimum obstacle clearance altitude” means the minimum altitude for a defined segment of flight that provides the required obstacle clearance;

“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;

“navigation specification” means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

“required navigation performance specification” means navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP.

“area navigation specification” means a navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV.

“Notice To Air Men” 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 aircraft; or
- (b) extend above a defined surface intended to protect aircraft flight; or
- (c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.

“obstacle/terrain data collection surface” means a defined surface intended for the purpose of collecting obstacle/terrain data;

“orthometric height” means a height of a point related to the geoid, generally presented as a mean sea level elevation;

“performance-based communication” means communication based on performance specifications applied to the provision of air traffic services;

“performance-based navigation” means area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace;

“performance-based surveillance” means a surveillance based on performance specifications applied to the provision of air traffic services;

“portrayal” means a presentation of information to humans (ISO 19117*);

“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;

“post spacing” means an angular or linear distance between two adjacent elevation points;

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

“pre-flight information bulletin” means a presentation of current Notice To Air Men information of operational significance, prepared prior to flight;

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

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

“quality assurance” means part of quality management focused on providing confidence that quality requirements will be fulfilled (ISO 9000*);

“quality control” means part of quality management focused on fulfilling quality requirements (ISO 9000*);

“quality management” means coordinated activities to direct and control an organization with regard to quality (ISO 9000*);

“radio navigation service” means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids;

“required communication performance” means a specification means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication;

“required surveillance performance” means a specification means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance;

“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 Kenya, within which the flight of aircraft is restricted in accordance with certain specified conditions;

“route stage” means a route or portion of a route flown without an intermediate landing;

“station declination” means an alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated;

“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*);

“VOLMET” means meteorological information for aircraft in flight;

“data link-VOLMET” means a provision of current aerodrome routine meteorological reports and aerodrome special meteorological reports, aerodrome forecasts, SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link;

“VOLMET broadcast” means provision, as appropriate, of current aerodrome routine meteorological reports, aerodrome special meteorological reports, aerodrome forecasts and SIGMET by means of continuous and repetitive voice broadcasts;

3. (1) These Regulations shall apply to an aeronautical information services provider. Application.

(2) These Regulations do not apply to aeronautical information service provided by the military.

PART II – GENERAL PROVISIONS

4. (1) A person shall not provide an Aeronautical Information Service, and undertake aeronautical data and information management unless certificated and in accordance with the Civil Aviation (Certification of Air Navigation Service Providers) Regulations. Provision of an Aeronautical Information Service.

(2) The Authority shall certify an organization as the aeronautical information service provider to provide such services in accordance with these regulations.

5. (1) A certified aeronautical information service provider providing aeronautical information services shall develop an operations manual which shall serve to demonstrate how the air navigation service provider will comply with the requirements of these regulations. Operations Manual.

(2) The operations manual required in regulation 5 (1) shall contain the following information–

- (a) services to be provided;
- (b) personnel requirements and their responsibilities including the organization chart that shows the position of each personnel and the name, qualification, experience, duties and responsibilities of personnel who are responsible for

ensuring the compliance of the organization with the requirements in this regulations;

- (c) training and performance assessment of personnel;
- (d) quality management system;
- (e) contingency plans;
- (f) procedures for reporting of Aeronautical Information Service system malfunction;
- (g) maintenance of documents and records;
- (h) the hours of service;
- (i) detailed description of the Aeronautical Information Service systems and procedures used in the provision of aeronautical information services/aeronautical information management; and
- (j) any other information requested by the Authority.

(3) The operations manual may consist of a main manual covering the main areas that need to be addressed, as well as separate supporting documents and manuals (such as the quality manual, the station standing instructions specific to a particular station) that are referenced to in the main manual.

(4) The operations manual shall be issued under the authority of the air navigation service provider and shall be approved by the Authority.

(5) An aeronautical information service provider shall amend the operations manual and associated procedures whenever necessary to ensure accuracy and currency of the information contained therein.

Common reference systems for air navigation

6. An aeronautical information service provider shall ensure that-

Horizontal reference system.

- (a) the horizontal reference system is the world geodetic system — 1984;
- (b) the published aeronautical geographical coordinates indicating latitude and longitude are expressed in terms of the world geodetic system — 1984 geodetic reference datum;
- (c) geographical coordinates which have been transformed into world geodetic system — 1984 coordinates but whose accuracy of original field work does not meet the requirements in the Civil Aviation (Air Traffic Services) regulations and the Civil Aviation (Aerodromes) Regulations is identified by an asterisk;
- (d) the order of publication resolution of geographical coordinates is as specified in the First Schedule and Table S6-1 of the Second Schedule of these Regulations; and

- (e) the order of chart resolution of geographical coordinates is as specified in the Second Schedule in the Civil Aviation (Aeronautical Charts) Regulations table 1.

7. An aeronautical service provider shall ensure that –

Vertical reference system.

- (a) the mean sea level datum is used as the vertical reference system for air navigation and the earth gravitational model – 1996, containing long wave length gravity field data to degree and order 360, is used by air navigation as the global gravity model;
- (b) the regional, national or local geoid models containing high resolution gravity field data are developed and used for geographical positions where the accuracy of earth gravitational model – 1996 does not meet the accuracy requirements for elevation and geoid undulation as specified in the Civil Aviation (Aerodrome Regulations) , on the basis of earth gravitational model – 1996 data;
- (c)) the description of the model used, including the parameters required for height transformation between the model and earth gravitational model – 1996, are provided in the aeronautical information publication when a geoid model other than the earth gravitational model – 1996 model specified in sub regulation 2;
- (d) the elevation referenced to the mean sea level for the specific surveyed ground positions, and geoid undulation referenced to the world geodetic system – 1984ellipsoid for those positions specified in the First schedule are published;
- (e) the order of publication resolution of elevation and geoid undulation are as specified Table S6-2 of the Second Schedule (Aeronautical data publication resolution and integrity classification) of these regulations; and
- (f) the order of chart resolution of elevation and geoid undulation is as specified in the Civil Aviation (Aeronautical Charts) Regulations, Second schedule, Table 2.

8. An aeronautical service provider shall ensure that –

Temporal reference system.

- (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, 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.

9. An aeronautical service provider shall ensure that –

Miscellaneous specifications.

- (a) each element of the integrated aeronautical information package for international distribution shall be in English;

- (b) the names of places are spelt in conformity with local usage, transliterated, when necessary, into the Latin alphabet; and
- (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.

PART III - RESPONSIBILITIES AND FUNCTIONS

10. A certificated Aeronautical Information Service Provider shall-

Role of the
Aeronautical
Information
Service Provider

- (a) provide an aeronautical information service;
- (b) ensure that the provision of aeronautical data and aeronautical information covers the entire territory of Kenya for which it is responsible for the provision of air traffic services;
- (c) note that the Authority shall remain responsible for the aeronautical data and aeronautical information provided;
- (d) ensure that aeronautical data and aeronautical information provided for and on behalf of the Authority shall clearly indicate that they are provided under the authorisation of the Authority;
- (e) ensure that the aeronautical data and aeronautical information provided is complete, timely and of required quality in accordance with these regulation; and
- (f) 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.

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

Aeronautical
Information
Service Provider
responsibilities
and functions.

- (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 or data concerning the entire territory of Kenya as well as those areas over the high seas in which the country is responsible for the provision of air traffic services;

- (b) provide aeronautical data and aeronautical information as an integrated aeronautical information package;
 - (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;
 - (b) aeronautical data and aeronautical information obtained from other sources other than other States, be 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 to sub regulation 10 (1).
12. (1) An aeronautical information service provider shall-
- (a) designate the office to which all elements of the integrated aeronautical information package originated by other States shall be addressed and the office shall be qualified to deal with requests for aeronautical data and aeronautical information originated by other States;
 - (b) define, where more than one international Notice To Air Men office is designated within Kenya, the extent of responsibility and the territory covered by each office;
 - (c) arrange for the issuance and receipt of Notice To Air Men distributed by means of telecommunication;
 - (d) establish direct contact with other providers of aeronautical information services in order to facilitate the international exchange of aeronautical data and aeronautical information;
 - (e) avail one copy of each of the elements of the integrated aeronautical information package upon request by the aeronautical information service of an International Civil Aviation Organisation Contracting State without charge;

Exchange of
aeronautical data
and aeronautical
information.

- (f) ensure that the exchange of more than one copy of the elements of the integrated aeronautical information package and other air navigation documents, including those containing air navigation legislation and regulations, are subject to a bilateral agreement between the aeronautical information service provider and other International Civil Aviation Organisation Contracting States;
- (g) ensure that the procurement of aeronautical data and aeronautical information, including the elements of the integrated aeronautical information package, and other air navigation documents, including those containing air navigation legislation and regulations, by States other than International Civil Aviation Organisation Contracting States and by other entities is subject to separate agreement with the aeronautical information service provider.

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

- (a) the formal arrangements established with data originators or providers identified in sub regulation (1) shall require timely submission of new or amended aeronautical data and aeronautical information;
- (b) the data originator or provider shall ensure that the aeronautical data and aeronautical information provided is accurate, complete and timely; and
- (c) the data or information originator commits an offence if as soon as practicable after becoming aware of the need for the change of the data or information does not provide aeronautical information management with updated aeronautical data and aeronautical information with an effective date.

(2) An aeronautical information service provider shall by a written notice 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.

(3) Any person who owns, controls or operates objects and or structures as referred to in sub regulation 5 fails to comply with the request commits an offence.

14. An aeronautical information service provider shall-

- (a) ensure that any product of an aeronautical information services which has been granted copyright protection in the Republic of Kenya and provided to another State in accordance with regulation 11, is only made available to a third party on condition that –
 - (i) the third party is made aware that the product is copyright protected; and

Obligation of aeronautical data and aeronautical information providers.

Copyright and cost Recovery

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

(b) only recover the overhead cost of collecting and compiling aeronautical data and aeronautical information.

PART IV - AERONAUTICAL INFORMATION MANAGEMENT

15. 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.

Information management requirements

16. (1) An aeronautical information raw data provider shall ensure that material to be issued as part of the integrated aeronautical information package is thoroughly checked before submission to the aeronautical information service, in order to make certain that all necessary information has been included and that the information is correct in detail prior to distribution.

Aeronautical data and aeronautical information validation and verification

(2) An aeronautical information service provider shall establish verification and validation procedures which ensure that the aeronautical data and aeronautical information received meets the quality requirements (accuracy, resolution, integrity and traceability) are met.

17. (1) An aeronautical information service provider shall ensure that –

Aeronautical Data Accuracy

- (a) the order of accuracy for aeronautical data is as specified in the Civil Aviation (Air Traffic Service) Regulations and the Civil Aviation (Aerodrome) Regulations;
- (b) the three types of positional data are identified as below–
 - (i) surveyed points (runway thresholds, navigation aid positions, etc.);
 - (ii) calculated points (mathematical calculations from the known surveyed points of points in space/fixes); and
 - (iii) declared points (e.g. flight information region boundary points).

18. An aeronautical information service provider shall ensure that the order of publication resolution of aeronautical data is as specified in the Second Schedule (Aeronautical data publication resolution and integrity classification).

Aeronautical Data Resolution.

19. An aeronautical information service provider shall-

Aeronautical Data Integrity.

- (a) ensure that the integrity classification for aeronautical data shall be as specified in Tables S6-1 to A6-5 of the Second Schedule (Aeronautical data publication resolution and integrity classification);
- (b) maintain the integrity of aeronautical data throughout the data process from survey or origin to distribution to the next intended user; and

- (c) ensure that the validation and verification procedures based on the applicable integrity classification –
 - (i) for routine data: avoid corruption throughout the processing of the data;
 - (ii) for essential data: assure corruption does not occur at any stage of the entire process and may include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level; and
 - (iii) for critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.

20. (1) An aeronautical information service provider shall collect metadata for aeronautical data processes and exchange points; Metadata.

(2) The metadata collected shall be applied throughout the aeronautical information data chain, from survey or origin to distribution to the next intended user;

- (3) The metadata to be collected shall include-
 - (a) the name of the 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.

21. (1) An aeronautical information service provider shall – Data protection.

- (a) protect aeronautical data and data sets in accordance with data error detection, security and authentication techniques; and
- (b) protect electronic aeronautical data sets protected by the inclusion in the data sets of a 32-bit cyclic redundancy check implemented by the application dealing with the data sets.

(2) The cyclic redundancy check shall protect the integrity classification of data sets as specified in regulation 17.

22. An aeronautical information service provider shall – Use of automation.

- (a) introduce automation to ensure timeliness, quality, efficiency and cost effectiveness of aeronautical information services;
- (b) implement processes to ensure data and information consistency between formats where aeronautical data and aeronautical information are provided in multiple formats;
- (c) ensure that 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;
- (d) ensure that the aeronautical information model used encompasses the aeronautical data and aeronautical information to be exchanged.
23. An aeronautical information service provider shall-
- (a) have an automated system for the processing of aeronautical data and aeronautical information as part of providing its AIS;
- (b) update the data in the system as necessary; and
- (c) ensure that the system-
- (i) allows the digital exchange and supply of aeronautical data and aeronautical information; and
- (ii) can provide the data and information in a format suitable for its intended use.
24. (1) An aeronautical information management provider shall implement and maintain a quality management system that-
- (a) 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 Management;
- (b) includes quality management procedures that address the quality management requirements mentioned in the aeronautical data processing standards;
- (c) encompasses all functions of an aeronautical information service as outlined in these regulations;
- (d) make the execution of such quality management system demonstrable for each function stage, when required;
- (e) implement the quality management system in accordance with requirements prescribed by the Authority; and
- (f) ensure that the quality management system established is certified by an ISO accredited organization.
- (2) The quality management system shall be 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.
- (3) The aeronautical information management providers shall use letters of agreement concerning data quality between originator and distributor and between distributor and next intended user to manage the aeronautical information data chain.
- (4) An aeronautical information management provider shall within the context of the established quality management system ensure that -

Update of the automated aeronautical information service systems

Quality Management System.

- (a) the competencies and the associated knowledge, skills and abilities required for each function are identified;
 - (b) the personnel assigned to perform those functions are adequately trained;
 - (c) processes are in place to ensure that personnel possess the competencies required to perform specific assigned functions;
 - (d) appropriate records are maintained so that the qualifications of personnel can be confirmed;
 - (e) initial and periodic assessments are established that require personnel to demonstrate the required competencies;
 - (f) procedures are established to maintain currency of the competence of the personnel.
 - (g) periodic assessments of personnel are conducted and used as a means to detect and correct shortfalls;
 - (h) provides users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements for accuracy, resolution and integrity as specified in regulations 13 and 14;
 - (i) it meets the data traceability requirements through the provision of appropriate metadata as specified in these regulations; and
 - (j) provides assurance of the applicability period of intended use of aeronautical data and the agreed distribution dates to be met.
- (5) The quality management system implemented by an aeronautical information service provider shall ensure that—
- (a) procedures exist for—
 - (i) traceability to its origin of data anomalies or errors, detected and corrected;
 - (ii) assurance and confidence that the distributed aeronautical information and data satisfy the requirements for data quality, traceability and timeliness;
 - (iii) protection of electronic aeronautical data stored or in transit by the cyclic redundancy check (CRC) to assure integrity of data;
 - (iv) validation and verification to ensure quality requirements and traceability of aeronautical data;
 - (v) the audit and remedial action for the compliance of the quality management system;
 - (b) publication resolution of aeronautical data and confidence level and integrity are in accordance with guidelines prescribed by the Authority;

- (c) material issued as part of the Integrated Aeronautical Information Package is checked and coordinated with the responsible services before it is published; and
- (d) the necessary policies, processes and procedures, including those for the use of metadata, are in place to—
 - (i) ensure and verify that aeronautical data are traceable throughout the aeronautical information data chain; and
 - (ii) allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.
- (6) The established quality management system shall provide—
 - (a) users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements for accuracy, resolution and integrity as specified in the Second Schedule these regulations;
 - (b) assurance that the data traceability requirements are met through the provision of appropriate metadata as specified in these regulations;
 - (c) assurance of the applicability period of intended use of aeronautical information or data; and
 - (d) assurance that the agreed distribution dates will be met.
- (7) All necessary measures shall be taken to monitor compliance with the quality management system in place.
- (8) Demonstration of compliance of the quality management system applied shall be by audit and where nonconformity is identified, action shall be determined and initiated to correct its cause and such action taken without undue delay.
- (9) The aeronautical information service provider shall ensure that all audit observations and remedial actions are evidenced and properly documented.
- (10) An aeronautical information service provider shall ensure that each quality management system includes the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain.
- (11) An aeronautical information service provider shall—
 - (a) take all necessary measures to monitor compliance with the quality management system in place;
 - (b) demonstrate compliance of the quality management system applied by audit;
 - (c) initiate action to determine and correct causes of nonconformities without undue delay; and

- (d) ensure that the audit observations and remedial actions are evidenced and properly documented.

25. An aeronautical information service provider shall ensure that—

Human Factors considerations

- (a) the organisation, design, contents, processing and distribution of aeronautical data and aeronautical information takes into consideration human factors principles;
- (b) due consideration is given to the integrity of information where human interaction is required and mitigating steps are taken where risks are identified.

PART V - AERONAUTICAL INFORMATION PUBLICATION

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

Contents of the aeronautical information publication

- (a) each element of the Integrated Aeronautical Information Package for international distribution includes an English text for those parts expressed in plain language;
- (b) place names are spelt in conformity with local usage, transliterated, when necessary, into the Latin alphabet;
- (c) International Civil Aviation Organisation abbreviations are used in aeronautical information service whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information.

(2) The Aeronautical Information management provider shall—

- (a) publish an Aeronautical Information Publication containing current information, data and aeronautical charts relating to the airspace in which Kenya has responsibility for ATS;
- (b) ensure that the contents of the aeronautical information publication are in accordance to the prescription by the Authority;
- (c) ensure that the published aeronautical information publication includes in Part 1 – General—
 - (i) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the aeronautical information publication;
 - (ii) the general condition under which the services or facilities are available for international use;
 - (iii) a list of significant differences between the national regulations and the related International Civil Aviation Organisation provisions; and
 - (iv) the choice made by Kenya in each significant case where an alternative course of action has been provided for by the International Civil Aviation Organisation;

- (d) ensure that the aeronautical charts listed alphabetically below, when available for designated international aerodromes/heliports, form part of the aeronautical information publication, or be distributed separately to recipients of the aeronautical information publication—
- (i) Aerodrome/Heliport Chart—International Civil Aviation Organisation;
 - (ii) Aerodrome Ground Movement Chart— International Civil Aviation Organisation;
 - (iii) Aerodrome Obstacle Chart— International Civil Aviation Organisation Type A;
 - (iv) Aerodrome Terrain and Obstacle Chart— International Civil Aviation Organisation (Electronic);
 - (v) Aircraft Parking/Docking Chart —International Civil Aviation Organisation;
 - (vi) Area Chart — International Civil Aviation Organisation;
 - (vii) ATC Surveillance Minimum Altitude Chart — International Civil Aviation Organisation;
 - (viii) Instrument Approach Chart — International Civil Aviation Organisation;
 - (ix) Precision Approach Terrain Chart —International Civil Aviation Organisation;
 - (x) Standard Arrival Chart— Instrument (STAR) — International Civil Aviation Organisation;
 - (xi) Standard Departure Chart— Instrument (SID) — International Civil Aviation Organisation; and
 - (xii) Visual Approach Chart — International Civil Aviation Organisation;
- (e) ensure that charts, maps or diagrams are used, when appropriate, to complement or as a substitute for the tabulations or text of aeronautical information publications.

27. (1) The aeronautical information services provider shall ensure that an aeronautical information publication is—

- (a) self-contained and includes a table of contents;
- (b) not duplicate information within itself or from other sources;
- (c) published in loose-leaf form unless the complete publication is reissued at frequent intervals; and
- (d) dated on each page consisting of the day, month by name and year which shall be the publication date or the effective date of the information.

