

LEGAL NOTICE No. 181

REPUBLIC OF TRINIDAD AND TOBAGO

THE CIVIL AVIATION ACT, CHAP. 49:03

REGULATIONS

MADE BY THE TRINIDAD AND TOBAGO CIVIL AVIATION AUTHORITY WITH  
THE APPROVAL OF THE MINISTER UNDER SECTION 33 OF THE CIVIL  
AVIATION ACT AND SUBJECT TO NEGATIVE RESOLUTION OF  
PARLIAMENT

THE CIVIL AVIATION [(NO. 15) AIR NAVIGATION SERVICES]  
(AMENDMENT) REGULATIONS, 2016

1. These Regulations may be cited as the Civil Aviation [(No. 15) Citation  
Air Navigation Services] (Amendment) Regulations, 2016.
2. In these Regulations, “the Regulations” mean the Civil Aviation Interpretation  
[(No. 15) Air Navigation Services] Regulations, 2004. Chap. 49:03
3. Regulation 3 of the Regulations is amended in subregulation (1)— Regulation 3  
(a) by inserting in the appropriate alphabetical sequence the amended  
following definitions:
  - “aerodrome mapping data or AMD” means data  
collected for the purpose of compiling aerodrome  
mapping information;
  - “aerodrome mapping database or AMDB” means a  
collection of aerodrome mapping data organized  
and arranged as a structured data set;
  - “aeronautical information management or AIM”  
means the dynamic, integrated management of  
aeronautical information through the provision  
and exchange of quality-assured digital  
aeronautical data in collaboration with all parties;
  - “Integrated Aeronautical Information Package” means  
a package in paper or electronic media which  
consists of the following elements:
    - (a) AIP, including amendment service;
    - (b) supplement to the AIP;
    - (c) NOTAM and PIB;
    - (d) AIC; and
    - (e) checklists and lists of valid NOTAM;

“air traffic management or ATM” means the dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management—safely, economically and efficiently—through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions;

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

“helicopter reference point” means the designated location of a heliport or a landing location;

“integrity classification of aeronautical data” means the classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as—

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

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

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

“safety management system or SMS” means a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures;

(b) by deleting the definition for “accident” and substituting the following definition:

“accident” means an occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have

disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which—

(a) a person is fatally or seriously injured as a result of—

(i) being in the aircraft; or

(ii) direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or

(iii) direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew;

(b) the aircraft sustains damage or structural failure which—

(i) adversely affects the structural strength, performance or flight characteristics of the aircraft; and

(ii) would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windcreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

(c) the aircraft is missing or is completely inaccessible;

(c) in the definition for “Aeronautical Information Service”, by deleting the words “information or data” and inserting the words “data and aeronautical information”;

- (d) in the definition for “aeronautical information services product”, by inserting after the words “means aeronautical” the words “data and aeronautical”;
- (e) in the definition for “minimum sector altitude”, by deleting the words “radio aid to navigation” and substituting the words “significant point, the aerodrome reference point or the helicopter reference point”; and
- (f) by deleting the definition for “relief”.

New Part IA  
inserted 4. The Regulations are amended by inserting after Part I the following Part:

“PART IA

*Applicability of these Regulations*

Applicability  
of these  
Regulations 2A. These Regulations prescribe the requirements and standards for the certification and supervision of an Air Navigation Services Provider in Trinidad and Tobago.

*Air Navigation Service Provider to be Approved*

Air  
Navigation  
Service  
Provider to  
be approved 2B. A person shall not provide Air Navigation Services in Trinidad and Tobago and the Piarco Flight Information Region unless such person holds an Air Navigation Service Provider Certificate issued by the Authority.

*Application for Air Navigation Service  
Provider Certificate*

Application  
for Air  
Navigation  
Service  
Provider  
Certificate 2C. (1) A person who wishes to apply for an Air Navigation Service Provider Certificate to provide Air Navigation Services in Trinidad and Tobago or the Piarco Flight Information Region shall—

- (a) apply to the Authority on the prescribed form;
- (b) pay the prescribed fee;
- (c) meet the requirements of these Regulations; and
- (d) meet the applicable regulations of the Civil Aviation [(No. 8) Aviation Security] Regulations, 2004.