General
aeronautical
information
publication
specifications.

- (2) An aeronautical information service provider shall ensure that
- (a) a checklist giving the current date of each page in an aeronautical information publication series is reissued frequently and a page number or chart title and date of the checklist appears on the checklist itself;
 - (b) an aeronautical information publication issued as a bound volume and each page of an aeronautical information publication issued in loose-leaf form is so annotated as to indicate clearly the following –
 - (i) the identity of the aeronautical information publication;
 - (ii) the territory covered and subdivisions when necessary;
 - (iii) the identification of the issuing State and producing organisation (authority);
 - (iv) page numbers and chart titles; and
 - (v) the degree of reliability if the information is doubtful;
 - (c) the sheet size of an aeronautical information publication is no larger than 210 × 297 millimetres, except that larger sheets may be used provided they are folded to the same size;
 - (d) all changes to an aeronautical information publication, or new information on a republished page, is identified by a distinctive symbol or annotation;
 - (e) the operationally significant changes to the aeronautical information publication are published in accordance with Aeronautical Information Regulation And Control procedures and shall be clearly identified by the acronym — Aeronautical Information Regulation And Control;
 - (f) the aeronautical information publication –
 - (i) is amended or reissued at such regular intervals specified in the aeronautical information publication, Part 1 — General as may be necessary to keep it up to date;
 - (ii) hand amendments or annotations are kept to the minimum; and
 - (iii) normal method of amendment is by means of replacement sheets.
28. (1) An aeronautical information service provider shall ensure that—
- (a) permanent changes to the aeronautical information publication are published as aeronautical information publication amendments;
 - (b) each aeronautical information publication amendment is allocated a serial number, which shall be consecutive;

Specifications for
Aeronautical
Information
Publication
Amendments.

- (c) each aeronautical information publication amendment page, including the cover sheet, displays a publication date;
- (d) each Aeronautical Information Regulation and Control aeronautical information publication Amendment page, including the cover sheet, displays an effective date and where an effective time other than 0000 coordinated universal time is used, the effective time shall also be displayed on the cover sheet;
- (e) a brief indication of the subjects affected by the amendment is given on the aeronautical information publication Amendment cover sheet.

(2) When an aeronautical information publication Amendment is issued, it includes references to the serial number of those elements, if any, of the Integrated Aeronautical Information Package which have been incorporated into the amendment.

(3) When an aeronautical information publication amendment will not be published at the established interval or publication date, a NIL notification be originated and distributed by the monthly plain-language list of valid Notice To Air Men required by this regulation.

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

- (a) publish temporary changes of three months or more and information of short duration which contains extensive text or graphics as aeronautical information publication supplements;
- (b) allocate each aeronautical information publications supplements a serial number which are consecutive and based on the calendar year;
- (c) keep aeronautical information publications supplement pages in the aeronautical information publication if all or some of their contents remain valid;
- (d) publish a new aeronautical information publications supplement as a replacement when an error occurs in the aeronautical information publication supplement or when the period of validity of the aeronautical information publication supplement is changed;
- (e) include a reference to the serial number of a Notice To Air Men in an aeronautical information publication supplement when an aeronautical information publication supplement is sent in replacement of a Notice To Air Men; and
- (f) issue a checklist of valid aeronautical information publications supplements at intervals of not more than one month and the information shall be issued through the medium of the monthly plain-language list of valid Notice To Air Men required by regulation 27.

(2) An aeronautical information services provider shall ensure that the aeronautical information publication supplement pages are published in yellow in order to be conspicuous and are kept as the first item in the aeronautical information publication.

Specifications for
Aeronautical
Information
Publication
Supplements.

30. An aeronautical information service provider shall make available aeronautical information publication, aeronautical information publication Amendments and aeronautical information publication Supplements by the most expeditious means.

Distribution of aeronautical information publication, aeronautical information publication Amendments and aeronautical information publication Supplements.

31. (1) An aeronautical information service provider shall publish the aeronautical information publication, aeronautical information publication Amendment, and aeronautical information publication Supplement and AIC in a format that allows for displaying on a computer screen and printing on paper.

Electronic aeronautical information publication (aeronautical information publication).

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

- (a) the information content of the aeronautical information publication and the structure of chapters, sections and subsections follow the content and structure of the paper aeronautical information publication when provided;
- (b) the aeronautical information publication –
 - (i) includes files that allow for printing a paper aeronautical information publication; and
 - (ii) is available on a physical distribution medium or online on the internet, when provided.

PART VI – NOTICE TO AIR MEN

32. (1) An aeronautical information service provider shall originate and issue a Notice To Air Men promptly whenever –

Origination of Notice To Air Men.

- (a) the information to be distributed is of a temporary nature and of short duration;
- (b) when operationally significant permanent changes; or temporary changes of long duration are made at short notice except for extensive text or graphics.

(2) The Notice To Air Men originated and issued under sub regulation (1) shall concern the following information—

- (a) establishment, closure or significant changes in operation of aerodrome(s), heliport(s) or runways;
- (b) establishment, withdrawal and significant changes in operation of aeronautical services;
- (c) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services;

- (d) the significant changes referred to in sub regulation (c) shall include-
 - (i) interruption or return to operation;
 - (ii) change of frequencies;
 - (iii) change in notified hours of service;
 - (iv) change of identification;
 - (v) change of orientation (directional aids);
 - (vi) change of location;
 - (vii) power increase or decrease amounting to 50 per cent or more;
 - (viii) change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services;
- (e) establishment, withdrawal or significant changes made to visual aids;
- (f) interruption of or return to operation of major components of aerodrome lighting systems;
- (g) establishment, withdrawal or significant changes made to procedures for air navigation services;
- (h) occurrence or correction of major defects or impediments in the manoeuvring area;
- (i) changes to and limitations on availability of fuel, oil and oxygen;
- (j) major changes to search and rescue facilities and services available;
- (k) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation;
- (l) changes in regulations requiring immediate action;
- (m) presence of hazards which affect air navigation;
- (n) erecting or removal of, or changes to, obstacles to air navigation in the take-off or climb, missed approach, approach areas and runway strip;
- (o) establishment or discontinuance as applicable, or changes in the status of prohibited, restricted or danger areas;
- (p) establishment or discontinuance of areas, routes or portions of the areas or routes where the possibility of interception exists and where the maintenance of guard on the Very High Frequency emergency frequency 121.5 Mega Hertz is required;
- (q) allocation, cancellation or change of location indicators;

- (r) significant changes in the level of protection involving change of category normally available at an aerodrome or heliport for rescue and firefighting purposes;
 - (s) presence or removal of, or significant changes in, hazardous conditions due radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
 - (t) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;
 - (u) forecasts of solar cosmic radiation, where provided;
 - (v) 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 may be affected;
 - (w) 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 of routes which may be affected and the direction of movement;
 - (x) establishment of operations of humanitarian relief missions, procedures or limitations which affect air navigation and implementation of short-term contingency measures in cases of disruption, or partial disruption, of air traffic services and related services; and
 - (y) any other circumstance which may affect the operation of aircraft.
- (3) The following information shall not be notified by Notice To Air Men-
- (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 Visual Flight Rules when controlled, at promulgated sites or within danger or prohibited areas; and
 - (i) other information of a similar temporary nature.
- (4) The aeronautical information service provider shall ensure that –
- (a) at least seven days' advance notice is given of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations;
 - (b) notice of any subsequent cancellation of the activities or any reduction of the hours of activity or the dimensions of the airspace is given at least within twenty four hours of the cancellation;
 - (c) Notice To Air Men notifying unserviceability of aids to air navigation, facilities or communication services gives an estimate of the period of unserviceability or the time at which restoration of service is expected;
 - (d) when an aeronautical information publication Amendment or an aeronautical information publication Supplement is published in accordance with Aeronautical Information Regulation And Control procedures, a Notice To Air Men is originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement; and
 - (e) the Notice To Air Men in paragraph (d) comes into force on the same effective date and time as the amendment or supplement and remains valid in the pre-flight information bulletin for a period of fourteen days.

33. (1) An aeronautical information service provider shall ensure that -
- General Notice To Air Men specifications.
- (a) Notice To Air Men contain the information in the order specified in the Notice To Air Men Format in the Third Schedule;
 - (b) the text of Notice To Air Men is composed of the significations or uniform abbreviated phraseology assigned to the International Civil Aviation Organisation Notice To Air Men Code complemented by International Civil Aviation Organisation abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language;
 - (c) the English text is included for those parts of Notice To Air Men expressed in plain language when Notice To Air Men is selected for international distribution;
 - (d) information concerning an operationally significant change in volcanic activity, a volcanic eruption or volcanic ash cloud shall, when reported by means of an ASHTAM, contain the information in the order specified in the ASHTAM Format in Fourth Schedule.
- (2) An aeronautical information service provider shall –
- (a) allocate to each Notice To Air Men a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year;
 - (b) ensure that the four-digit number is consecutive and based on the calendar year;
 - (c) issue a Notice To Air Men with a new number to replace an erroneous Notice To Air Men or cancel the erroneous Notice To Air Men and issue a new Notice To Air Men when errors occur in a Notice To Air Men;
 - (d) when a Notice To Air Men is issued which cancels or replaces a previous Notice To Air Men, indicate the series and number of the previous Notice To Air Men and the series, location indicator and subject of both Notice To Air Men shall be the same;
 - (e) ensure that only one Notice To Air Men is cancelled or replaced by a Notice To Air Men.
- (3) An aeronautical information service provider shall ensure that
-
- (a) a Notice To Air Men -
 - (i) deals with only one subject and one condition of the subject;
 - (ii) is brief and compiled so that its meaning is clear without the need to refer to another document;

- (iii) is transmitted as a single telecommunication message; and
 - (iv) containing permanent or temporary information of long duration carries appropriate aeronautical information publication or aeronautical information publication Supplement references;
 - (b) location indicators included in the text of a Notice To Air Men are those contained in Location Indicators (International Civil Aviation Organisation Doc. 7910) and in no case shall a curtailed form of such indicators be used;
 - (c) where no International Civil Aviation Organisation location indicator is assigned to the location, the place name is entered in plain language spelt in accordance with these regulations;
 - (d) a checklist of valid Notice To Air Men is issued as a Notice To Air Men over the Aeronautical Fixed Service at intervals of not more than one month using the Notice To Air Men Format specified in the Fourth schedule and one Notice To Air Men is issued for each series;
 - (e) a checklist of Notice To Air Men –
 - (i) refers to the latest aeronautical information publication Amendments, aeronautical information publication Supplements and at least the internationally distributed AIC; and
 - (ii) has the same distribution as the actual message series to which they refer and is clearly identified as a checklist;
 - (f) a monthly plain-language list of valid Notice To Air Men, including indications of the latest aeronautical information publication Amendments, AIC issued and a checklist of aeronautical information publication Supplements is prepared with minimum delay and forwarded by the most expeditious means to recipients of the Integrated Aeronautical Information Package.
34. (1) An aeronautical information service provider shall -
- (a) distribute a Notice To Air Men on the basis of a request;
 - (b) select the Notice To Air Men to be given international distribution.
- (2) An aeronautical information service provider shall ensure that
- (a) Notice To Air Men are prepared in accordance with the relevant provisions of the International Civil Aviation Organisation communication procedures;
 - (b) the Aeronautical Fixed Service is employed for Notice To Air Men distribution;

Distribution of
Notice To Air
Men.

- (c) A six-digit date-time group indicating the date and time of Notice To Air Men origination, and the identification of the originator is used, preceding the text when a Notice To Air Men exchanged as specified in sub-regulation (e) and (f) is sent by means other than the AFS;
- (d) selective distribution lists are used;
- (e) international exchange of Notice To Air Men takes place only, as mutually agreed between the international Notice To Air Men offices concerned;
- (f) the international exchange of ASHTAM, and Notice To Air Men where States continue to use Notice To Air Men for distribution of information on volcanic activity, includes volcanic ash advisory centres and the centres designated by regional air navigation agreement for the operation of Aeronautical Fixed Service satellite distribution systems and international satellite communications system, and shall take account of the requirements of long-range operations;
- (g) the exchanges of Notice To Air Men between international Notice To Air Men offices is limited to the requirements of the receiving States concerned by means of separate series providing for at least international and domestic flights;
- (h) a predetermined distribution system for Notice To Air Men transmitted on the Aeronautical Fixed Service in accordance with fourth schedule is used whenever possible, subject to the requirements of sub regulation (f).

PART VII - AERONAUTICAL INFORMATION REGULATION AND CONTROL

35. An aeronautical information service provider shall ensure that—

- (a) information concerning the circumstances listed in Part 1 of Fifth Schedule – Information to be notified by Aeronautical Information Regulation And Control, shall be distributed under the regulated Aeronautical Information Regulation And Control system;
- (b) the information notified by Aeronautical Information Regulation And Control is not changed for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and will not persist for the full period;
- (c) the Aeronautical Information Regulation And Control system is used to provide information relating to the establishment and withdrawal of, and premeditated significant changes in, the circumstances listed in Part 2 of Fifth Schedule - Information to be notified by Aeronautical Information Regulation And Control;
- (d) when information has not been submitted by the Aeronautical Information Regulation And Control date; a nil

General specifications of Aeronautical Information Regulation And Control.

notification is originated and distributed by Notice To Air Men or other suitable means, not later than one cycle before the Aeronautical Information Regulation And Control effective date concerned;

- (e) the implementation dates other than Aeronautical Information Regulation And Control effective dates are not used for pre-planned operationally significant changes requiring cartographic work or for updating of navigation databases;
- (f) the date in the Aeronautical Information Regulation And Control cycle which occurs between 21 December and 17 January inclusive is not used as an effective date for the introduction of significant changes under the Aeronautical Information Regulation And Control system.

36. An aeronautical information service provider shall ensure that information provided under the Aeronautical Information Regulation And Control system in paper copy form is distributed at least 42 days in advance of the effective date with the objective of reaching recipients at least 28 days in advance of the effective date.

Provision of information in paper copy form

37. The aeronautical information service provider shall ensure that—

- (a) when updating the contents of the established aeronautical database concerning the circumstances listed in Part 1 of the Sixth Schedule, the effective dates of data coincide with the established Aeronautical Information Regulation And Control effective dates; and
- (b) the information provided as electronic media, concerning the circumstances listed in Part 1 of Sixth Schedule, is distributed or made available so as to reach the recipients at least 28 days in advance of the Aeronautical Information Regulation And Control effective date.

Provision of information as electronic media

PART VIII- AERONAUTICAL INFORMATION CIRCULARS (AIC)

38. (1) An aeronautical information service provider shall originate an AIC—

Origination of AIC.

- (a) whenever it is necessary to promulgate aeronautical information which does not qualify for inclusion in the aeronautical information publication or origination of a Notice To Air Men;
- (b) when it is desirable to promulgate—
 - (i) a long-term forecast of any major change in legislation, regulations, procedures or facilities;
 - (ii) information of a purely explanatory or advisory nature liable to affect flight safety; or
 - (iii) information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters.

(2) The information referred to in sub-regulation (1)(b) shall include-

- (a) forecasts of important changes in the air navigation procedures, services and facilities provided;
- (b) forecasts of implementation of new navigation systems;
- (c) significant information arising from aircraft accident or incident investigation which has a bearing on flight safety;
- (d) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference;
- (e) advice on medical matters of special interest to pilots;
- (f) warnings to pilots concerning the avoidance of physical hazards;
- (g) effect of certain weather phenomena on aircraft operations;
- (h) information on new hazards affecting aircraft handling techniques;
- (i) regulations relating to the carriage of restricted articles by air;
- (j) reference to the requirements of, and publication of changes in, national legislation;
- (k) aircrew licensing arrangements;
- (l) training of aviation personnel;
- (m) application of, or exemption from, requirements in national legislation;
- (n) advice on the use and maintenance of specific types of equipment;
- (o) actual or planned availability of new or revised editions of aeronautical charts;
- (p) carriage of communication equipment;
- (q) explanatory information relating to noise abatement;
- (r) selected airworthiness directives;
- (s) changes in Notice To Air Men series or distribution, new editions of aeronautical information publication or major changes in their contents, coverage or format; or
- (t) other information of a similar nature.

(2) The information referred to in sub-regulation (1)(b) shall include-

- (a) forecasts of important changes in the air navigation procedures, services and facilities provided;

- (b) forecasts of implementation of new navigation systems;
- (c) significant information arising from aircraft accident or incident investigation which has a bearing on flight safety;
- (d) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference;
- (e) advice on medical matters of special interest to pilots;
- (f) warnings to pilots concerning the avoidance of physical hazards;
- (g) effect of certain weather phenomena on aircraft operations;
- (h) information on new hazards affecting aircraft handling techniques;
- (i) regulations relating to the carriage of restricted articles by air;
- (j) reference to the requirements of, and publication of changes in, national legislation;
- (k) aircrew licensing arrangements;
- (l) training of aviation personnel;
- (m) application of, or exemption from, requirements in national legislation;
- (n) advice on the use and maintenance of specific types of equipment;
- (o) actual or planned availability of new or revised editions of aeronautical charts;
- (p) carriage of communication equipment;
- (q) explanatory information relating to noise abatement;
- (r) selected airworthiness directives;
- (s) changes in Notice To Air Men series or distribution, new editions of aeronautical information publication or major changes in their contents, coverage or format; or
- (t) other information of a similar nature.

39. The aeronautical information service provider shall –

- (a) select the AIC to be given international distribution;
- (b) allocate a serial number to an AIC, which is consecutive and based on the calendar year;
- (c) separately identify each series by a letter when the AICs are distributed in more than one series;
- (d) use colour coding to differentiate and identify AIC topics according to subjects where the numbers of AIC in force are sufficient to make identification in this form necessary; and

General AIC
specifications

- (e) issue a checklist of AIC currently in force at least once a year, with distribution as for the aeronautical information circular.

40. An aeronautical information service provider shall give AIC selected for international distribution the same distribution as for the aeronautical information publication.

Distribution of AIC.

PART IX - PRE-FLIGHT AND POST-FLIGHT INFORMATION

- 41. (1) An aeronautical information service provider shall –
 - (a) make available aeronautical information essential for the safety, regularity and efficiency of air navigation and relative to the route stages originating at the aerodrome or heliport to flight operations personnel, including flight crews and services responsible for pre-flight information at any aerodrome or heliport used for international air operations;
 - (b) ensure that aeronautical information provided for pre-flight planning purposes at the aerodromes/heliports referred to in sub regulation (1) (a) includes relevant–
 - (i) elements of the Integrated Aeronautical Information Package;
 - (ii) maps and charts.
 - (c) provide additional current information relating to the aerodrome of departure concerning the following –
 - (i) construction or maintenance work on or immediately adjacent to the manoeuvring area;
 - (ii) rough portions of any part of the manoeuvring area, whether marked or not;
 - (iii) presence of water on runways and taxiways, including their effect on surface friction;
 - (iv) parked aircraft or other objects on or immediately adjacent to taxiways;
 - (v) presence of other temporary hazards;
 - (vi) presence of birds constituting a potential hazard to aircraft operations;
 - (vii) failure or irregular operation of part or all of the aerodrome lighting system including approach, threshold, runway, taxiway, obstruction and manoeuvring area unserviceability lights and aerodrome power supply;
 - (viii) failure, irregular operation and changes in the operational status of Secondary Surveillance Radar, ADS-B, ADS-C, Controller Pilot Data Link Communications, Data link-automatic terminal information service D-VOLMET, radio navigation

Pre-flight information

services, VHF aero mobile channels, RVR observing system, and secondary power supply; and

(ix) presence and operation of humanitarian relief missions;

(d) ensure that a recapitulation of valid Notice To Air Men of operational significance and other information of urgent character is made available to flight crews in the form of plain-language pre-flight information bulletins (PIB).