(2) An application under subregulation (1) shall be accompanied by the Operations Manual of an Air Navigation Service Provider applicable to the Air Navigation Services for which the application is made.

*Grant of an Air Navigation Service Provider Certificate*

Grant of an Air Navigation Service Provider Certificate 2D. (1) The Authority may, on the recommendation of the Director General, grant an Air Navigation Service Provider Certificate to an applicant who has satisfied the Regulations under this Part.

*Operations Manual of an Air Navigation Services Provider*

Operations Manual of an Air Navigation Services Provider 2E. An applicant for an Air Navigation Service Provider Certificate shall ensure that his Operations Manual provides for—

- (a) an adequate organizational structure headed by an Accountable Manager;
- (b) adequate facilities, services and equipment in accordance with the applicable standards;
- (c) policies and procedures for the safe operations of aircraft and air navigation;
- (d) an acceptable safety management system that complies with the standards specified in these Regulations; and
- (e) a Quality Management System.

*Conditions for not granting an Air Navigation Services Provider Certificate*

Conditions for not granting an Air Navigation Services Provider Certificate 2F. (1) The Authority shall not issue an Air Navigation Service Provider Certificate where the applicant or a person having substantial ownership or interest in the operations of the Air Navigation Service Provider Organization—

- (a) does not satisfy any aspect of phases 1 to 4 of the certification process;
- (b) does not meet any requirement of these Regulations;
- (c) has provided incomplete, inaccurate, fraudulent or false information in his application for an Air Navigation Service Certificate;
- (d) employs or proposes to employ a person in a management or supervisory capacity who—
  - (i) held an aviation document issued by the Authority that has been suspended or revoked within the past five years by reason of criminal, fraudulent, improper action or insanity on the part of such person; or

- (ii) contributed materially to the suspension or revocation of an aviation document issued by the Authority.

*Notice to not issue Air Navigation Service Provider Certificate*

Notice to not  
issue Air  
Navigation  
Service  
Provider  
Certificate

2G. (1) The Authority shall not issue to an applicant an Air Navigation Service Provider Certificate where the applicant does not completely satisfy the requirements for the issuance of an Air Navigation Service Provider Certificate.

(2) The Authority shall issue a notice to the applicant of the decision taken under subregulation (1), giving reasons for the decision to not issue an Air Navigation Service Provider Certificate.

(3) The Authority shall provide the notice to the applicant under subregulation (2) no later than three months of the date the decision not to issue an Air Navigation Service Provider Certificate was made.

*Air Navigation Service Provider Certificate issued subject to conditions*

Air  
Navigation  
Service  
Provider  
Certificate  
issued subject  
to conditions

2H. (1) The Authority may grant an Air Navigation Service Provider Certificate subject to any condition the Authority considers necessary in the interest of safety of aircraft and air navigation.

(2) Where the Authority grants an Air Navigation Service Provider Certificate subject to a condition, the applicant shall be given the reason in writing for the condition.

(3) A condition under subregulation (2) shall be set out in the Air Navigation Service Provider Certificate or Operations Specifications issued with such Certificate.

(4) The holder of an Air Navigation Service Provider Certificate shall—

- (a) comply with all directives given by the Authority in respects of its operations; and
- (b) provide the Authority ready access at any place and time to conduct tests or inspections of his Air Navigation Service facilities, equipment or operating procedures for the purpose of ensuring the safety of aircraft and air navigation.

(5) Where the Authority wishes to conduct tests and inspections referred to in subregulation (4), the Authority shall—

- (a) give reasonable notice to the Air Navigation Service Provider of any test or inspection to be conducted; and
- (b) carry out the tests or inspections at a reasonable time.