42. (1) Where an automated pre-flight information system exists the aeronautical information service provider shall –

Automated pre-flight information systems

(a) use automated pre-flight information systems to make aeronautical data and aeronautical information available to operations personnel including flight crew members for self-briefing, flight planning and flight information service purposes and the aeronautical data and aeronautical information made available shall comply with the provisions of sub regulation (1)(b) and (c) and (d);

(b) provide access of self-briefing facilities of an automated pre-flight information system to operations personnel, including flight crew members and other aeronautical personnel concerned, for consultation as necessary with the aeronautical information service by telephone or other suitable telecommunications means; and ensure that the human or machine interface of self-briefing facilities ensures easy access in a guided manner to all relevant information or data.

(2) An aeronautical information service provider shall ensure that automated pre-flight information systems for the supply of aeronautical data and aeronautical information for self-briefing, flight planning and flight information service–

(a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical data stored;

(b) permit access to the system by operations personnel including flight crew members, aeronautical personnel concerned and other aeronautical users through suitable telecommunications means;

(c) ensure provision, in paper copy form, of the aeronautical data and aeronautical information accessed, as required by operations personnel;

(d) use access and interrogation procedures based on abbreviated plain language and International Civil Aviation Organisation location indicators, as appropriate, or based on a menu-driven user interface or other appropriate mechanism as agreed between the aeronautical information service provider and operator concerned; and

(e) provide for rapid response to a user request for information.

(3) Where automated pre-flight information systems are used to provide the harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned with aeronautical data, aeronautical information and meteorological information, the Authority remains responsible for the quality and timeliness of the aeronautical data and aeronautical information provided by means of such a system.

43. An aeronautical information service provider shall make arrangements to receive at aerodromes or heliports information in accordance with the prescribed format concerning-

Post-flight information.

- (a) the state and operation of air navigation facilities or services noted by aircrew and ensure that such information is made available for distribution as the circumstances necessitate; and
- (b) the presence of birds observed by aircrew and ensure that such information is made available for distribution as the circumstances necessitate.

PART X - TELECOMMUNICATION REQUIREMENTS

44. (1) An aeronautical information service provider shall ensure that-

Telecommunication requirements.

- (a) the International Notice To Air Men office is connected to the aeronautical fixed service;
- (b) the connections to the aeronautical fixed service provide for printed communications; and
- (c) the international Notice To Air Men office is connected, through the aeronautical fixed service, to the following points-
 - (i) area control centres and flight information centres; and
 - (ii) aerodromes or heliports at which an information service is established in accordance with the requirements of pre-flight and post flight information.

(2) The aeronautical information service provider shall make use of public internet for exchange of non-time critical types of aeronautical information subject to availability, satisfactory operation and bilateral or multilateral or regional air navigation agreements.

PART XI - ELECTRONIC TERRAIN AND OBSTACLE DATA

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

- (a) Area 1: the entire territory of the Republic of Kenya;
- (b) Area 2: within the vicinity of an aerodrome, subdivided as follows-

- Coverage areas
and requirements
for data provision
- (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 10 km and a splay of 15 per cent 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 45 km from the aerodrome reference point, or to an existing Terminal Area boundary, whichever is nearest;
- (c) Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area;
- (d) Area 4—
- (i) the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III; or
 - (ii) 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 is extended to a distance not exceeding 2 000 m (6 500ft) from the runway threshold.
- (2) An aeronautical information service provider shall provide—
- (a) electronic terrain data and obstacle data for obstacles higher than 100 m above ground for Area 1;
 - (b) electronic obstacle data for all obstacles within Area 2 that are assessed as being a hazard to air navigation at aerodromes regularly used by international civil aviation;
 - (c) electronic terrain data at aerodromes regularly used by international civil aviation, 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) electronic obstacle data at aerodromes regularly used by international civil aviation, for—
 - (i) area 2a , for those obstacles that penetrate the relevant obstacle data collection surface specified in Schedule 8 - terrain and obstacle data requirements;

- (ii) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area;
 - (iii) penetrations of the aerodrome obstacle limitation surfaces;
 - (iv) electronic terrain and obstacle data for Areas 2b, 2c and 2d for obstacles and terrain that penetrate the relevant terrain and obstacle data collection surface specified in the Seventh Schedule (terrain and obstacle data requirements), except that data need not be collected for obstacles less than a height of 3 m above ground in Area 2b and less than a height of 15 m above ground in Area 2c;
 - (v) electronic terrain and obstacle data for Area 4 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Seventh Schedule (terrain and obstacle data requirements) for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators.
- (2) An aeronautical information service provider shall provide-
- (e) electronic terrain data and obstacle data for obstacles higher than 100 m above ground for Area 1.
 - (f) electronic obstacle data for all obstacles within Area 2 that are assessed as being a hazard to air navigation at aerodromes regularly used by international civil aviation;
 - (g) electronic terrain data at aerodromes regularly used by international civil aviation, 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.
 - (h) electronic obstacle data at aerodromes regularly used by international civil aviation, for-
 - (i) area 2a , for those obstacles that penetrate the relevant obstacle data collection surface specified in Schedule 8 - terrain and obstacle data requirements;
 - (ii) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area;
 - (iii) penetrations of the aerodrome obstacle limitation surfaces;
 - (iv) electronic terrain and obstacle data for Areas 2b, 2c and 2d for obstacles and terrain that penetrate the relevant terrain

and obstacle data collection surface specified in the Seventh Schedule (terrain and obstacle data requirements), except that data need not be collected for obstacles less than a height of 3 m above ground in Area 2b and less than a height of 15 m above ground in Area 2c;

- (v) electronic terrain and obstacle data for Area 4 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Seventh Schedule (terrain and obstacle data requirements) for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators.

(3) An aeronautical information service provider shall make arrangements –

- (a) for the coordination of providing Area 2 electronic terrain and obstacle data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same obstacle or terrain are correct; and
- (b) for those aerodromes located near territorial boundaries, with neighbouring states concerned to share Area 2 electronic terrain and obstacle data.

46. An aeronautical information service provider shall ensure that-

- (a) a terrain data set contains digital sets of data representing terrain surface in the form of continuous elevation values at all intersections of a defined grid, referenced to common datum;
- (b) a terrain grid is angular or linear and of regular or irregular shape;
- (c) sets of electronic terrain data include spatial, thematic and temporal aspects for the surface of the Earth containing naturally occurring features excluding obstacles;
- (d) in terrain data sets, only one feature type of terrain is provided;
- (e) feature attributes describing terrain are as specified in Table A8-3 in schedule 8 - terrain and obstacle data requirements;
- (f) the terrain feature attributes listed in Table S7-3 in the Seventh schedule (terrain and obstacle data requirements) represent the minimum set of terrain attributes, and those annotated as mandatory are recorded in the terrain data set; and
- (g) electronic terrain data for each area conforms to the applicable numerical requirements specified in Schedule 8-terrain and obstacle data requirements, Table S7-1 of the Seventh Schedule.

Terrain data set —
content, numerical
specification and
structure

- | | | |
|-------|---|--|
| that- | <p>47. An aeronautical information service provider shall ensure</p> <ul style="list-style-type: none"> (a) obstacle data comprises the digital representation of the vertical and horizontal extent of the obstacle; (b) obstacles are not included in terrain data sets; (c) obstacle data elements are represented in the data sets by points, lines or polygons; (d) defined obstacle feature types are provided and each of them described according to the list of mandatory attributes specified in the eighth Schedule Table S7-4 in the Seventh schedule in an obstacle data set; and (e) electronic obstacle data for each area conforms to the applicable numerical requirements in the Seventh Schedule (terrain and obstacle data requirements), Table S7-2 of the Seventh schedule. | <p>Obstacle data set
— content,
numerical
specification and
structure.</p> |
| that- | <p>48. An aeronautical information service provider shall ensure</p> <ul style="list-style-type: none"> (a) the ISO 19100 series of standards for geographic information are used as a general data modelling framework to allow and support the interchange and use of sets of electronic terrain and obstacle data among different data providers and data users; (b) a comprehensive statement of available electronic terrain and obstacle data sets is provided in form of terrain data product specifications and obstacle data product specifications; (c) a terrain data product specification includes an overview, a specification scope, data product identification, data content and structure, reference system, data quality, data capture, data maintenance, data portrayal, data product delivery, additional information, and metadata; (d) the overview of terrain data product specifications or obstacle data product specifications provides an informal description of the product and contains general information about the data product; (e) a specification scope is identified for each subset of data; (f) identification information concerning both terrain and obstacle data products includes the title of the product, a brief narrative summary of the content, purpose, and spatial resolution, the geographic area covered by the data product and supplemental information; (g) content information of feature-based terrain data sets or of feature-based obstacle data sets are each described in terms of an application schema and a feature catalogue; (h) application schema provides a formal description of the data structure and content of data sets while the feature catalogue provides the semantics of all feature types together with their | <p>Terrain and
obstacle data
product
specifications.</p> |

attributes and attribute value domains, association types between feature types and feature operations, inheritance relations and constraints;

- (i) terrain and obstacle data product specifications identify clearly the coverage or include an imagery and provide a narrative description of each of them;
- (j) terrain data product specifications and obstacle data product specifications include information that identifies the reference system used in the data product and include the spatial reference system and temporal reference system;
- (k) terrain data product specifications and obstacle data product specifications identify the data quality requirements for each data product and includes a statement on acceptable conformance quality levels and corresponding data quality measures;
- (l) the statement on acceptable conformance quality levels and corresponding data quality measures covers all the data quality elements and data quality sub-elements;
- (m) terrain data product specifications includes a data capture statement which is a general description of the sources and processes applied for the capture of terrain data;
- (n) the principles and criteria applied in the maintenance of terrain data sets and obstacle data sets are provided with the data specifications, including the frequency with which data products are updated;
- (o) the maintenance information of obstacle data sets and an indication of the principles, methods and criteria applied for obstacle data maintenance are provided;
- (p) terrain data product specifications contain information on how data held with data sets are presented;
- (q) product specifications for both terrain and obstacles contain data product delivery information which includes delivery formats and medium information;
- (r) the core terrain and obstacle metadata elements are included in the data product specifications and additional metadata items required to be supplied are stated in each product specification together with the format and encoding of the metadata; and
- (s) the obstacle data product specification, supported by geographical coordinates for each aerodrome included within the dataset, describes the following areas-
 - (i) Areas 2a, 2b, 2c, 2d;
 - (ii) the take-off flight path area; and
 - (iii) the obstacle limitation surfaces.

PART XII - AERODROME MAPPING DATA

49. An aeronautical information service provider shall ensure that aerodrome mapping data is supported by electronic terrain and obstacle data for Area 3 in order to ensure consistency and quality of all geographical data related to the aerodrome when applicable. Aerodrome mapping data — requirements for provision
50. An aeronautical information service provider shall ensure that-
- (a) the ISO 19100 series of standards for geographic information is used as a reference framework;
 - (b) aerodrome mapping data products are described following the ISO 19131 data product specification standard.
- Aerodrome mapping data product specification
51. An aeronautical information service provider shall ensure that-
- (a) the content and structure of aerodrome mapping data sets are defined in terms of an application schema and a feature catalogue;
 - (b) aerodrome mapping data sets contain aerodrome mapping data consisting of aerodrome features; and
 - (c) aerodrome mapping metadata comply with ISO 19115.
- Aerodrome mapping database — data set content and structure

PART XIII – ADMINISTRATIVE AND PERSONNEL REQUIREMENTS

52. (1) Subject to the provisions of the Civil Aviation (Rules of the Air) Regulations as amended, an aeronautical information service provider shall establish and operationalise air traffic service reporting offices as appropriate for the purpose of reception and management of flight plans. Establishment of air traffic service reporting offices
- (2) The established air traffic service reporting offices in sub regulation (1) shall be adequately equipped and staffed with personnel sufficient for the effective execution of the function;
- (3) A person shall not provide an air traffic service reporting offices service other than when under supervision unless he is a holder of an appropriate instrument of Authority in the form of a certificate of competency with endorsement type equivalent to the function being undertaken;
- (4) The certificate of competency required in sub regulation (3) shall be issued by the Authority.
53. (1) An aeronautical information management provider shall appoint -
- Aeronautical information management and air traffic service reporting offices Personnel Requirements.

- (a) an accountable officer for aeronautical information service/aeronautical information management, to whom authority has been granted to ensure that all activities undertaken are carried out in accordance with the applicable requirements prescribed in this regulation;
- (b) a Standards and Quality Assurance officer who shall be responsible for quality control and implementation of the Authority's requirements on QMS and SMS and who has direct access to the accountable manager referred to in sub regulation (a);
- (c) adequately trained and certified personnel to—
 - (i) plan, provide and supervise the approved services listed in the unit's manual of operations, in a safe and efficient manner;
 - (ii) receive, collate or assemble, edit, format, check, coordinate, publish/store and distribute aeronautical data and aeronautical information; and
 - (iii) facilitate flight planning, provide pre-flight information, and receive post flight information as necessary.
 - (iv) facilitate the development, maintenance and promulgation of aeronautical charts.

(2) An aeronautical information management provider shall include in the manual of operations an analysis of the personnel required to perform the aeronautical information service and aeronautical charts function by taking into account the duties and responsibilities of the staff concerned and also guidance provided by the Authority.

(3) An aeronautical information management provider shall develop a training policy, training programme and training plan as well as job description for each of the staff under the jurisdiction of the accountable officer and implement the same as applicable with the following considerations—

- (a) the training policy and programme shall lay down the training courses that different levels of staff shall have to undergo to perform their duties, including initial, recurrent and specialized training, where applicable; and
- (b) the job description shall depict the job purpose, key responsibilities, and outcome to be achieved of each staff.

(4) An aeronautical information management provider shall maintain individual training records for each of its staff, which shall include details of the courses completed by each staff as well as the time-frame for attending future courses as required under the training plan.

(5) An aeronautical information management provider shall conduct a yearly review of the training plan for each staff at the beginning of the financial year to identify any gaps in competency, changes in training requirement and prioritize the type of training required for the subsequent years.

54. An aeronautical information management provider shall—

- (a) develop and implement a policy to guide the identification of required competencies and endorsements to undertake specific tasks and or functions;
- (b) identify the competencies and the associated knowledge, skills and abilities required for each function and ensure that personnel possess the competencies required to perform the specific assigned functions;
- (c) establish initial and periodic assessments that require personnel to demonstrate the required competencies;
- (d) appropriately train personnel assigned to perform specific functions;
- (e) ensure that procedures are established to maintain currency of the competence of the personnel; and
- (f) ensure that its personnel are of sufficient numbers and with the requisite experience and have been given appropriate authority to be able to discharge their duties.

Aeronautical information management and air traffic service reporting offices personnel competency requirements.

55. (1) A person shall not provide an aeronautical information management service other than when under supervision unless he is a holder of an appropriate instrument of Authority in the form of a certificate of competency with endorsement type equivalent to the function being undertaken.

Instrument of Authority to perform Aeronautical information management functions

(2) The certificate of competency required in sub regulation (1) shall be issued by the Authority.

56. An aeronautical Information management 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 Integrated Aeronautical Information Package, or the aeronautical charts, that the provider publishes.

Aeronautical information management facility, equipment, data and information requirements.

57. (1) An aeronautical Information management Provider shall ensure that a contingency plan is in place that sets out the procedures to be followed if a service provided as part of its aeronautical information management is interrupted.

Aeronautical information management contingency plan

- (2) The contingency plan required in sub regulation (1) must include—
- (a) the actions to be taken by personnel responsible for providing the service;
 - (b) possible alternative arrangements for providing the service; and
 - (c) arrangements for resuming normal provision of the service.

58. An Aeronautical Information management Provider shall implement a safety management system that—

Requirements for
SMS
Implementation.

- (a) is a systemic approach to managing safety;
- (b) integrates human factors principles; and
- (c) includes the following elements—
 - (i) organisational structures, accountabilities, policies and procedures necessary to manage safety in a systemic way;
 - (ii) a statement of the provider's safety policy, objectives and planning, including details of the following:
 - (iii) the management commitment to, and responsibility for, safety;
 - (iv) the safety accountabilities of managers;
 - (v) the appointment of safety management personnel;
 - (vi) how human factors principles are integrated into the safety management system;
 - (vii) a safety management system implementation plan;
 - (viii) relevant third party relationships and interactions;
 - (ix) coordination of an emergency response plan;
 - (x) safety management system documentation;
- (d) a safety risk management process, including—
 - (i) hazard identification processes; and
 - (ii) risk assessment and mitigation processes;
- (e) a safety assurance system, including details of processes for—
 - (i) safety performance monitoring and measurement;
 - (ii) internal safety investigation;
 - (iii) management of change; and
 - (iv) continuous improvement of the safety management system.
- (f) a safety training and promotion system, including details of the following—

- (i) safety management system training;
- (ii) safety management system safety communication.

59. (1) An aeronautical information management provider shall have procedures for making, collecting, indexing, storing, securing, maintaining, accessing and disposing of the following—

Maintenance of records.

- (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 provider;
- (e) records that identify each Notice To Air Men authorised person for an aeronautical data originator that requests the provider to issue Notice To Air Mens;
- (f) records that identify each occurrence of an error or omission in aeronautical data or aeronautical information published by the provider in the Integrated Aeronautical Information Package or on an aeronautical chart;
- (g) records that contain the results of any audit, inspection or review of the provider's aeronautical information service.

(2) An aeronautical information service provider shall ensure that records mentioned in sub regulation (1) are legible and permanent

(3) The provider shall keep records referred in sub-regulation (1) and the data or information for at least ten years after the data or information ceases to be effective.

PART XIV — EXEMPTIONS

60. (1) A person may apply to the Authority for an exemption from any provision of these Regulations.

Requirements for application for exemption.

(2) Unless in case of emergency, a person requiring exemptions from any of these regulations shall make an application to the Authority at least sixty days prior to the proposed effective date, giving the following information—

- (a) name and contact address including electronic mail and fax if any;
- (b) telephone number;
- (c) a citation of the specific requirement from which the

applicant seeks exemption;

- (d) justification for the exemption;
- (e) a description of the type of operations to be conducted under the proposed exemption;
- (f) the proposed duration of the exemption;
- (g) an explanation of how the exemption would be in the public interest;
- (h) a detailed description of the alternative means by which the applicant will ensure a level of safety equivalent to that established by the regulation in question;
- (i) A safety risk assessment carried out in respect of the exemption applied for;
- (j) if the applicant handles international operations and seeks to operate under the proposed exemption, an indication whether the exemption would contravene any provision of the Standards and Recommended Practices of the International Civil Aviation Organization (International Civil Aviation Organisation); and
- (k) any other information that the Authority may require.

(3) Where the applicant seeks emergency processing of an application for exemption, the application shall contain supporting facts and reasons for not filing the application within the time specified in sub regulation (2) and satisfactory reason for deeming the application an emergency.

(4) The Authority may in writing, decline an application made under sub regulation (3), where in the opinion of the Authority, the reasons given for emergency processing are not satisfactory.

(5) The application for exemption shall be accompanied by fee prescribed by the Authority.

61. (1) The Authority shall review the application for exemption made under these regulations for accuracy and compliance and if the application is satisfactory, the Authority shall publish a detailed summary of the application for comments, within a prescribed time, in either—

- (a) the Kenya Gazette; or
- (b) aeronautical information circular; or
- (c) a daily newspaper with national circulation.

(2) Where application requirements have not been fully complied with, the Authority shall request the applicant in writing, to comply prior to publication or making a decision under sub regulation (3).

(3) If the request is for emergency relief, the Authority shall publish the decision as soon as possible after processing the application.

62. (1) Where the application requirements have been satisfied, the Authority shall conduct an evaluation of the request to include-

Review and publication.

Evaluation of the request.

- (a) determination of whether an exemption would be in the public interest;
- (b) a determination, after a technical evaluation of whether the applicant's proposal would provide a level of safety equivalent to that established by the regulation, although where the Authority decides that a technical evaluation of the request would impose a significant burden on the Authority's technical resources, the Authority may deny the exemption on that basis;
- (c) a determination of whether a grant of the exemption would contravene these Regulations; and
- (d) a recommendation based on the preceding elements, of whether the request should be granted or denied, and of any conditions or limitations that should be part of the exemption.

(2) The Authority shall notify the applicant in writing, the decision to grant or deny the request and publish a detailed summary of its evaluation and decision.

(3) The summary referred to in sub-regulation (2) shall specify the duration of the exemption and any conditions or limitations of the exemption.

(4) If the exemption affects a significant population of the aviation community within the Kenya, the Authority shall publish the summary in aeronautical information circular.

63. The validity of any exemption issued under these regulations shall be dependent on the air navigation service provider complying with any condition that Authority may specify in the exemption as being necessary in the interests of safety of air navigation.

Validity of an exemption

64. An air navigation service provider shall comply with any Condition specified by the Authority in the exemption.

Compliance with conditions of the exemption

PART XV – OTHER PROVISIONS

65. A person may apply to the Authority in the prescribed form for replacement of documents issued under these Regulations if such documents are lost or destroyed.

Replacement of documents.

66. (1) Any person who knows of a violation of the Act, or any Regulations, rules, or orders issued there under, shall report it to the Authority.

Reports of violation.

(2) The Authority may determine the nature and type of investigation or enforcement action that need to be taken.

67. Any person who fails to comply with any direction given to him by the Authority or by any authorised person under any provision of these Regulations shall be deemed for the purposes of these Regulations to have contravened that provision.

Failure to comply with direction.

PART XII - OFFENCES AND PENALTIES

68. A person who contravenes any provision of these Regulations may have his certificate or exemption cancelled or suspended.

Contravention of Regulations.

69. (1) A person who contravenes any provision of these Regulations, orders, notices or proclamations made there under shall, upon conviction, be liable to a fine or imprisonment or both, and in the case of a continuing contravention, each day of the contravention shall constitute a separate offence.

Penalties.

(2) Any person who contravenes any provision of these Regulations shall upon conviction be liable to a fine not exceeding one million shillings or to imprisonment for a term not more than six months or to both.

(3) If it is proved that an act or omission of any person, which would otherwise have been a contravention by that person of a provision of these Regulations, orders, notices or proclamations made there under was due to any cause not avoidable by the exercise of reasonable care by that person, the act or omission shall be deemed not to be a contravention by that person of that provision.

70. Where any person is aggrieved by any order made under these Regulations the person may, within twenty one days of such order being made, appeal against the order to a court of law with competent jurisdiction.

Appeal.

71. (1) This regulation comes into operation on the date on which this regulation is published in the *Gazette*.

Revocation, savings and transitional provision.

(2) The Cabinet Secretary shall, by notice published in the *Gazette*, bring into operation the remaining provisions of this regulation at such date or such different dates as the Cabinet Secretary appoints.

(3) If the Cabinet Secretary has failed to bring any of the remaining provisions into operation within nine months after the date on which this section has come into operation, Parliament may, by resolution of each of its houses, bring into operation such of those provisions as have not yet been commenced

FIRST SCHEDULE

(r. 6(d))

CONTENTS OF THE AERONAUTICAL INFORMATION PUBLICATION

(aeronautical information publication)

(See Part V)

PART 1 — GENERAL (GEN)

When the aeronautical information publication is produced as one volume, the preface, record of aeronautical information publication Amendments, record of aeronautical information publication Supplements, checklist of aeronautical information publication pages and list of current hand amendments appear only in Part 1 — GEN, and the annotation “not applicable” must be entered against each of these subsections in Parts 2 and 3.

If an aeronautical information publication is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of aeronautical information publication Amendments, record of aeronautical information publication Supplements, checklist of aeronautical information publication pages and list of current hand amendments must be included in each volume.

GEN 0.1 Preface

Brief description of the Aeronautical Information Publication (aeronautical information publication), including:

- (1) name of the publishing authority;
- (2) applicable International Civil Aviation Organisation documents;
- (3) publication media (i.e. printed, online or other electronic media);
- (4) the aeronautical information publication structure and established regular amendment interval;
- (5) copyright policy, if applicable; and
- (6) service to contact in case of detected aeronautical information publication errors or omissions.

GEN 0.2 Records of aeronautical information publication Amendments

A record of aeronautical information publication Amendments and Aeronautical Information Regulation And Control aeronautical information publication Amendments (published in accordance with the Aeronautical Information Regulation And Control system) containing:

- (1) amendment number;
- (2) publication date;
- (3) date inserted (for the Aeronautical Information Regulation And Control aeronautical information publication Amendments, effective date); and
- (4) initials of officer who inserted the amendment.

GEN 0.3 Record of aeronautical information publication Supplements

A record of issued aeronautical information publication Supplements containing:

- (1) Supplement number;
- (2) Supplement subject;

- (3) aeronautical information publication section(s) affected;
- (4) period of validity; and
- (5) cancellation record.

GEN 0.4 Checklist of aeronautical information publication pages

A checklist of aeronautical information publication pages containing:

- (1) page number/chart title; and
- (2) publication or effective date (day, month by name and year) of the aeronautical information.

GEN 0.5 List of hand amendments to the aeronautical information publication

A list of current hand amendments to the aeronautical information publication containing:

- (1) aeronautical information publication page(s) affected;
- (2) amendment text; and
- (3) aeronautical information publication Amendment number by which a hand amendment was introduced.

GEN 0.6 Table of contents to Part 1

A list of sections and subsections contained in Part 1 — General (GEN).

GEN 1. NATIONAL REGULATIONS AND REQUIREMENTS

GEN 1.1 Designated authorities

The addresses of designated authorities concerned with the facilitation of international air navigation (civil aviation, meteorology, customs, immigration, health, en-route and aerodrome/heliport charges, agricultural quarantine and aircraft accident investigation) containing, for each authority:

- (1) designated authority;
- (2) name of the authority;
- (3) postal address;
- (4) telephone number;
- (5) telefax number;
- (6) e-mail address;
- (7) aeronautical fixed service (AFS) address; and
- (8) website address, if available.

GEN 1.2 Entry, transit and departure of aircraft

Regulations and requirements for advance notification and applications for permission concerning entry, transit and departure of aircraft on international flights.

GEN 1.3 Entry, transit and departure of passengers and crew

Regulations (including customs, immigration and quarantine, and requirements for advance notification and applications for permission) concerning entry, transit and departure of non-immigrant passengers and crew.

GEN 1.4 Entry, transit and departure of cargo

Regulations (including customs, and requirements for advance notification and applications for permission) concerning entry, transit and departure of cargo.

GEN 1.5 Aircraft instruments, equipment and flight documents

Brief description of aircraft instruments, equipment and flight documents, including:

(1) instruments, equipment (including aircraft communication, navigation and surveillance equipment) and flight documents to be carried on aircraft, including any special requirement in addition to the provisions specified in Annex 6, Part I, Chapters 6 and 7; and

(2) emergency locator transmitter (ELT), signalling devices and life-saving equipment as presented in Annex 6, Part I, 6.6 and Part II, 2.4.5, where so determined by regional air navigation meetings, for flights over designated land areas.

GEN 1.6 Summary of national regulations and international agreements/ conventions

A list of titles and references and, where applicable, summaries of national regulations affecting air navigation, together with a list of international agreements/conventions ratified by State.

GEN 1.7 Differences from International Civil Aviation Organisation Standards, Recommended Practices and Procedures

A list of significant differences between national regulations and practices of the State and related International Civil Aviation Organisation provisions, including:

- (1) provision affected (Annex and edition number, paragraph); and
- (2) difference in full text.

All significant differences must be listed under this subsection. All Annexes must be listed in numerical order even if there is no difference to an Annex, in which case a NIL notification must be provided. National differences or the degree of non application of the regional supplementary procedures (SUPPs) must be notified immediately following the Annex to which the supplementary procedure relates.

GEN 2. TABLES AND CODES

GEN 2.1 Measuring system, aircraft markings, holidays

GEN 2.1.1 Units of measurement

Description of units of measurement used including table of units of measurement.

GEN 2.1.2 Temporal reference system

Description of the temporal reference system (calendar and time system) employed, together with an indication of whether or not daylight saving hours are employed and how the temporal reference system is presented throughout the aeronautical information publication.

GEN 2.1.3 Horizontal reference system

Brief description of the horizontal (geodetic) reference system used, including:

1. name/designation of the reference system;
2. identification and parameters of the projection;

3. identification of the ellipsoid used;
4. identification of the datum used;
5. area(s) of application; and
6. an explanation, if applicable, of the asterisk used to identify those coordinates that do not meet Annex 11 and 14 accuracy requirements.

GEN 2.1.4 Vertical reference system

Brief description of the vertical reference system used, including:

- (1) name/designation of the reference system;
- (2) description of the geoid model used including the parameters required for height transformation between the model used and EGM-96; and
- (3) an explanation, if applicable, of the asterisk used to identify those elevations/geoid undulations that do not meet Annex 14 accuracy requirements.

GEN 2.1.5 Aircraft nationality and registration marks

Indication of aircraft nationality and registration marks adopted by the State.

GEN 2.1.6 Public holidays

A list of public holidays with indication of services being affected.

GEN 2.2 Abbreviations used in aeronautical information service publications

A list of alphabetically arranged abbreviations and their respective significations used by the State in its aeronautical information publication and in the distribution of aeronautical data and aeronautical information with appropriate annotation for those national abbreviations that are different from those contained in the Procedures for Air Navigation Services — International Civil Aviation Organisation Abbreviations and Codes

(PANS-ABC, Doc 8400).

GEN 2.3 Chart symbols

A list of chart symbols arranged according to the chart series where symbols are applied.

GEN 2.4 Location indicators

A list of alphabetically arranged location indicators assigned to the locations of aeronautical fixed stations to be used for encoding and decoding purposes. An annotation to locations not connected to the aeronautical fixed service (AFS) must be provided.

GEN 2.5 List of radio navigation aids

A list of radio navigation aids arranged alphabetically, containing:

- (1) identifier;
- (2) name of the station;
- (3) type of facility/aid; and
- (4) indication whether aid serves en-route (E), aerodrome (A) or dual (AE) purposes.

GEN 2.6 Conversion of units of measurement

Tables for conversion or, alternatively, conversion formulae between:

- (1) nautical miles and kilometres and vice versa;
- (2) feet and metres and vice versa;
- (3) decimal minutes of arc and seconds of arc and vice versa; and
- (4) other conversions as appropriate.

GEN 2.7 Sunrise/sunset

Information on the time of sunrise and sunset including a brief description of criteria used for determination of the times given and either a simple formulae or table from which times may be calculated for any location within its territory/area of responsibility, or an alphabetical list of locations for which the times are given in a table with a reference to the related page in the table and the sunrise/sunset tables for the selected stations/locations, including:

- (1) station name;
- (2) International Civil Aviation Organisation location indicator;
- (3) geographical coordinates in degrees and minutes;
- (4) date(s) for which times are given;
- (5) time for the beginning of morning civil twilight;
- (6) time for sunrise;
- (7) time for sunset; and
- (8) time for the end of evening civil twilight.

GEN 3. SERVICES**GEN 3.1 Aeronautical information services****GEN 3.1.1 Responsible service**

Description of the Aeronautical Information Service (aeronautical information service) provided and its major components, including:

- (1) service/unit name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available;
- (8) a statement concerning the International Civil Aviation Organisation documents on which the service is based and a reference to the aeronautical information publication location where differences, if any, are listed; and
- (9) an indication if service is not H24.

GEN 3.1.2 Area of responsibility

The area of responsibility for the aeronautical information service.

GEN 3.1.3 Aeronautical publications

Description of the elements of the Integrated Aeronautical Information Package, including:

- (1) aeronautical information publication and related amendment service;
- (2) aeronautical information publication Supplements;
- (3) AIC;
- (4) Notice To Air Men and pre-flight information bulletins (PIB);
- (5) checklists and lists of valid Notice To Air Men; and
- (6) how they may be obtained.

When an AIC is used to promulgate publication prices, that must be indicated in this section of the aeronautical information publication.

GEN 3.1.4 Aeronautical Information Regulation And Control system

Brief description of the Aeronautical Information Regulation And Control system provided including a table of present and near future Aeronautical Information Regulation And Control dates.

GEN 3.1.5 Pre-flight information service at aerodromes/heliports

A list of aerodromes/heliports at which pre-flight information is routinely available, including an indication of relevant:

- (1) elements of the Integrated Aeronautical Information Packages held;
- (2) maps and charts held; and
- (3) general area of coverage of such data.

GEN 3.1.6 Electronic terrain and obstacle data

Details of how electronic terrain and obstacle data may be obtained, containing:

- 1) name of the individual, service or organization responsible;
- 2) street address and e-mail address of the individual, service or organization responsible;
- (2) telefax number of the individual, service or organization responsible;
- (3) contact telephone number of the individual, service or organization responsible;
- (4) hours of service (time period including time zone when contact can be made);
- (5) online information that can be used to contact the individual, service or organization; and
- (6) supplemental information, if necessary, on how and when to contact the individual, service or organization.

GEN 3.2 Aeronautical charts

GEN 3.2.1 Responsible service(s)

Description of service(s) responsible for the production of aeronautical charts, including:

- 1) service name;
- 2) postal address;
- 3) telephone number;

- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the International Civil Aviation Organisation documents on which the service is based and a reference to the aeronautical information publication location where differences, if any, are listed; and
- 9) an indication if service is not H24.

GEN 3.2.2 Maintenance of charts

Brief description of how aeronautical charts are revised and amended.

GEN 3.2.3 Purchase arrangements

Details of how charts may be obtained, containing:

- 1) service/sales agency(ies);
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address; and
- 7) website address, if available.

GEN 3.2.4 Aeronautical chart series available

A list of aeronautical chart series available followed by a general description of each series and an indication of the intended use.

GEN 3.2.5 List of aeronautical charts available

A list of aeronautical charts available, including:

- 1) title of series;
- 2) scale of series;
- 3) name and/or number of each chart or each sheet in a series;
- 4) price per sheet; and
- 5) date of latest revision.

GEN 3.2.6 Index to the World Aeronautical Chart (WAC) — International Civil Aviation Organisation 1:1 000 000

An index chart showing coverage and sheet layout for the WAC 1:1 000 000 produced by a State. If Aeronautical Chart — International Civil Aviation Organisation 1:500 000 is produced instead of WAC 1:1 000 000, index charts must be used to indicate coverage and sheet layout for the Aeronautical Chart — International Civil Aviation Organisation 1:500 000.

GEN 3.2.7 Topographical charts

Details of how topographical charts may be obtained, containing:

- 1) name of service/agency(ies);
- 2) postal address;

- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address; and
- 7) website address, if available.

GEN 3.2.8 Corrections to charts not contained in the aeronautical information publication

A list of corrections to aeronautical charts not contained in the aeronautical information publication, or an indication where such information can be obtained.

GEN 3.3 Air traffic services

GEN 3.3.1 Responsible service

Description of the air traffic service and its major components, including:

- 1) service name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the International Civil Aviation Organisation documents on which the service is based and a reference to the aeronautical information publication location where differences, if any, are listed; and
- 9) an indication if service is not H24.

GEN 3.3.2 Area of responsibility

Brief description of area of responsibility for which air traffic services are provided.

GEN 3.3.3 Types of services

Brief description of main types of air traffic services provided.

GEN 3.3.4 Coordination between the operator and ATS

General conditions under which coordination between the operator and air traffic services is effected.

GEN 3.3.5 Minimum flight altitude

The criteria used to determine minimum flight altitudes.

GEN 3.3.6 ATS units address list

A list of ATS units and their addresses arranged alphabetically, containing:

- 1) unit name;
- 2) postal address;

- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address; and
- 7) website address, if available.

GEN 3.4 Communication services

GEN 3.4.1 Responsible service

Description of the service responsible for the provision of telecommunication and navigation facilities, including:

1. service name;
2. postal address;
3. telephone number;
4. telefax number;
5. e-mail address;
6. AFS address;
7. website address, if available;
8. a statement concerning the International Civil Aviation Organisation documents on which the service is based and a reference to the aeronautical information publication location where differences, if any, are listed; and
9. an indication if service is not H24.

GEN 3.4.2 Area of responsibility

Brief description of area of responsibility for which telecommunication service is provided.

GEN 3.4.3 Types of service

Brief description of the main types of service and facilities provided, including:

- 1) radio navigation services;
- 2) voice and/or data link services;
- 3) broadcasting service;
- 4) language(s) used; and
- 5) an indication of where detailed information can be obtained.

GEN 3.4.4 Requirements and conditions

Brief description concerning the requirements and conditions under which the communication service is available.

GEN 3.4.5 Miscellaneous

Any additional information (e.g. selected radio broadcasting stations, telecommunications diagram).

GEN 3.5 Meteorological services**GEN 3.5.1 Responsible service**

Brief description of the meteorological service responsible for the provision of meteorological information, including:

- 1) service name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available;
- 8) a statement concerning the International Civil Aviation Organisation documents on which the service is based and a reference to the aeronautical information publication location where differences, if any, are listed; and
- 9) an indication if service is not H24.

GEN 3.5.2 Area of responsibility

Brief description of area and/or air routes for which meteorological service is provided.

GEN 3.5.3 Meteorological observations and reports

Detailed description of the meteorological observations and reports provided for international air navigation, including:

- 1) name of the station and the International Civil Aviation Organisation location indicator;
- 2) type and frequency of observation including an indication of automatic observing equipment;
- 3) types of meteorological reports (e.g. METAR) and availability of a trend forecast;
- 4) specific type of observation system and number of observation sites used to observe and report surface wind, visibility, runway visual range, cloud base, temperature and, where applicable, wind shear (e.g. anemometer at intersection of runways, transmissometer next to touchdown zone, etc.);
- 5) hours of operation; and
- 6) indication of aeronautical climatological information available.

GEN 3.5.4 Types of services

Brief description of the main types of service provided, including details of briefing, consultation, display of meteorological information, flight documentation available for operators and flight crew members, and of the methods and means used for supplying the meteorological information.

GEN 3.5.5 Notification required from operators

Minimum amount of advance notice required by the meteorological authority from operators in respect of briefing, consultation and flight documentation and other meteorological information they require or change.

GEN 3.5.6 Aircraft reports

As necessary, requirements of the meteorological authority for the making and transmission of aircraft reports.

GEN 3.5.7 VOLMET service

Description of VOLMET and/or D-VOLMET service, including:

- 1) name of transmitting station;
- 2) call sign or identification and abbreviation for the radio communication emission;
- 3) frequency or frequencies used for broadcast;
- 4) broadcasting period;
- 5) hours of service;
- 6) list of aerodromes/heliports for which reports and/or forecasts are included; and
- 7) reports, forecasts and SIGMET information included and remarks.

GEN 3.5.8 SIGMET and AIRMET service

Description of the meteorological watch provided within flight information regions or control areas for which air traffic services are provided, including a list of the meteorological watch offices with:

- 1) name of the meteorological watch office, International Civil Aviation Organisation location indicator;
- 2) hours of service;
- 3) flight information region(s) or control area(s) served;
- 4) SIGMET validity periods;
- 5) specific procedures applied to SIGMET information (e.g. for volcanic ash and tropical cyclones);
- 6) procedures applied to AIRMET information (in accordance with relevant regional air navigation agreements);
- 7) the air traffic services unit(s) provided with SIGMET and AIRMET information; and
- 8) additional information (e.g. concerning any limitation of service, etc.).