*Duration of Air Navigation Service Provider Certificate*

Duration of  
Air  
Navigation  
Service  
Provider  
Certificate

2I. An Air Navigation Service Provider Certificate under these Regulations shall be issued by the Authority for a period not exceeding twelve months from the date of issue unless sooner surrendered by the holder or suspended or revoked by the Authority.

*Suspension or revocation of an Air Navigation Service Provider Certificate*

Suspension or  
revocation of  
an Air  
Navigation  
Service  
Provider  
Certificate

2J. (1) The Authority may suspend or revoke an Air Navigation Service Provider Certificate where there is reasonable evidence that—

- (a) a condition of the Air Navigation Service Provider Certificate has been breached;
- (b) the facilities, equipment, operations or maintenance of the Air Navigation Service provider does not meet the standards of the Regulations; or
- (c) the Air Navigation Service provider failed to comply with regulation 2H(4).

(2) In surrendering or revoking an Air Navigation Service Provider Certificate under subregulation (1), the Authority shall set out the facts and circumstances that justify the suspension or revocation of that Certificate.

(3) Before suspending or revoking an Air Navigation Service Provider Certificate under subregulation (1), the Authority shall give notice to the Air Navigation Service provider which—

- (a) sets out the facts and circumstances that justify the suspension or revocation of that Certificate; and

(b) invites the Air Navigation Service provider to show cause, in writing, within fourteen (14) days stating why his Air Navigation Service Provider Certificate should not be suspended or revoked.

*Surrender of an Air Navigation Service Provider Certificate*

Surrender of an Air Navigation Service Provider Certificate      2K. Where the holder of an Air Navigation Service Provider Certificate wishes to surrender that certificate, he shall give the Authority written notice no less than thirty days in advance of the date he wishes to surrender his Air Navigation Service Provider Certificate and the discontinuance of Air Navigation Services.

*Air Navigation Service Provider Certificate not Transferable*

Air Navigation Service Provider Certificate not Transferable      2L. An Air Navigation Service Provider Certificate shall not be transferable and any purported transfer of any Air Navigation Service Provider Certificate shall be null and void.

*Amendment of an Air Navigation Service Provider Certificate*

Amendment of an Air Navigation Service Provider Certificate      2M. The Authority may amend an Air Navigation Service Provider Certificate where—

(a) the holder of such certificate requests an amendment to the Air Navigation Service Provider Certificate; and

(b) the requirements of these Regulations have been satisfied.”.

Part A of  
Schedule 1  
amended

5. Schedule 1 of the Regulations is amended—

(a) in Part A—

(i) by deleting clause 13(4) and substituting the following subclause:

“ (4) Based on the applicable integrity classification, the validation and verification procedures shall—

(a) for routine data: avoid corruption throughout the processing of the data;

(b) 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

(c) for critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance procedures to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.”;

(ii) by deleting clause 13(5) and (6) and substituting the following subclauses:

“ (5) Electronic aeronautical data set shall be protected by the inclusion in the data sets of a 32-bit cyclic redundancy check (CRC) implemented by the application dealing with the data sets.

(6) The provision of subclause (5), this shall apply to the protection of all integrity levels of data sets specified in subclause (4).”;

(iii) by inserting after clause 23 the following clause:

**“IDENTIFICATION AND DELINEATION OF  
PROHIBITED, RESTRICTED AND DANGER  
AREAS**

24. (1) Each prohibited area, restricted area, or danger area established by the Authority shall, upon initial establishment, be given identification and full details shall be promulgated.

(2) The identification referred to in subclause (1) shall be used to identify the area in all subsequent notifications pertaining to that area.

(3) The identification referred to in subclause (1) shall be composed of a group of letters and figures as follows:

(a) nationality letters for location indicators assigned to the State or territory which has established the airspace;

(b) a letter “P” for prohibited area, “R” for restricted area and “D” for danger area as appropriate; and

(c) a number, not duplicated within the State or territory concerned.

(4) To avoid confusion, identification numbers shall not be reused for a period of at least one year after cancellation of the area to which they refer.

(5) Where a prohibited, restricted or danger area is established, the area should be as small as practicable and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.”;

(b) by deleting Appendix 5 and substituting the following Appendix:

**"APPENDIX 5**

(Part A, Clause 14)

**AERONAUTICAL DATA QUALITY REQUIREMENTS**

**Table 1**

**Latitude and Longitude**

<b>Latitude and Longitude</b>	<b>Accuracy data type</b>	<b>Integrity classification</b>
Flight information region boundary points	2 km declared	routine
P, R, D area boundary points (outside CTA/CTZ boundaries)	2 km declared	routine
P, R, D area boundary points (inside CTA/CTZ boundaries)	100 m calculated	essential
CTA/CTZ boundary points	100 m calculated	essential
<i>En route</i> nav aids and fixes, holding STAR/SID points	100 m surveyed/calculated	essential
Obstacles in Area 1 (the entire State territory)	50 m surveyed	routine
Obstacles in Area 2 (the Part outside the aerodrome/heliport boundary)	5 m surveyed	essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure.	3 m surveyed/calculated	essential

*Note 1: See the Appendix to Part H of Schedule 2 for graphical illustrations of obstacles data collection surfaces and criteria used to identify obstacles in the defined area.*

*Note 2: In those portions of area 2 where flight operations are prohibited due to very high terrain or other local restrictions or regulations, obstacle data are to be collected in accordance with the Area 1 numerical requirements specified in the Appendix to Part H of Schedule 2.*

**Table 2**

**Elevation, Altitude and Height**

<b>Elevation/Altitude/Height</b>	<b>Accuracy Data type</b>	<b>Integrity classification</b>
Threshold crossing height, (Reference datum height) precision approaches	0.5 m calculated	critical
Obstacle clearance altitude/height (OCA/H)	As specified in PANS-OPS (Doc 8168)	essential
Obstacles in Area 1 (the entire State territory) elevations	13 m surveyed	routine
Obstacles in Area 2 (the part outside the aerodrome/heliport boundary)	3 m surveyed	essential

Table 2—Continued

## Elevation, Altitude and Height

Elevation/Altitude/Height	Accuracy Data type	Integrity classification
Distance measuring equipment (DME) elevation	30 m (100 ft) surveyed	essential
Instrument approach procedure altitude	As specified in PANS-OPS (Doc 8168)	essential
Minimum altitudes	50 m calculated	routine

Note 1: See the Appendix to Part H of Schedule 2 for graphical illustrations of obstacles data collection surfaces and criteria used to identify obstacles in the defined area.

Note 2: In those portions of area 2 where flight operations are prohibited due to very high terrain or other local restrictions or regulations, obstacle data are to be collected in accordance with the Area 1 numerical requirements specified in the Appendix to Part H of Schedule 2.

Table 3

## Declination and Magnetic Variation

Declination/Variation	Accuracy data type	Integrity classification
VHF NAV AID station declination used for technical line-up	1 degree surveyed	essential
NDB NAV AID magnetic variation	1 degree surveyed	routine

Table 4

## Bearing

Bearing	Accuracy data type	Integrity classification
Airways segments	1/10 degree calculated	routine
Bearing used for the formation of an <i>en-route</i> fix	1/10 degree calculated	routine
Terminal arrival/departure route segment	1/10 degree calculated	routine
Bearing used for the formation of a terminal and instrument approach procedure fix	1/100 degree calculated	essential

Table 5

## Length, Distance and Dimension

Length/Distance/Dimension	Accuracy data type	Integrity classification
Airways segments length	1/10 km calculated	routine
Distance used for the formation of an <i>en-route</i> fix	1/10 km calculated	routine
Terminal arrival/departure route segments length	1/100 km calculated	essential
Distance used for the formation of a terminal and instrument approach procedure fix	1/100 km calculated	Essential";

(c) in Part B—

- (i) in clause 2(5), by deleting the words “implementation and”; and
- (ii) in clause 2, by deleting subclause (6);