GEN 3.5.9 Other automated meteorological services

Description of available automated services for the provision of meteorological information (e.g. automated pre-flight information service accessible by telephone and/or computer modem) including:

- 1) service name;
- 2) information available;
- 3) areas, routes and aerodromes covered; and

- 4) telephone and telefax number(s), e-mail address, and, if available, website address.

GEN 3.6 Search and rescue

GEN 3.6.1 Responsible service(s)

Brief description of service(s) responsible for the provision of search and rescue (SAR), including:

- 1) service/unit name;
- 2) postal address;
- 3) telephone number;
- 4) telefax number;
- 5) e-mail address;
- 6) AFS address;
- 7) website address, if available; and
- 8) a statement concerning the International Civil Aviation Organisation documents on which the service is based and a reference to the aeronautical information publication location where differences, if any, are listed.

GEN 3.6.2 Area of responsibility

Brief description of area of responsibility within which search and rescue services are provided.

GEN 3.6.3 Types of service

Brief description and geographical portrayal, where appropriate, of the type of service and facilities provided including indications where SAR aerial coverage is dependent upon significant deployment of aircraft.

GEN 3.6.4 SAR agreements

Brief description of SAR agreements in force, including provisions for facilitating entry and departure of other States' aircraft for search, rescue, salvage, repair or salvage in connection with lost or damaged aircraft, either with airborne notification only or after flight plan notification.

GEN 3.6.5 Conditions of availability

Brief description of provisions for search and rescue, including the general conditions under which the service and facilities are available for international use, including an indication of whether a facility available for search and rescue is specialized in SAR techniques and functions, or is specially used for other purposes but adapted for SAR purposes by training and equipment, or is only occasionally available and has no particular training or preparation for SAR work.

GEN 3.6.6 Procedures and signals used

Brief description of the procedures and signals employed by rescue aircraft and a table showing the signals to be used by survivors.

GEN 4. CHARGES FOR AERODROMES/HELIPORTS AND AIR NAVIGATION SERVICES

Reference may be made to where details of actual charges may be found, if not itemized in this chapter.

GEN 4.1 Aerodrome/heliport charges

Brief description of type of charges which may be applicable at aerodromes/heliports available for international use, including:

- 1) landing of aircraft;
- 2) parking, hangar age and long-term storage of aircraft;
- 3) passenger service;
- 4) security;
- 5) noise-related items;
- 6) other (customs, health, immigration, etc.);
- 7) exemptions/reductions; and
- 8) methods of payment.

GEN 4.2 Air navigation services charges

Brief description of charges which may be applicable to air navigation services provided for international use, including:

- 1) approach control;
- 2) route air navigation services;
- 3) cost basis for air navigation services and exemptions/reductions; and
- 4) methods of payment.

PART 2 — EN-ROUTE (ENR)

If an aeronautical information publication is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of aeronautical information publication Amendments, record of aeronautical information publication Supplements, checklist of aeronautical information publication pages and list of current hand amendments must be included in each volume. In the case of an aeronautical information publication being published as one volume, the annotation “not applicable” must be entered against each of the above subsections.

ENR 0.6 Table of contents to Part 2

A list of sections and subsections contained in Part 2 — En-route.

ENR 1. GENERAL RULES AND PROCEDURES

ENR 1.1 General rules

The requirement is for publication of the general rules as applied within the State.

ENR 1.2 Visual flight rules

The requirement is for publication of the visual flight rules as applied within the State.

ENR 1.3 Instrument flight rules

The requirement is for publication of the instrument flight rules as applied within the State.

ENR 1.4 ATS airspace classification and description

ENR 1.4.1 ATS airspace classification

The description of ATS airspace classes in the form of the ATS airspace classification table in Annex 11, Appendix 4, appropriately annotated to indicate those airspace classes not used by the State.

ENR 1.4.2 ATS airspace description

Other ATS airspace descriptions as applicable, including general textual descriptions.

ENR 1.5 Holding, approach and departure procedures

ENR 1.5.1 General

The requirement is for a statement concerning the criteria on which holding, approach and departure procedures are established. If different from International Civil Aviation Organisation provisions, the requirement is for presentation of criteria used in a tabular form.

ENR 1.5.2 Arriving flights

The requirement is to present procedures (conventional or area navigation or both) for arriving flights which are common to flights into or within the same type of airspace. If different procedures apply within a terminal airspace, a note to this effect must be given together with a reference to where the specific procedures can be found.

ENR 1.5.3 Departing flights

The requirement is to present procedures (conventional or area navigation or both) for departing flights which are common to flights departing from any aerodrome/heliport.

ENR 1.5.4 Other relevant information and procedures

Brief description of additional information, e.g. entry procedures, final approach alignment, holding procedures and patterns.

ENR 1.6 ATS surveillance services and procedures

ENR 1.6.1 Primary radar

Description of primary radar services and procedures, including:

- 1) supplementary services;
- 2) the application of radar control service;
- 3) radar and air-ground communication failure procedures;
- 4) voice and CPDLC position reporting requirements; and
- 5) graphic portrayal of area of radar coverage.

ENR 1.6.2 Secondary surveillance radar (SSR)

Description of secondary surveillance radar (SSR) operating procedures, including:

- 1) emergency procedures;
- 2) air-ground communication failure and unlawful interference procedures;
- 3) the system of SSR code assignment;
- 4) voice and CPDLC position reporting requirements; and
- 5) graphic portrayal of area of SSR coverage.

ENR 1.6.3 Automatic dependent surveillance — broadcast (ADS-B)

Description of automatic dependent surveillance — broadcast (ADS-B) operating procedures, including:

- 1) emergency procedures;
- 2) air-ground communication failure and unlawful interference procedures;
- 3) aircraft identification requirements;
- 4) voice and CPDLC position reporting requirements; and
- 5) graphic portrayal of area of ADS-B coverage.

ENR 1.6.4 Other relevant information and procedures

Brief description of additional information and procedures, e.g. radar failure procedures and transponder failure procedures.

ENR 1.7 Altimeter setting procedures

The requirement is for a statement of altimeter setting procedures in use, containing:

- 1) brief introduction with a statement concerning the International Civil Aviation Organisation documents on which the procedures are based together with differences to International Civil Aviation Organisation provisions, if any;
- 2) basic altimeter setting procedures;
- 3) description of altimeter setting region(s);
- 4) procedures applicable to operators (including pilots); and
- 5) table of cruising levels.

ENR 1.8 Regional supplementary procedures

The requirement is for presentation of regional supplementary procedures (SUPPs) affecting the entire area of responsibility.

ENR 1.9 Air traffic flow management and airspace management

Brief description of air traffic flow management (ATFM) system and airspace management, including:

- (7) ATFM structure, service area, service provided, location of unit(s) and hours of operation;
- (8) types of flow messages and descriptions of the formats; and
- (9) procedures applicable for departing flights, containing:
 - a) service responsible for provision of information on applied ATFM measures;
 - b) flight plan requirements; and
 - c) slot allocations.

(10) information on overall responsibility regarding airspace management within FIR(s), details of civil/military airspace allocation and management coordination, structure of manageable airspace (allocation and changes to allocation) and general operating procedures.

ENR 1.10 Flight planning

The requirement is to indicate any restriction, limitation or advisory information related to the flight planning stage which may assist the user in the presentation of the intended flight operation, including:

- 1) procedures for the submission of a flight plan;
- 2) repetitive flight plan system; and
- 3) changes to the submitted flight plan.

ENR 1.11 Addressing of flight plan messages

The requirement is for an indication, in tabular form, of the addresses allocated to flight plans, showing:

- 1) category of flight (IFR, VFR or both);
- 2) route (into or via FIR and/or TMA); and
- 3) message address.

ENR 1.12 Interception of civil aircraft

The requirement is for a complete statement of interception procedures and visual signals to be used with a clear indication of whether International Civil Aviation Organisation provisions are applied and, if not, that differences exist.

ENR 1.13 Unlawful interference

The requirement is for presentation of appropriate procedures to be applied in case of unlawful interference.

ENR 1.14 Air traffic incidents

Description of air traffic incidents reporting system, including:

- 1) definition of air traffic incidents;
- 2) use of the "Air Traffic Incident Reporting Form";
- 3) reporting procedures (including in-flight procedures); and
- 4) purpose of reporting and handling of the form.

ENR 2. AIR TRAFFIC SERVICES AIRSPACE

ENR 2.1 FIR, UIR, TMA AND CTA

Detailed description of flight information regions (FIR), upper flight information regions (UIR), and control areas (CTA) (including specific CTA such as TMA), including:

- 1) name, geographical coordinates in degrees and minutes of the FIR/UIR lateral limits and in degrees, minutes and seconds of the CTA lateral limits, vertical limits and class of airspace;
- 2) identification of unit providing the service;
- 3) call sign of aeronautical station serving the unit and language(s) used, specifying the area and conditions, when and where to be used, if applicable;
- 4) frequencies and if applicable SATVOICE number, supplemented by indications for specific purposes; and
- 5) remarks.

Control zones around military air bases not otherwise described in the aeronautical information publication must be included in this subsection. Where the requirements of Annex 2 concerning flight plans, two-way communications and position reporting apply

to all flights in order to eliminate or reduce the need for interceptions and/or where the possibility of interception exists and the maintenance of guard on the VHF emergency channel 121.5 MHz is required, a statement to this effect must be included for the relevant area(s) or portion(s) thereof.

A description of designated areas over which the carriage of an emergency locator transmitter (ELT) is required and where aircraft shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

ENR 2.2 Other regulated airspace

Where established, a detailed description of other types of regulated airspace and airspace classification.

ENR 3. ATS ROUTES

ENR 3.1 Lower ATS routes

Detailed description of lower ATS routes, including:

- 1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

- 2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;

- 3) upper and lower limits or minimum en-route altitudes, to the nearest higher 50 m or 100 ft, and airspace classification;

- 4) lateral limits and minimum obstacle clearance altitudes;

- 5) direction of cruising levels;

- 6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and

- 7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.2 Upper ATS routes

Detailed description of upper ATS routes, including:

- (1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

(2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;

(3) upper and lower limits and airspace classification;

(4) lateral limits;

(5) direction of cruising levels;

(6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and

(7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations

ENR 3.3 Area navigation routes

Detailed description of PBN (RNAV and RNP) routes, including:

(1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

(2) in respect of waypoints defining an area navigation route, additionally as applicable:

a) station identification of the reference VOR/DME;

b) bearing to the nearest degree and the distance to the nearest tenth of a kilometre or tenth of a nautical mile from the reference VOR/DME, if the waypoint is not collocated with it; and

c) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft);

(3) magnetic bearing to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between defined end-points and distance between each successive designated significant point;

(4) upper and lower limits and airspace classification;

(5) direction of cruising levels;

(6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and

(7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.4 Helicopter routes

Detailed description of helicopter routes, including:

1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded

designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;

3) upper and lower limits and airspace classification;

4) minimum flight altitudes to the nearest higher 50 m or 100 ft;

5) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and

6) remarks, including an indication of the controlling unit, and its operating channel, and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.5 Other routes

The requirement is to describe other specifically designated routes which are compulsory within specified area(s).

ENR 3.6 En-route holding

The requirement is for a detailed description of en-route holding procedures, containing:

1) holding identification (if any) and holding fix (navigation aid) or waypoint with geographical coordinates in degrees, minutes and seconds;

2) inbound track;

3) direction of the procedure turn;

4) maximum indicated airspeed;

5) minimum and maximum holding level;

6) time/distance outbound; and

7) indication of the controlling unit and its operating frequency.

ENR 4. RADIO NAVIGATION AIDS/SYSTEMS

ENR 4.1 Radio navigation aids — en-route

A list of stations providing radio navigation services established for en-route purposes and arranged alphabetically by name of the station, including:

1) name of the station and magnetic variation to the nearest degree and for VOR, station declination to the nearest degree used for technical line-up of the aid;

2) identification;

3) frequency/channel for each element;

4) hours of operation;

5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;

6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft); and

7) remarks.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

ENR 4.2 Special navigation systems

Description of stations associated with special navigation systems (DECCA, LORAN, etc.), including:

- 1) name of station or chain;
- 2) type of service available (master signal, slave signal, colour);
- 3) frequency (channel number, basic pulse rate, recurrence rate, as applicable);
- 4) hours of operation;
- 5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting station; and
- 6) remarks.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

ENR 4.3 Global navigation satellite system (GNSS)

A list and description of elements of the global navigation satellite system (GNSS) providing the navigation service established for en-route purposes and arranged alphabetically by name of the element, including:

- 1) the name of the GNSS element (GPS, GLONASS, EGNOS, MSAS, WAAS, etc.);
- 2) frequency(ies), as appropriate;
- 3) geographical coordinates in degrees, minutes and seconds of the nominal service area and coverage area; and
- 4) remarks.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column.

ENR 4.4 Name-code designators for significant points

An alphabetically arranged list of name-code designators (five-letter pronounceable "name-code") established for significant points at positions not marked by the site of radio navigation aids, including:

- 1) name-code designator;
- 2) geographical coordinates in degrees, minutes and seconds of the position;
- 3) reference to ATS or other routes where the point is located; and
- 4) remarks, including supplementary definition of positions where required.

ENR 4.5 Aeronautical ground lights — en-route

A list of aeronautical ground lights and other light beacons designating geographical positions which are selected by the State as being significant, including:

- 1) name of the city or town or other identification of the beacon;
- 2) type of beacon and intensity of the light in thousands of candelas;
- 3) characteristics of the signal;
- 4) operational hours; and
- 5) remarks.

ENR 5. NAVIGATION WARNINGS

ENR 5.1 Prohibited, restricted and danger areas

Description, supplemented by graphic portrayal where appropriate, of prohibited, restricted and danger areas together with information regarding their establishment and activation, including:

- 1) identification, name and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) upper and lower limits; and
- 3) remarks, including time of activity.

Type of restriction or nature of hazard and risk of interception in the event of penetration must be indicated in the remarks column.

ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ)

Description, supplemented by graphic portrayal where appropriate, of established military training areas and military exercises taking place at regular intervals, and established air defence identification zone (ADIZ), including:

- 1) geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) upper and lower limits and system and means of activation announcements together with information pertinent to civil flights and applicable ADIZ procedures; and
- 3) remarks, including time of activity and risk of interception in the event of penetration of ADIZ.

ENR 5.3 Other activities of a dangerous nature and other potential hazards

ENR 5.3.1 Other activities of a dangerous nature

Description, supplemented by charts where appropriate, of activities that constitute a specific or obvious danger to aircraft operation and could affect flights including:

- 1) geographical coordinates in degrees and minutes of centre of area and range of influence;
- 2) vertical limits;
- 3) advisory measures;
- 4) authority responsible for the provision of information; and
- 5) remarks, including time of activity.

ENR 5.3.2 Other potential hazards

Description, supplemented by charts where appropriate, of other potential hazards that could affect flights (e.g. active volcanoes, nuclear power stations, etc.) including:

- 1) geographical coordinates in degrees and minutes of location of potential hazard;
- 2) vertical limits;
- 3) advisory measures;
- 4) authority responsible for the provision of information; and
- 5) remarks.

ENR 5.4 Air navigation obstacles

The list of obstacles affecting air navigation in Area 1 (the entire State territory), including:

- 1) obstacle identification or designation;
- 2) type of obstacle;
- 3) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
- 4) obstacle elevation and height to the nearest metre or foot;
- 5) type and colour of obstacle lighting (if any); and
- 6) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6.

ENR 5.5 Aerial sporting and recreational activities

Brief description, supplemented by graphic portrayal where appropriate, of intensive aerial sporting and recreational activities together with conditions under which they are carried out, including:

- 1) designation and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) vertical limits;
- 3) operator/user telephone number; and
- 4) remarks, including time of activity.

ENR 5.6 Bird migration and areas with sensitive fauna

Description, supplemented by charts of movements of birds associated with migration, including migration routes and permanent resting areas and areas with sensitive fauna.

ENR 6. EN-ROUTE CHARTS

The requirement is for the En-route Chart — International Civil Aviation Organisation and index charts to be included in this section.

PART 3 — AERODROMES (AD)

If an aeronautical information publication is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of aeronautical information publication Amendments, record of aeronautical information publication Supplements, checklist of aeronautical information publication pages and list of current hand amendments must be included in each volume. In the case of an aeronautical information publication being published as one volume, the annotation “not applicable” must be entered against each of the above subsections.

AD 0.6 Table of contents to Part 3

A list of sections and subsections contained in Part 3 — Aerodromes (AD).

AD 1. AERODROMES/HELIPORTS — INTRODUCTION

AD 1.1 Aerodrome/heliport availability and conditions of use

AD 1.1.1 General conditions

Brief description of the State’s designated authority responsible for aerodromes and heliports, including:

1) the general conditions under which aerodromes/heliports and associated facilities are available for use; and

2) a statement concerning the International Civil Aviation Organisation documents on which the services are based and a reference to the aeronautical information publication location where differences, if any, are listed.

AD 1.1.2 Use of military air bases

Regulations and procedures, if any, concerning civil use of military air bases.

AD 1.1.3 Low visibility procedures (LVP)

The general conditions under which the low visibility procedures applicable to Cat II/III operations at aerodromes, if any, are applied.

AD 1.1.4 Aerodrome operating minima

Details of aerodrome operating minima applied by the State.

AD 1.1.5 Other information

If applicable, other information of a similar nature.

AD 1.2 Rescue and firefighting services and snow plan

AD 1.2.1 Rescue and firefighting services

Brief description of rules governing the establishment of rescue and firefighting services at aerodromes and heliports available for public use together with an indication of rescue and firefighting categories established by a State.

AD 1.3 Index to aerodromes and heliports

A list, supplemented by graphic portrayal, of aerodromes and heliports within a State, including:

1) aerodrome/heliport name and International Civil Aviation Organisation location indicator;

2) type of traffic permitted to use the aerodrome/heliport (international/national, IFR/VFR, scheduled/non-scheduled, general aviation, military and other); and

3) reference to aeronautical information publication, Part 3 subsection in which aerodrome/heliport details are presented.

AD 1.4 Grouping of aerodromes/heliports

Brief description of the criteria applied by the State in grouping aerodromes/heliports for production/distribution/provision of information purposes (e.g. international/national; primary/secondary; major/other; civil/military; etc.).

AD 1.5 Status of certification of aerodromes

A list of aerodromes in the State, indicating the status of certification, including:

- 1) aerodrome name and International Civil Aviation Organisation location indicator;
- 2) date and, if applicable, validity of certification; and
- 3) remarks, if any.

AD 2. AERODROMES

Note.—**** is to be replaced by the relevant International Civil Aviation Organisation location indicator.

**** AD 2.1 Aerodrome location indicator and name

The requirement is for the International Civil Aviation Organisation location indicator allocated to the aerodrome and the name of aerodrome. An International Civil Aviation Organisation location indicator must be an integral part of the referencing system applicable to all subsections in section AD 2.

**** AD 2.2 Aerodrome geographical and administrative data

The requirement is for aerodrome geographical and administrative data including:

- 1) aerodrome reference point (geographical coordinates in degrees, minutes and seconds) and its site;
- 2) direction and distance of aerodrome reference point from centre of the city or town which the aerodrome serves;
- 3) aerodrome elevation to the nearest metre or foot, and reference temperature;
- 4) where appropriate, geoid undulation at the aerodrome elevation position to the nearest metre or foot;
- 5) magnetic variation to the nearest degree, date of information and annual change;
- 6) name of aerodrome operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
- 7) types of traffic permitted to use the aerodrome (IFR/VFR); and
- 8) remarks.

**** AD 2.3 Operational hours

Detailed description of the hours of operation of services at the aerodrome, including:

- 1) aerodrome operator;
- 2) customs and immigration;
- 3) health and sanitation;
- 4) AIS briefing office;

- 5) ATS reporting office;
- 6) MET briefing office;
- 7) air traffic service;
- 8) fuelling;
- 9) handling;
- 10) security;
- 11) de-icing; and
- 12) remarks.

**** AD 2.4 Handling services and facilities

Detailed description of the handling services and facilities available at the aerodrome, including:

- 1) cargo-handling facilities;
- 2) fuel and oil types;
- 3) fuelling facilities and capacity;
- 4) de-icing facilities;
- 5) hangar space for visiting aircraft;
- 6) repair facilities for visiting aircraft; and
- 7) remarks.

**** AD 2.5 Passenger facilities

Passenger facilities available at the aerodrome, provided as a brief description or a reference to other information sources such as a website including:

- 1) hotel(s) at or in the vicinity of aerodrome;
- 2) restaurant(s) at or in the vicinity of aerodrome;
- 3) transportation possibilities;
- 4) medical facilities;
- 5) bank and post office at or in the vicinity of aerodrome;
- 6) tourist office; and
- 7) remarks.

**** AD 2.6 Rescue and firefighting services

Detailed description of the rescue and firefighting services and equipment available at the aerodrome, including:

- 1) aerodrome category for firefighting;
- 2) rescue equipment;
- 3) capability for removal of disabled aircraft; and
- 4) remarks.

****** AD 2.7 Seasonal availability — clearing**

Detailed description of the equipment and operational priorities established for the clearance of aerodrome movement areas, including:

- 1) type(s) of clearing equipment;
- 2) clearance priorities; and
- 3) remarks.

****** AD 2.8 Aprons, taxiways and check locations/positions data**

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:

- 1) designation, surface and strength of aprons;
- 2) designation, width, surface and strength of taxiways;
- 3) location and elevation to the nearest metre or foot of altimeter checkpoints;
- 4) location of VOR checkpoints;
- 5) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- 6) remarks.

If check locations/positions are presented on an aerodrome chart, a note to that effect must be provided under this subsection.

****** AD 2.9 Surface movement guidance and control system and markings**

Brief description of the surface movement guidance and control system and runway and taxiway markings, including:

- 1) use of aircraft stand identification signs, taxiway guide lines and visual docking/parking guidance system at aircraft stands;
- 2) runway and taxiway markings and lights;
- 3) stop bars (if any); and
- 4) remarks.

****** AD 2.10 Aerodrome obstacles**

Detailed description of obstacles, including:

- 1) obstacles in Area 2:
 - a) obstacle identification or designation;
 - b) type of obstacle;
 - c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
 - d) obstacle elevation and height to the nearest metre or foot;
 - e) obstacle marking, and type and colour of obstacle lighting (if any);
 - f) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6;
- 1) and

- g) NIL indication, if appropriate.
- 2) the absence of an Area 2 data set for the aerodrome is to be clearly stated and obstacle data are to be provided for:
 - a) obstacles that penetrate the obstacle limitation surfaces;
 - b) obstacles that penetrate the take-off flight path area obstacle identification surface; and
 - c) other obstacles assessed as being hazardous to air navigation.
- 3) indication that information on obstacles in Area 3 is not provided, or if provided:
 - a) obstacle identification or designation;
 - b) type of obstacle;
 - c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
 - d) obstacle elevation and height to the nearest tenth of a metre or tenth of a foot;
 - e) obstacle marking, and type and colour of obstacle lighting (if any);
 - f) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6; and
 - g) NIL indication, if appropriate.

**** AD 2.11 Meteorological information provided

Detailed description of meteorological information provided at the aerodrome and an indication of which meteorological office is responsible for the service enumerated, including:

- 1) name of the associated meteorological office;
- 2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- 3) office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts;
- 4) availability of the trend forecasts for the aerodrome, and interval of issuance;
- 5) information on how briefing and/or consultation is provided;
- 6) types of flight documentation supplied and language(s) used in flight documentation;
- 7) charts and other information displayed or available for briefing or consultation;
- 8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
- 9) the air traffic services unit(s) provided with meteorological information; and
- 10) additional information (e.g. concerning any limitation of service, etc.).

**** AD 2.12 Runway physical characteristics

Detailed description of runway physical characteristics, for each runway, including:

- 1) designations;

- 2) true bearings to one-hundredth of a degree;
- 3) dimensions of runways to the nearest metre or foot;
- 4) strength of pavement (PCN and associated data) and surface of each runway and associated stopways;
- 5) geographical coordinates in degrees, minutes, seconds and hundredths of seconds for each threshold and runway end and, where appropriate, geoid undulation of:
 - thresholds of a non-precision approach runway to the nearest metre or foot;
 and
 - thresholds of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
- 6) elevations of:
 - thresholds of a non-precision approach runway to the nearest metre or foot;
 and
 - thresholds and the highest elevation of the touchdown zone of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
- 7) slope of each runway and associated stopways;
- 8) dimensions of stopway (if any) to the nearest metre or foot;
- 9) dimensions of clearway (if any) to the nearest metre or foot;
- 10) dimensions of strips;
- 11) dimensions of runway end safety areas;
- 12) location (which runway end) and description of arresting system (if any);
- 13) the existence of an obstacle-free zone; and
- 14) remarks.

**** AD 2.13 Declared distances

Detailed description of declared distances to the nearest metre or foot for each direction of each runway, including:

- 1) runway designator;
- 2) take-off run available;
- 3) take-off distance available, and if applicable, alternative reduced declared distances;
- 4) accelerate-stop distance available;
- 5) landing distance available; and
- 6) remarks, including runway entry or start point where alternative reduced declared distances have been declared.

If a runway direction cannot be used for take-off or landing, or both, because it is operationally forbidden, then this must be declared and the words “not usable” or the abbreviation “NU” entered (Annex 14, Volume I, Attachment A, Section 3).

**** AD 2.14 Approach and runway lighting

Detailed description of approach and runway lighting, including:

- 1) runway designator;
- 2) type, length and intensity of approach lighting system;

- 3) runway threshold lights, colour and wing bars;
- 4) type of visual approach slope indicator system;
- 5) length of runway touchdown zone lights;
- 6) length, spacing, colour and intensity of runway centre line lights;
- 7) length, spacing, colour and intensity of runway edge lights;
- 8) colour of runway end lights and wing bars;
- 9) length and colour of stopway lights; and
- 10) remarks.

**** AD 2.15 Other lighting, secondary power supply

Description of other lighting and secondary power supply, including:

- 1) location, characteristics and hours of operation of aerodrome beacon/identification beacon (if any);
- 2) location and lighting (if any) of anemometer/landing direction indicator;
- 3) taxiway edge and taxiway centre line lights;
- 4) secondary power supply including switch-over time; and
- 5) remarks.

**** AD 2.16 Helicopter landing area

Detailed description of helicopter landing area provided at the aerodrome, including:

- 1) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of touchdown and lift-off (TLOF) or of each threshold of final approach and take-off (FATO) area:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 2) TLOF and/or FATO area elevation:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 3) TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;
- 4) true bearings to one-hundredth of a degree of FATO;
- 5) declared distances available, to the nearest metre or foot;
- 6) approach and FATO lighting; and
- 7) remarks.

**** AD 2.17 Air traffic services airspace

Detailed description of air traffic services (ATS) airspace organized at the aerodrome, including:

- 1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- 2) vertical limits;

- 3) airspace classification;
- 4) call sign and language(s) of the ATS unit providing service;
- 5) transition altitude;
- 6) hours of applicability; and
- 7) remarks.

**** AD 2.18 Air traffic services communication facilities

Detailed description of air traffic services communication facilities established at the aerodrome, including:

- 1) service designation;
- 2) call sign;
- 3) channel(s);
- 4) SATVOICE number(s), if available;
- 5) logon address, as appropriate;
- 6) hours of operation; and
- 7) remarks.

**** AD 2.19 Radio navigation and landing aids

Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including:

- 1) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basic GNSS, SBAS, and GBAS and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
- 2) identification, if required;
- 3) frequency(ies), channel number(s), service provider, and reference path identifier(s) (RPI), as appropriate;
- 4) hours of operation, as appropriate;
- 5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- 6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft), elevation of GBAS reference point to the nearest metre or foot, and the ellipsoid height of the point to the nearest metre or foot. For SBAS, the ellipsoid height of the landing threshold point (LTP) or the fictitious threshold point (FTP) to the nearest metre or foot;
- 7) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
- 8) remarks.

When the same aid is used for both en-route and aerodrome purposes, a description must also be given in section ENR 4. If the ground-based augmentation system (GBAS) serves more than one aerodrome, description of the aid must be provided under each aerodrome.

If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

**** AD 2.20 Local aerodrome regulations

Detailed description of regulations applicable to the use of the aerodrome including the acceptability of training flights, nonradio and microlight aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

**** AD 2.21 Noise abatement procedures

Detailed description of noise abatement procedures established at the aerodrome.

**** AD 2.22 Flight procedures

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization at the aerodrome. When established, detailed description of the low visibility procedures at the aerodrome, including:

- 1) runway(s) and associated equipment authorized for use under low visibility procedures;
 - 2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
 - 3) description of ground marking/lighting for use under low visibility procedures;
- and
- 4) remarks.

**** AD 2.23 Additional information

Additional information at the aerodrome, such as an indication of bird concentrations at the aerodrome, together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

**** AD 2.24 Charts related to an aerodrome

The requirement is for charts related to an aerodrome to be included in the following order:

- 1) Aerodrome/Heliport Chart — International Civil Aviation Organisation;
- 2) Aircraft Parking/Docking Chart — International Civil Aviation Organisation;
- 3) Aerodrome Ground Movement Chart — International Civil Aviation Organisation;
- 4) Aerodrome Obstacle Chart — International Civil Aviation Organisation Type A (for each runway);
- 5) Aerodrome Terrain and Obstacle Chart — International Civil Aviation Organisation (Electronic);
- 6) Precision Approach Terrain Chart — International Civil Aviation Organisation (precision approach Cat II and III runways);
- 7) Area Chart — International Civil Aviation Organisation (departure and transit routes);

- 8) Standard Departure Chart — Instrument — International Civil Aviation Organisation;
- 9) Area Chart — International Civil Aviation Organisation (arrival and transit routes);
- 10) Standard Arrival Chart — Instrument — International Civil Aviation Organisation;
- 11) ATC Surveillance Minimum Altitude Chart — International Civil Aviation Organisation;
- 12) Instrument Approach Chart — International Civil Aviation Organisation (for each runway and procedure type);
- 13) Visual Approach Chart — International Civil Aviation Organisation; and
- 14) bird concentrations in the vicinity of the aerodrome.

If some of the charts are not produced, a statement to this effect must be given in section GEN 3.2, Aeronautical charts.

AD 3. HELIPORTS

When a helicopter landing area is provided at the aerodrome, associated data must be listed only under **** AD 2.16.

**** is to be replaced by the relevant International Civil Aviation Organisation location indicator.

**** AD 3.1 Heliport location indicator and name

The requirement is for the International Civil Aviation Organisation location indicator assigned to the heliport and the name of heliport. An International Civil Aviation Organisation location indicator must be an integral part of the referencing system applicable to all subsections in section AD 3.

**** AD 3.2 Heliport geographical and administrative data

The requirement is for heliport geographical and administrative data, including:

- 1) heliport reference point (geographical coordinates in degrees, minutes and seconds) and its site;
- 2) direction and distance of heliport reference point from centre of the city or town which the heliport serves;
- 3) heliport elevation to the nearest metre or foot, and reference temperature;
- 4) where appropriate, geoid undulation at the heliport elevation position to the nearest metre or foot;
- 5) magnetic variation to the nearest degree, date of information and annual change;
- 6) name of heliport operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
- 7) types of traffic permitted to use the heliport (IFR/VFR); and
- 8) remarks.

****** AD 3.3 Operational hours**

Detailed description of the hours of operation of services at the heliport, including:

1. heliport operator;
2. customs and immigration;
3. health and sanitation;
4. aeronautical information service briefing office;
5. Air Traffic Service reporting office;
6. MET briefing office;
7. air traffic service;
8. fuelling;
9. handling;
10. security;
11. de-icing; and
12. remarks.

****** AD 3.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the heliport, including:

- 1) cargo-handling facilities;
- 2) fuel and oil types;
- 3) fuelling facilities and capacity;
- 4) de-icing facilities;
- 5) hangar space for visiting helicopter;
- 6) repair facilities for visiting helicopter; and
- 7) remarks.

****** AD 3.5 Passenger facilities**

Passenger facilities available at the heliport, provided as a brief description or as a reference to other information sources such as a website, including:

- 1) hotel(s) at or in the vicinity of the heliport;
- 2) restaurant(s) at or in the vicinity of the heliport;
- 3) transportation possibilities;
- 4) medical facilities;
- 5) bank and post office at or in the vicinity of the heliport;
- 6) tourist office; and
- 7) remarks.

****** AD 3.6 Rescue and firefighting services**

Detailed description of the rescue and firefighting services and equipment available at the heliport, including:

- 1) heliport category for firefighting;
- 2) rescue equipment;

- 3) capability for removal of disabled helicopter; and
- 4) remarks.

**** AD 3.7 Seasonal availability — clearing

Detailed description of the equipment and operational priorities established for the clearance of heliport movement areas, including:

- 1) type(s) of clearing equipment;
- 2) clearance priorities; and
- 3) remarks.

**** AD 3.8 Aprons, taxiways and check locations/positions data

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:

- 1) designation, surface and strength of aprons, helicopter stands;
- 2) designation, width, and surface type of helicopter ground taxiways;
- 3) width and designation of helicopter air taxiway and air transit route;
- 4) location and elevation to the nearest metre or foot of altimeter checkpoints;
- 5) location of VOR checkpoints;
- 6) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- 7) remarks.

If check locations/positions are presented on a heliport chart, a note to that effect must be provided under this subsection.

**** AD 3.9 Markings and markers

Brief description of final approach and take-off area and taxiway markings and markers, including:

- 1) final approach and take-off markings;
- 2) taxiway markings, air taxiway markers and air transit route markers; and
- 3) remarks.

**** AD 3.10 Heliport obstacles

Detailed description of obstacles, including:

- 1) obstacle identification or designation;
- 2) type of obstacle;
- 3) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
- 4) obstacle elevation and height to the nearest metre or foot;
- 5) obstacle marking, and type and colour of obstacle lighting (if any);

6) if appropriate, an indication that the list of obstacles is available in electronic form, and a reference to GEN 3.1.6; and

7) NIL indication, if appropriate.

**** AD 3.11 Meteorological information provided

Detailed description of meteorological information provided at the heliport and an indication of which meteorological office is responsible for the service enumerated, including:

- 1) name of the associated meteorological office;
- 2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- 3) office responsible for preparation of TAFs, and periods of validity of the forecasts;
- 4) availability of the trend forecasts for the heliport, and interval of issuance;
- 5) information on how briefing and/or consultation is provided;
- 6) type of flight documentation supplied and language(s) used in flight documentation;
- 7) charts and other information displayed or available for briefing or consultation;
- 8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
- 9) the air traffic services unit(s) provided with meteorological information; and
- 10) additional information (e.g. concerning any limitation of service, etc.).

**** AD 3.12 Heliport data

Detailed description of heliport dimensions and related information, including:

- 1) heliport type — surface-level, elevated or helideck;
- 2) touchdown and lift-off (TLOF) area dimensions to the nearest metre or foot;
- 3) true bearings to one-hundredth of a degree of final approach and take-off (FATO) area;
- 4) dimensions to the nearest metre or foot of FATO, and surface type;
- 5) surface and bearing strength in tonnes (1 000 kg) of TLOF;
- 6) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of TLOF or of each threshold of FATO:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot.
- 7) TLOF and/or FATO slope and elevation:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot.

- 8) dimensions of safety area;
- 9) dimensions, to the nearest metre or foot, of helicopter clearway;
- 10) the existence of an obstacle-free sector; and
- 11) remarks.

**** AD 3.13 Declared distances

Detailed description of declared distances to the nearest metre or foot, where relevant for a heliport, including:

- 1) take-off distance available, and if applicable, alternative reduced declared distances;
- 2) rejected take-off distance available;
- 3) landing distance available; and
- 4) remarks, including entry or start point where alternative reduced declared distances have been declared.

**** AD 3.14 Approach and FATO lighting

Detailed description of approach and FATO lighting, including:

- 1) type, length and intensity of approach lighting system;
- 2) type of visual approach slope indicator system;
- 3) characteristics and location of FATO area lights;
- 4) characteristics and location of aiming point lights;
- 5) characteristics and location of TLOF lighting system; and
- 6) remarks.

**** AD 3.15 Other lighting, secondary power supply

Description of other lighting and secondary power supply, including:

- 1) location, characteristics and hours of operation of heliport beacon;
- 2) location and lighting of wind direction indicator (WDI);
- 3) taxiway edge and taxiway centre line lights;
- 4) secondary power supply including switch-over time; and
- 5) remarks.

**** AD 3.16 Air traffic services airspace

Detailed description of air traffic services (ATS) airspace organized at the heliport, including:

- 1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- 2) vertical limits;
- 3) airspace classification;
- 4) call sign and language(s) of ATS unit providing service;

- 5) transition altitude;
- 6) hours of applicability; and
- 7) remarks.

**** AD 3.17 Air traffic services communication facilities

Detailed description of air traffic services communication facilities established at the heliport, including:

- 1) service designation;
- 2) call sign;
- 3) frequency(ies);
- 4) hours of operation; and
- 5) remarks.

**** AD 3.18 Radio navigation and landing aids

Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the heliport, including:

- 1) type of aids, magnetic variation (for VOR, station declination used for technical line-up of the aid) to the nearest degree, and type of operation for ILS, MLS, basic GNSS, SBAS and GBAS;
- 2) identification, if required;
- 3) frequency(ies), as appropriate;
- 4) hours of operation, as appropriate;
- 5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- 6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft); and
- 7) remarks.

When the same aid is used for both en-route and heliport purposes, a description must also be given in section ENR 4. If the ground-based augmentation system (GBAS) serves more than one heliport, description of the aid must be provided under each heliport. If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority must be indicated in the remarks column. Facility coverage must be indicated in the remarks column.

**** AD 3.19 Local heliport regulations

Detailed description of regulations applicable to the use of the heliport, including the acceptability of training flights, nonradio and microlight aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

**** AD 3.20 Noise abatement procedures

Detailed description of noise abatement procedures established at the heliport.

**** AD 3.21 Flight procedures

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization established at the heliport. When established, detailed description of the low visibility procedures at the heliport, including:

- 1) touchdown and lift-off (TLOF) area(s) and associated equipment authorized for use under low visibility procedures;
- 2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
- 3) description of ground marking/lighting for use under low visibility procedures; and
- 4) remarks.

**** AD 3.22 Additional information

Additional information about the heliport, such as an indication of bird concentrations at the heliport together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

**** AD 3.23 Charts related to a heliport

The requirement is for charts related to a heliport to be included in the following order:

- 1) Aerodrome/Heliport Chart — International Civil Aviation Organisation;
- 2) Area Chart — International Civil Aviation Organisation (departure and transit routes);
- 3) Standard Departure Chart — Instrument — International Civil Aviation Organisation;
- 4) Area Chart — International Civil Aviation Organisation (arrival and transit routes);
- 5) Standard Arrival Chart — Instrument — International Civil Aviation Organisation;
- 6) ATC Surveillance Minimum Altitude Chart — International Civil Aviation Organisation;
- 7) Instrument Approach Chart — International Civil Aviation Organisation (for each procedure type);
- 8) Visual Approach Chart — International Civil Aviation Organisation; and
- 9) bird concentrations in the vicinity of heliport.

If some of the charts are not produced, a statement to this effect must be given in section GEN 3.2, Aeronautical charts.

SECOND SCHEDULE

(rr. 6(d)(e), 7(e), 18,19 & 24(6)(a))

AERONAUTICAL DATA PUBLICATION RESOLUTION AND INTEGRITY
CLASSIFICATION

Table S6-1. Latitude and Longitude

LATTUDE AND LONGITUDE	PUBLICATION RESOLUTION	INTEGRITY CLASSIFICATION
Flight information region boundary points.	1min	routine
P, R, D area boundary points (outside CTA/CTR boundaries)	1min	routine
P, R, D area boundary points (inside CTA/CTZ boundaries).	1sec	essential
CTA/CTR boundary points.	1sec	essential
En-route NAVAIDS, intersections and waypoints, and holding, and STAR/SID points	1sec	essential
Obstacles in Area 1 (the entire State territory).	sec	routine
Aerodrome/ heliport reference point.	1sec	routine
NAVAIDS located at the aerodrome/heliport.	1/10sec	essential
Obstacles in Area 3.	1/10sec	essential
Obstacles in Area 2.	1/10sec	essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure.	1/10sec	essential
Runway threshold	1/100sec	critical
Runway end	1/100sec	critical
Runway holding position.	1/100sec	critical
Taxiway centre line/ parking guidance line points.	1/100sec	essential
Taxiway intersection marking line.	1/100sec	essential
Exit guidance line.	1/100sec	essential
Aircraft stand points/INS checkpoints.	1/100sec	routine
Geometric centre of TLOF or FATO thresholds, heliports.	1/100sec	critical
Apron boundaries (polygon)	1/10sec	Routine
De-icing/anti-icing facility (polygon)	1/10sec	Routine

Table S6-2. Elevation/ altitude/ height

Elevation/altitude/height	PUBLICATION RESOLUTION	INTEGRITY CLASSIFICATION
Aerodrome/heliport elevation	1m or 1ft	essential
WGS84 geoid undulation at aerodrome/heliport elevation position.	1m or 1ft	essential
GBAS reference point	1m or 1ft	essential
Heliport crossing height, PinS approaches..	1m or 1ft	essential
Runway or FATO threshold, non-precision approaches.	1m or 1ft	essential
world geodetic system – 1984geoid undulation at runway or FATO threshold, TLOF geometric centre, non-precision approaches	1m or 1ft	essential
Runway or FATO threshold, precision approaches.	0.1m or 0.1ft	critical
world geodetic system – 1984geoid undulation at runway or FATO threshold, TLOF geometric centre, precision approaches	0.1m or 0.1ft	critical
Threshold crossing height (Reference datum height) precision approaches	0.1m or 0.1ft	critical
Obstacles in Area 2.	1m or 1ft	essential
Obstacles in Area 3.	1m or 1ft	essential
Obstacles in Area 1 (the entire state territory).	1m or 1ft	routine
Distance measuring Equipment/precision (DME/P)	3m (10ft)	essential
Distance measuring Equipment (DME)	30m (100ft)	essential
Minimum altitudes	50m or 100ft	routine

Table S6-3 Declination and Magnetic variation

DECLINATION/VARIATION	PUBLICATION RESOLUTION	INTEGRITY CLASSIFICATION
VHF NAVAID station used for technical line-up	1 degree	essential
NDB NAVAID magnetic variation	1 degree	essential
Aerodrome/heliport magnetic variation	1 degree	essential
ILS/localizer antenna magnetic variation	1 degree	essential
MLS azimuth antenna magnetic variation	1 degree	essential

Table S6-4 Bearing

BEARING	PUBLICATION RESOLUTION	INTEGRITY CLASSIFICATION
Airway segments.	1 degree	routine
Bearing used for the formation of an en route and of a terminal fix	1/10 degree	routine
Terminal arrival/departure route segment	1 degree	routine
Bearing used for the formation of an instrument approach procedure fix	1/100 degree	essential
ILS localizer alignment (True)	1/100 degree	essential
MLS zero azimuth (True)	1/100 degree	essential
Runway and FATO bearing (True)	1/100 degree	routine

Table S6-5 Length/Distance/Dimension

LENGTH/DISTANCE/DIMENSION	PUBLICATION RESOLUTION	INTEGRITY CLASSIFICATION
Airway Segment Length	1/10KM OR 1/10 NM	routine
Distance Used for The formation of an Enroute Fix	1/10KM OR 1/10 NM	routine
Terminal Arrival/Departure Route Segment	1/100KM OR 1/100 NM	essential
Distance Used For The Formation Of A Terminal And Instrument Approach Procedure Fix	1/100KM OR 1/100 NM	essential
Runway And FATO Length TLOF Dimensions.	1M OR 1FT	critical
Runway Width	1M OR 1FT	essential
Displaced Threshold Distance	1M OR 1FT	routine
Clearway Length and Width	1M OR 1FT	essential
Stopway Length and Width	1M OR 1FT	critical
Landing Distance Available	1M OR 1FT	critical
Take-Off Run Available	1M OR 1FT	critical
Take Distance Available	1M OR 1FT	critical
Accelerate Stop Distance Available	1M OR 1FT	critical
Runway Shoulder Width	1M OR 1FT	essential
Taxiway Width	1M OR 1FT	essential
Taxiway shoulder Width	1M OR 1FT	essential
ILS Localizer antenna-Runway End, Distance	1M OR 1FT	routine
ILS Glide Slope antenna-Threshold, Distance Along Centre Line	1M OR 1FT	routine
ILS ...Marker - Threshold Distance	1M OR 1FT	essential
ILS DME Antenna-Threshold Distance, Along Centre Line.	1M OR 1FT	essential
MLS Azimuth antenna-Runway End, Distance.	1M OR 1FT	routine
MLS Elevation antenna Threshold, Distance Along Centre Line.	1M OR 1FT	routine
MLS DME/P antenna-Threshold Distance Along Centre Line.	1M OR 1FT	essential

THIRD SCHEDULE

(r. 33(1)(a))

Notice To Air Men FORMAT

(see PART VI)

Priority Indicator											→	
Address												
**												
Date and time of filing											→	
Originator's Indicator											** (
Message Series, Number and Identifier												
NOTAM containing new information NOTAMN											
	(series and number/year)											
NOTAM replacing a previous NOTAM NOTAMR.....											
	(series and number/year) (series and number/year of NOTAM to be replaced)											
NOTAM cancelling a previous NOTAM NOTAMC.....										**	
	(series and number/year) (series and number/year of NOTAM to be cancelled)											
Qualifiers												
	FIR	NOTAM Code	Traffic	Purpose	Scope	Lower Limit	Upper Limit	Coordinates, Radius				
Q)												**
Identification of ICAO location indicator in which the facility, airspace or condition reported on is located								A)				→
Period of Validity												
From (date-time group)					B)							→
To (PERM or date-time group)					C)						EST* PERM*	**
Time Schedule (if applicable)					D)						→	
											**	
Text of NOTAM: Plain-language Entry (using ICAO Abbreviations)												
E)												
**												
Lower Limit	F)										→	
Upper Limit	G))**	
Signature												

*Delete as appropriate

INSTRUCTIONS FOR THE COMPLETION OF THE Notice To Air Men FORMAT

1. General

The qualifier line (Item Q) and all identifiers (Items A) to G) inclusive) each followed by a closing parenthesis, as shown in the format, shall be transmitted unless there is no entry to be made against a particular identifier.

2. Notice To Air Men numbering

Each Notice To Air Men shall be allocated a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year (e.g. A0023/03). Each series shall start on 1 January with number 0001.

3. Qualifiers (Item Q)

Item Q) is divided into eight fields, each separated by a stroke. An entry shall be made in each field. Examples of how fields are to be filled are shown in the Aeronautical Information Services Manual (Doc 8126). The definition of the field is as follows:

1) FIR

- (a) If the subject of the information is located geographically within one FIR, the International Civil Aviation Organisation location indicator shall be that of the FIR concerned. When an aerodrome is situated within the overlying FIR of another State, the first field of Item Q) shall contain the code for that overlying FIR (e.g. Q) LFRR/...A) EGJJ); or, if the subject of the information is located geographically within more than one FIR, the FIR field shall be composed of the International Civil Aviation Organisation nationality letters of the State originating the Notice To Air Men followed by "XX". (The location indicator of the overlying UIR shall not be used). The International Civil Aviation Organisation location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.
- (b) If one State issues a Notice To Air Men affecting FIRs in a group of States, the first two letters of the International Civil Aviation Organisation location indicator of the issuing State plus "XX" shall be included. The location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.

2) Notice To Air Men CODE

All Notice To Air Men Code groups contain a total of five letters and the first letter is always the letter Q. The second and third letters identify the subject, and the fourth and fifth letters denote the status or condition of the subject reported upon. The two-letter codes for subjects and conditions are those contained in the PANS-ABC (Doc 8400). For combinations of second and third, and fourth and fifth letters, refer to the Notice To Air Men Selection Criteria contained in Doc 8126 or insert one of the following combinations, as appropriate:

- (a) If the subject is not listed in the Notice To Air Men Code (Doc 8400) or in the Notice To Air Men Selection Criteria (Doc 8126), insert "XX" as the second and third letters (e.g. QXXAK);

- (b) If the condition of the subject is not listed in the Notice To Air Men Code (Doc 8400) or in the Notice To Air Men Selection Criteria (Doc 8126), insert “XX” as the fourth and fifth letters (e.g. QFAXX);
- (c) When a Notice To Air Men containing operationally significant information is issued in accordance with Appendix 4 and Chapter 6 and when it is used to announce the existence of Aeronautical Information Regulation And Control aeronautical information publication Amendments or Supplements, insert “TT” as the fourth and fifth letters of the Notice To Air Men Code;
- (d) When a Notice To Air Men is issued containing a checklist of valid Notice To Air Men, insert “KKKK” as the second, third, fourth and fifth letters; and
- (e) The following fourth and fifth letters of the Notice To Air Men Code shall be used in Notice To Air Men cancellations:

AK = RESUMED NORMAL OPERATION

AL = OPERATIVE (OR RE-OPERATIVE) SUBJECT TO PREVIOUSLY PUBLISHED LIMITATIONS/CONDITIONS

AO = OPERATIONAL

CC = COMPLETED

CN = CANCELLED

HV = WORK COMPLETED

XX = PLAIN LANGUAGE

3) TRAFFIC

I = IFR

V = VFR

K = Notice To Air Men is a checklist

4) PURPOSE

N = Notice To Air Men selected for the immediate attention of flight crew members

B = Notice To Air Men of operational significance selected for PIB entry

O = Notice To Air Men concerning flight operations

M = Miscellaneous Notice To Air Men; not subject for a briefing, but it is available on request

K = Notice To Air Men is a checklist

5) SCOPE

A = Aerodrome

E = En-route

W = Nav Warning

K = Notice To Air Men is a checklist

6) and 7) LOWER/UPPER

LOWER and UPPER limits shall only be expressed in flight levels (FL) and shall express the actual vertical limits of the area of influence without the addition of buffers. In the

case of navigation warnings and airspace restrictions, values entered shall be consistent with those provided under Items F) and G).

If the subject does not contain specific height information, insert “000” for LOWER and “999” for UPPER as default values.

8) COORDINATES, RADIUS

The latitude and longitude accurate to one minute, as well as a three-digit distance figure giving the radius of influence in NM (e.g. 4700N01140E043). Coordinates present approximate centre of circle whose radius encompasses the whole area of influence, and if the Notice To Air Men affects the entire FIR/UIR or more than one FIR/UIR, enter the default value “999” for radius.

4. Item A)

Insert the location indicator as contained in International Civil Aviation Organisation Doc 7910 of the aerodrome or FIR in which the facility, airspace, or condition being reported on is located. More than one FIR/UIR may be indicated when appropriate. If there is no available International Civil Aviation Organisation location indicator, use the International Civil Aviation Organisation nationality letter as given in International Civil Aviation Organisation Doc 7910, Part 2, plus “XX” and followed up in

Item E) by the name, in plain language. If information concerns GNSS, insert the appropriate International Civil Aviation Organisation location indicator allocated for a GNSS element or the common location indicator allocated for all elements of GNSS (except GBAS).

(3) Item B)

For date-time group use a ten-figure group, giving year, month, day, hours and minutes in UTC. This entry is the date-time at which the Notice To Air MenN comes into force. In the cases of Notice To Air MenR and Notice To Air MenC, the date-time group is the actual date and time of the Notice To Air Men origination. The start of a day shall be indicated by “0000”.

(4) Item C)

With the exception of Notice To Air MenC, a date-time group (a ten-figure group giving year, month, day, hours and minutes in UTC) indicating duration of information shall be used unless the information is of a permanent nature in which case the abbreviation “PERM” is inserted instead. The end of a day shall be indicated by “2359” (i.e. do not use “2400”). If the information on timing is uncertain, the approximate duration shall be indicated using a date-time group followed by the abbreviation “EST”. Any Notice To Air Men which includes an “EST” shall be cancelled or replaced before the date-time specified in Item C).

(5) Item D)

If the hazard, status of operation or condition of facilities being reported on will be active in accordance with a specific time and date schedule between the dates-times indicated in Items B) and C), insert such information under Item D). If Item D) exceeds 200 characters, consideration shall be given to providing such information in a separate, consecutive Notice To Air Men.

(6) Item E)

Use decoded Notice To Air Men Code, complemented where necessary by International Civil Aviation Organisation abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language. When Notice To Air Men is selected for international distribution, English text shall be included for those parts expressed in plain

language. This entry shall be clear and concise in order to provide a suitable PIB entry. In the case of Notice To Air MenC, a subject reference and status message shall be included to enable accurate plausibility checks.

(7) Items F) and G)

These items are normally applicable to navigation warnings or airspace restrictions and are usually part of the PIB entry. Insert both lower and upper height limits of activities or restrictions, clearly indicating only one reference datum and unit of measurement. The abbreviations GND or SFC shall be used in Item F) to designate ground and surface respectively. The abbreviation UNL shall be used in Item G) to designate unlimited.

FOURTH SCHEDULE

(r. 33(1)(d))

ASHTAM FORMAT

(see Part VI)

ASHTAM	(SERIAL NUMBER)
(FLIGHT INFORMATION REGION AFFECTED)	A)
(DATE/TIME (UTC) OF ERUPTION)	B)
(VOLCANO NAME AND NUMBER)	C)
(VOLCANO LATITUDE/LONGITUDE OR VOLCANO RADIAL AND DISTANCE FROM NAVAID)	D)
(VOLCANO LEVEL OF ALERT COLOUR CODE, INCLUDING ANY PRIOR LEVEL OF ALERT COLOUR CODE) ³	E)
(EXISTENCE AND HORIZONTAL/VERTICAL EXTENT OF VOLCANIC ASH CLOUD) ⁴	F)
(DIRECTION OF MOVEMENT OF ASH CLOUD) ⁴	G)
(AIR ROUTES OR PORTIONS OF AIR ROUTES AND FLIGHT LEVELS AFFECTED)	H)
(CLOSURE OF AIRSPACE AND/OR AIR ROUTES OR PORTIONS OF AIR ROUTES, AND ALTERNATIVE AIR ROUTES AVAILABLE)	I)
(SOURCE OF INFORMATION)	J)
(PLAIN-LANGUAGE REMARKS)	K)
<p>NOTES:</p> <ol style="list-style-type: none"> 1. See also Appendix 5 regarding addressee indicators used in predetermined distribution systems. 2. *Enter ICAO nationality letter as given in ICAO Doc 7910, Part 2. 3. See paragraph 3.5 below. 4. Advice on the existence, extent and movement of volcanic ash cloud (G) and (H) may be obtained from the Volcanic Ash Advisory Centre(s) responsible for the FIR concerned. 5. Item titles in brackets () not to be transmitted. 	

SIGNATURE OF ORIGINATOR (not for transmission)

INSTRUCTIONS FOR THE COMPLETION OF THE ASHTAM FORMAT

1. General

- 1.1.1 The ASHTAM provides information on the status of activity of a volcano when a change in its activity is, or is expected to be of operational significance. This information is provided using the volcano level of alert colour code given in 3.5 below.
- 1.1.2 In the event of a volcanic eruption producing ash cloud of operational significance, the ASHTAM also provides information on the location, extent and movement of the ash cloud and the air routes and flight levels affected.
- 1.1.3 Issuance of an ASHTAM giving information on a volcanic eruption, in accordance with section 3 below, should not be delayed until complete information A) to K) is available but should be issued immediately following receipt of notification that an eruption has occurred or is expected to occur, or a change in the status of activity of a volcano of operational significance has occurred or is expected to occur, or an ash cloud is reported. In the case of an expected eruption, and hence no ash cloud evident at that time, items A) to E) should be completed and items F) to I) indicated as “not applicable”. Similarly, if a volcanic ash cloud is reported, e.g. by special air-report, but the source volcano is not known at that time, the ASHTAM should be issued initially with items A) to E) indicated as “unknown”, and items F) to K) completed, as necessary, based on the special air-report, pending receipt of further information. In other circumstances, if information for a specific field A) to K) is not available indicate “NIL”.
- 1.1.4 The maximum period of validity of ASHTAM is 24 hours. New ASHTAM must be issued whenever there is a change in the level of alert.

2. Abbreviated heading

- 2.1 Following the usual AFTN communications header, the abbreviated heading “TT AAiiii CCCC MMYGGg (BBB)” is included to facilitate the automatic processing of ASHTAM messages in computer data banks. The explanation of these symbols is:

TT - data designator for ASHTAM = VA;

AA - geographical designator for States, e.g. NZ - New Zealand (see Location Indicators (Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);

iiii - ASHTAM serial number in a four-figure group;

CCCC - four-letter location indicator of the flight information region concerned (see Location Indicators (Doc 7910), Part 5, addresses of centres in charge of FIR/UIR);

MMYYGGg - date/time of report, whereby;

MM - month, e.g. January - 01, December - 12;

YY - day of the month;

GGg - time in hours (GG) and minutes (g) coordinated universal time;

(BBB) - Optional group for correction to an ASHTAM message previously disseminated with the same serial number - COR.

1. Content of ASHTAM

- 3.1 Item A— Flight information region affected, plain-language equivalent of the location indicator given in the abbreviated heading, in this example “Auckland Oceanic FIR”.

- 3.2 Item B — Date and time (coordinated universal time) of first eruption.
- 3.3 Item C — Name of volcano, and number of volcano as listed in the International Civil Aviation Organisation Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), Appendix H, and on the World Map of Volcanoes and Principal Aeronautical Features.
- 3.4 Item D — Latitude/Longitude of the volcano in whole degrees or radial and distance of volcano from NAVAID (as listed in the International Civil Aviation Organisation Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), Appendix H, and on the World Map of Volcanoes and Principal Aeronautical Features).
- 3.5 Item E — Colour code for level of alert indicating volcanic activity, including any previous level of alert colour code follows:

Level of alert colour code	Status of activity of volcano
GREEN	Volcano is in normal, non-eruptive state.
ALERT	or, after a change from a higher alert level: Volcanic activity considered to have ceased, and volcano reverted to its normal, non-eruptive state.
YELLOW	Volcano is experiencing signs of elevated unrest above known background levels.
ALERT	or, after a change from higher alert level: Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.
ORANGE	Volcano is exhibiting heightened unrest with increased likelihood of eruption.
ALERT	or, Volcanic eruption is underway with no or minor ash emission [specify ash-plume height if possible].
RED	Eruption is forecasted to be imminent with significant emission of ash into the atmosphere likely.
ALERT	or, Eruption is underway with significant emission of ash into the atmosphere [specify ash-plume height if possible]

The colour code for the level of alert indicating the status of activity of the volcano and any change from a previous status of activity shall be provided to the area control centre by the responsible vulcanological agency in the State concerned, e.g. “RED ALERT FOLLOWING YELLOW” OR “GREEN ALERT FOLLOWING ORANGE”.

- 3.6 Item F — If volcanic ash cloud of operational significance is reported, indicate the horizontal extent and base/top of the ash cloud using latitude/longitude (in whole degrees) and altitudes in thousands of metres (feet) and/or radial and distance from source volcano. Information initially may be based only on special air-report, but subsequent information may be more detailed based on advice from the responsible meteorological watch office and/or volcanic ash advisory centre.
- 3.7 Item G — Indicate forecast direction of movement of the ash cloud at selected levels based on advice from the responsible meteorological watch office and/or volcanic ash advisory centre.
- 3.8 Item H — Indicate air routes and portions of air routes and flight levels affected, or expected to become affected.
- 3.9 Item I— Indicate closure of airspace, air routes or portions of air routes, and availability of alternative routes.
- 3.10 Item J — Source of the information, e.g. “special air-report” or “vulcanological agency”, etc. The source of information should always be indicated, whether an eruption has actually occurred or ash cloud reported, or not.
- 3.11 Item K — Include in plain language any operationally significant information additional to the foregoing.

FIFTH SCHEDULE

(r.35(a)&(e))

INFORMATION TO BE NOTIFIED BY AERONAUTICAL INFORMATION REGULATION AND CONTROL

(see Part VII)

PART I

1. The establishment and withdrawal of, and premeditated significant changes (including operational trials) to:

1.1. Limits (horizontal and vertical), regulations and procedures applicable to:

- a) flight information regions;
- b) control areas;
- c) control zones;
- d) advisory areas;
- e) ATS routes;
- f) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and ADIZ;
- g) permanent areas or routes or portions thereof where the possibility of interception exists.

- 1.2. Positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities.
- 1.3. Holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures.
- 1.4. Transition levels, transition altitudes and minimum sector altitudes.
- 1.5. Meteorological facilities (including broadcasts) and procedures.
- 1.6. Runways and stopways.
- 1.7. Taxiways and aprons.
- 1.8. Aerodrome ground operating procedures (including low visibility procedures).
- 1.9. Approach and runway lighting.
- 1.10. Aerodrome operating minima if published by a State.

PART 2

2. The establishment and withdrawal of, and premeditated significant changes to:
 - 2.1 Position, height and lighting of navigational obstacles;
 - 2.2 Hours of service of aerodromes, facilities and services;
 - 2.3 Customs, immigration and health services;
 - 2.4 Temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft; and
 - 2.5 Temporary areas or routes or portions thereof where the possibility of interception exists.

PART 3

3. The establishment of, and premeditated major changes to:
 - 3.1 New aerodromes for international IFR operations;
 - 3.2 New runways for IFR operations at international aerodromes;
 - 3.3 Design and structure of the air traffic services route network;
 - 3.4 Design and structure of a set of terminal procedures (including change of procedure bearings due to magnetic variation change);
 - 3.5 Circumstances listed in Part 1 if the entire State or any significant portion thereof is affected or if cross-border coordination is required.

SIXTH SCHEDULE

(r. 37)

PREDETERMINED DISTRIBUTION SYSTEM FOR Notice To Air Men

(see PART VI)

1. The predetermined distribution system provides for incoming Notice To Air Men (including SNOWTAM and ASHTAM) to be channelled through the AFS direct to designated addressees predetermined by the receiving country concerned while concurrently being routed to the international Notice To Air Men office for checking and control purposes.

2. The addressee indicators for those designated addressees are constituted as follows:

1) First and second letters:

The first two letters of the location indicator for the AFS communication centre associated with the relevant international Notice To Air Men office of the receiving country.

2) Third and fourth letters:

3) The letters "ZZ" indicating a requirement for special distribution.

4) Fifth letter:

The fifth letter differentiating between Notice To Air Men (letter "N"), SNOWTAM (letter "S"), and ASHTAM (letter "V").

5) Sixth and seventh letters:

The sixth and seventh letters, each taken from the series A to Z and denoting the national and/or international distribution list(s) to be used by the receiving AFS centre.

6) Eighth letter:

The eighth position letter shall be the filler letter "X" to complete the eight-letter addressee indicator.

States are to inform the States from which they receive Notice To Air Men of the sixth and seventh letters to be used under different circumstances to ensure proper routing.

SEVENTH SCHEDULE

(rr. 45(d)(iv)&(v), 46(f)&(g) and 47(d)&(e))

TERRAIN AND OBSTACLE DATA REQUIREMENTS

(see PART XI)

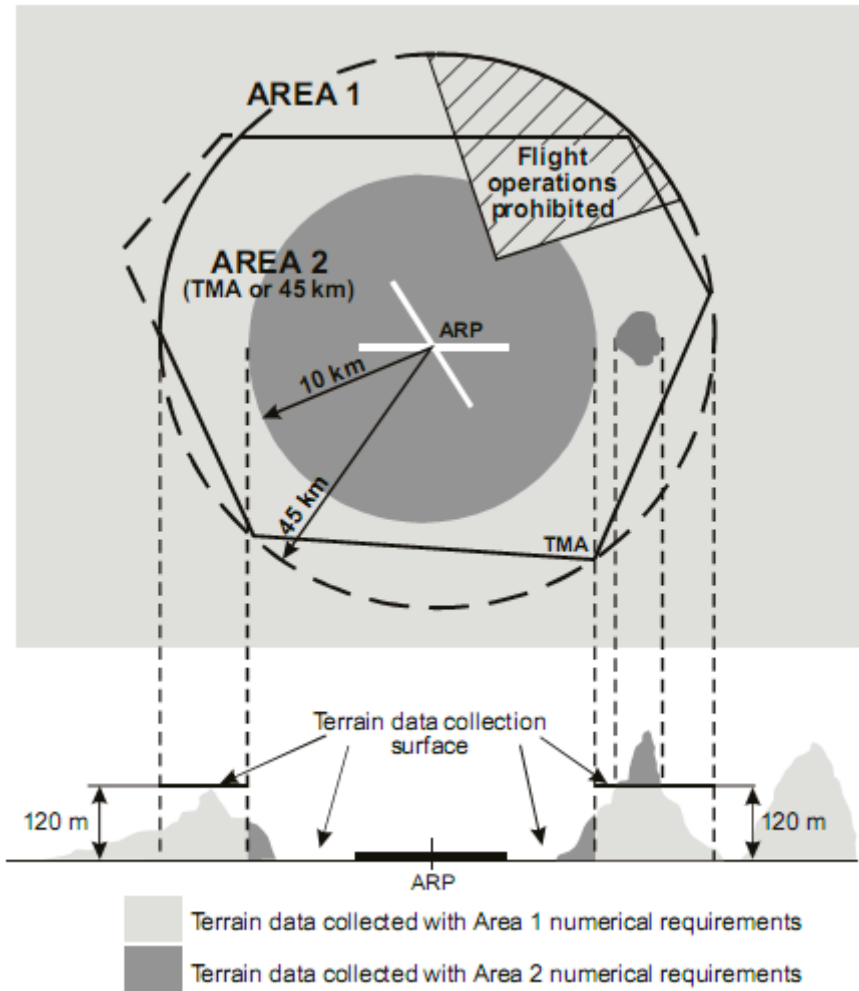


Figure S7-1. Terrain data collection surfaces — Area 1 and Area 2

1. Within the area covered by a 10-km radius from the ARP, terrain data shall comply with the Area 2 numerical requirements.
2. In the area between 10 km and the TMA boundary or 45-km radius (whichever is smaller), data on terrain that penetrates the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 2 numerical requirements.
3. In the area between 10 km and the TMA boundary or 45-km radius (whichever is smaller), data on terrain that does not penetrate the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 1 numerical requirements.
4. In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, terrain data shall comply with the Area 1 numerical requirements.

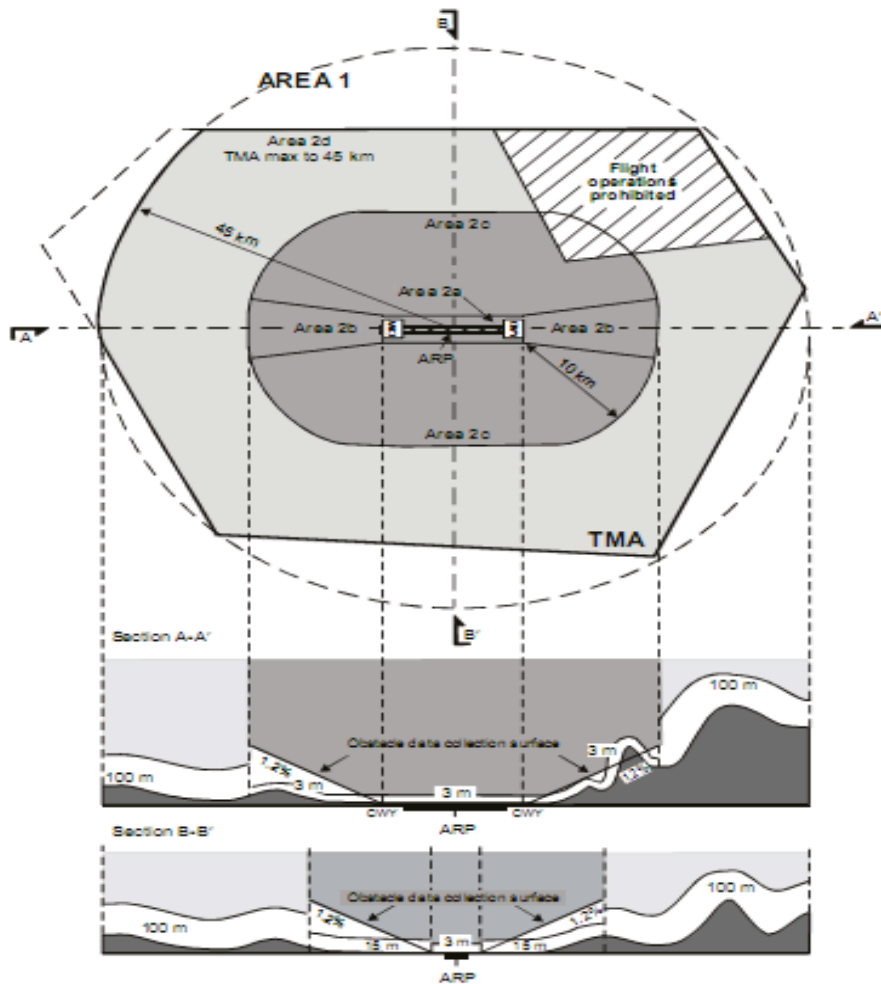


Figure S7-2. Obstacle data collection surfaces — Area 1 and Area 2

- (a) Obstacle data shall be collected and recorded in accordance with the Area 2 numerical requirements specified in Table S7-2:
- (b) Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have height of 3 m 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;
- (c) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15% to each side. The Area 2b obstacle collection surface has a 1.2% slope extending from the ends of Area 2a at the elevation of the runway end in the direction of departure, with a length of 10 km and a splay of 15% to each side. Obstacles less than 3 m in height above ground need not be collected;
- (d) 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. The Area 2c obstacle collection surface has a 1.2% slope extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The initial elevation of Area 2c shall be the elevation of the point of Area 2a at which it commences. Obstacles less than 15 m in height above ground need not be collected; and
- (e) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest. The Area 2d obstacle collection surface has a height of 100 m above ground.
- (f) In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, obstacle data shall be collected and recorded in accordance with the Area 1 requirements.
- (g) Data on every obstacle within Area 1 whose height above the ground is 100 m or higher shall be collected and recorded in the database in accordance with the Area 1 numerical requirements specified in Table S7-2.

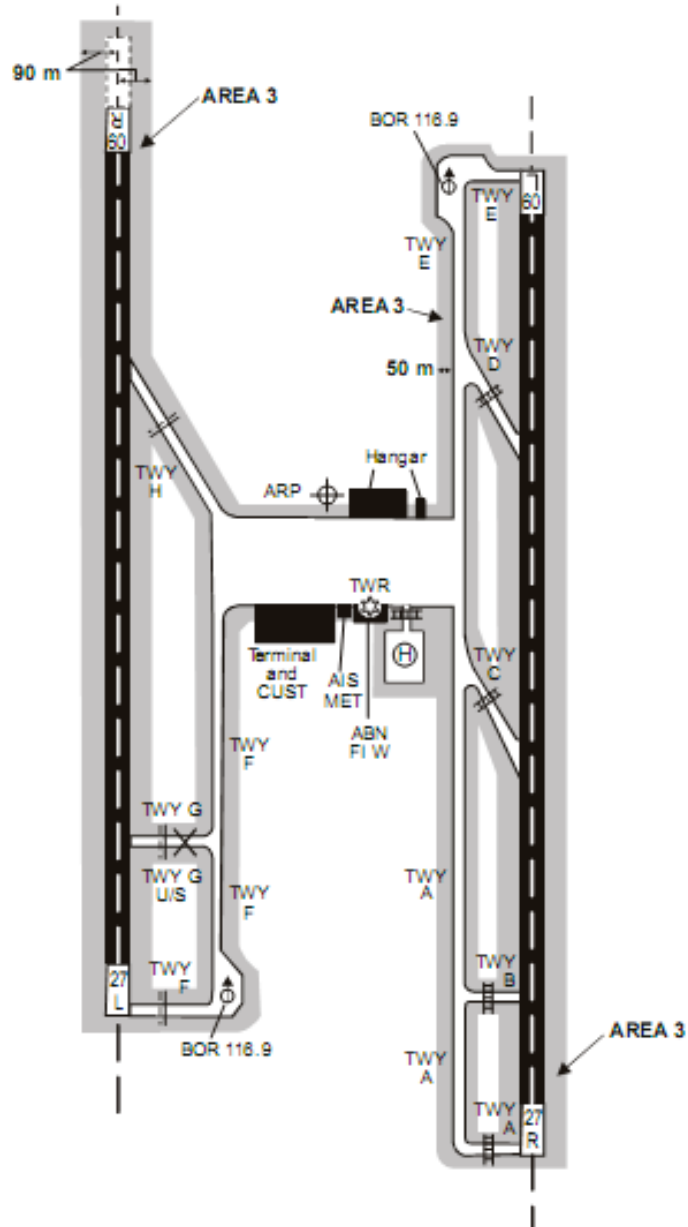


Figure S7-3. Terrain and obstacle data collection surface — Area 3

1. The data collection surface for terrain and obstacles extends a half-metre (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.
2. Terrain and obstacle data in Area 3 shall comply with the numerical requirements specified in Table S7-1 and Table S7-2, respectively.

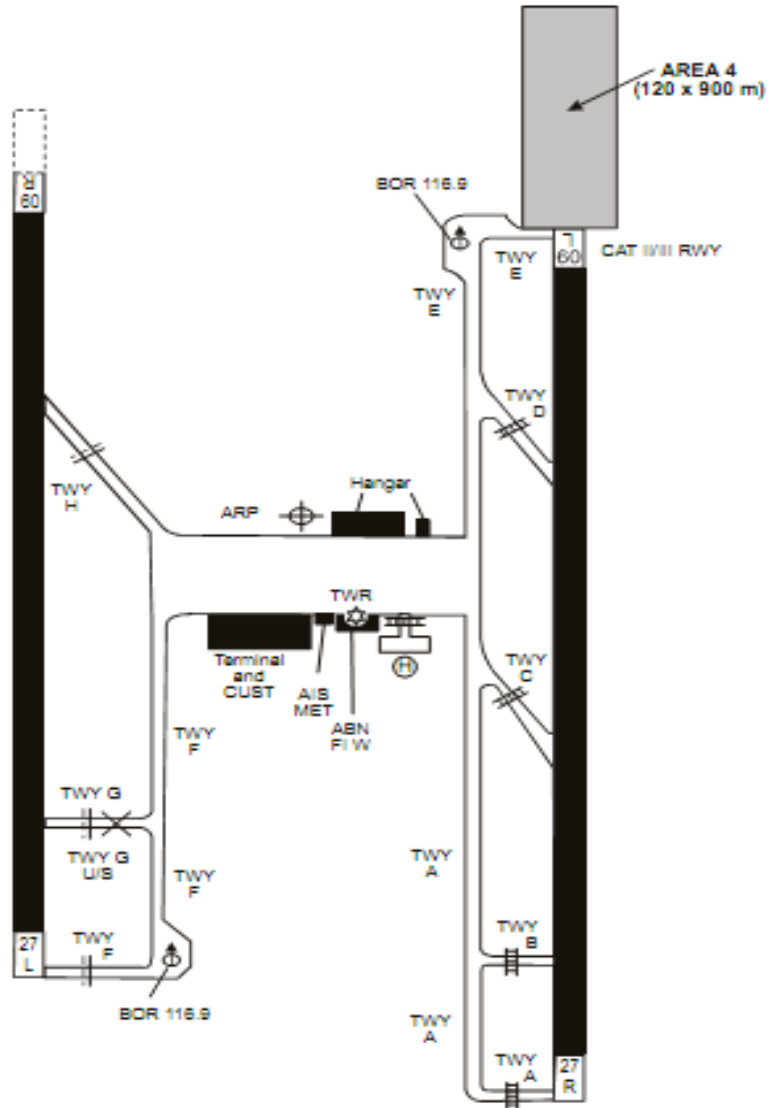


Figure A8-4. Terrain and obstacle data collection surface — Area 4

Terrain and obstacle data in Area 4 shall comply with the numerical requirements specified in Table S7-1 and Table S7-2 respectively.

Table S7 -1. Terrain data numerical requirements

	<i>Area 1</i>	<i>Area 2</i>	<i>Area 3</i>	<i>Area 4</i>
Post spacing	3 arc seconds (approx. 90 m)	1 arc second (approx. 30 m)	0.6 arc seconds (approx. 20 m)	0.3 arc seconds (approx. 9 m)
Vertical accuracy	30 m	3 m	0.5 m	1 m
Vertical resolution	1 m	0.1 m	0.01 m	0.1 m
Horizontal accuracy	50 m	5 m	0.5 m	2.5 m
Confidence level	90%	90%	90%	90%
Integrity classification	routine	essential	essential	essential
Maintenance period	as required	as required	as required	as required

Table S7 -2. Obstacle data numerical requirements

	Area 1	Area 2	Area 3	Area 4
Vertical accuracy	30 m	3 m	0.5 m	1m
Vertical resolution	1 m	0.1 m	0.01 m	0.1m
Horizontal accuracy	50 m	5 m	0.5 m	2.5m
Confidence level	90%	90%	90%	90%
Integrity classification	routine	Essential	Essential	Essential
Maintenance period	as required	as required	as required	As required

Table S7-3. Terrain attributes

Terrain Attribute	Mandatory/Optional
Area of coverage	Mandatory
Data source identifier	Mandatory
Acquisition method	Mandatory
Post spacing	Mandatory
Horizontal reference system	Mandatory
Horizontal resolution	Mandatory
Horizontal accuracy	Mandatory
Horizontal confidence level	Mandatory
Horizontal position	Mandatory
Elevation	Mandatory
Elevation reference	Mandatory
Vertical reference system	Mandatory
Vertical resolution	Mandatory
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Surface type	Optional
Recorded surface	Mandatory
Penetration level	Optional

Terrain Attribute	Mandatory/Optional
Known variations	Optional
Integrity Mandatory	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory

Table S7-4. Obstacle attributes

<i>Obstacle attribute</i>	<i>Mandatory/Optional</i>
Area of coverage	Mandatory
Data source identifier	Mandatory
Obstacle identifier	Mandatory
Horizontal accuracy	Mandatory
Horizontal confidence level	Mandatory
Horizontal position	Mandatory
Horizontal resolution	Mandatory
Horizontal extent	Mandatory
Horizontal reference system	Mandatory
Elevation	Mandatory
Height	Mandatory
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Vertical resolution	Mandatory
Vertical reference system	Mandatory
Obstacle type	Mandatory
Geometry type	Mandatory
Integrity	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory
Operations	Optional
Effectivity	Optional
Lighting	Mandatory
Marking	Mandatory

Dated the 12th June, 2018.

JAMES MACHARIA,
Cabinet Secretary,
Ministry of Transport, Infrastructure, Housing and Urban Development.