(d) in Part C—

- (i) in clause 2(6)(l), by inserting after the words “surface wind direction” the words “(in degrees magnetic)”;
- (ii) in clause 2(6)(m), by inserting after the words “when applicable, RVR” the words “and where visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers”;
- (iii) in clause 2(7)(l), by inserting after the words “surface wind direction” the words “(in degrees magnetic)”;
- (iv) in clause 2(8)(k), by inserting after the words “surface wind direction” the words “(in degrees magnetic)”;
- (v) in clause 2(8)(l), by inserting after the words “when applicable, RVR” the words “and where visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers.”.

6. The Regulations is amended by deleting Schedule 2 and substituting the following Schedule:

Schedule 2  
deleted and  
substituted

“SCHEDULE 2

(Regulation 17A)

PART A

GENERAL

The following are the standards for common reference systems required to be met by an Aeronautical Information Services Provider:

*Common Reference Systems For Air Navigation*

**1. Horizontal reference system**

(1) World Geodetic System—1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

(2) In precise geodetic applications and some air navigation applications, temporal changes in the tectonic plate motion and tidal effects on the Earth's crust should be modelled and estimated. To reflect the temporal effect, an epoch should be included with any set of absolute station coordinates.

(3) Geographical coordinates which have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the requirements in clause 22 of Schedule 1, and Annex 14, Volumes I and II, Chapter 2, shall be identified by an asterisk.

(4) The order of publication resolution of geographical coordinates shall be that specified in Table A-1 of Appendix 6 while the order of chart resolution of geographical coordinates shall be that specified in Annex 4, Appendix 6, Table 1.

## **2. Vertical reference system**

(1) Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for international air navigation.

(2) At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation specified in Annex 14, Volumes I and II, on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wave length) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).

(3) In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 1 shall also be published.

(4) The order of publication resolution of elevation and geoid undulation shall be that specified in A-2 of Appendix 6 while the order of chart resolution of elevation and geoid undulation shall be that specified in Annex 4, Appendix 6, Table 2.

## **3. Temporal reference system**

For international civil aviation, the Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system.

When a different temporal reference system is used for some applications, the feature catalogue, or the metadata associated with an application schema or a data set, as appropriate, shall include either a description of that system or a citation for a document that describes that temporal reference system.

## **4. Miscellaneous specifications**

(1) Each element of the Integrated Aeronautical Information Package for international distribution shall include English text for those parts expressed in plain language.

(2) Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the Latin alphabet.

(3) Units of measurement used in the origination, processing and distribution of aeronautical data and aeronautical information should be consistent with the decision taken by the State in respect of the use of the tables contained in Annex 5—Units of Measurement to be Used in Air and Ground Operations.

(4) ICAO abbreviations shall be used in the aeronautical information services whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information.

PART B

(Regulation 18)

RESPONSIBILITIES AND FUNCTIONS

**1. State responsibilities**

(1) Each Contracting State shall—

- (a) provide an aeronautical information service; or
- (b) agree with one or more other Contracting State(s) for the provision of a joint service; or
- (c) delegate the authority for the provision of the service to a non-governmental agency, provided the Standards and Recommended Practices of this Schedule are adequately met.

(2) Each Contracting State shall ensure that the provision of aeronautical data and aeronautical information covers its own territory and those areas over the high seas for which it is responsible for the provision of air traffic services.

(3) The State concerned shall remain responsible for the aeronautical data and aeronautical information provided in accordance with paragraph (2). Aeronautical data and aeronautical information provided for and on behalf of a State shall clearly indicate that it is provided under the authority of that State.

(4) Each Contracting State shall ensure that the aeronautical data and aeronautical information provided is complete, timely and of required quality in accordance with clause 8 of Part C.

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

**2. AIS responsibilities and functions**

(1) An aeronautical information service 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 ATM community, including—

- (a) those involved in flight operations, including flight crews, flight planning and flight simulators; and
- (b) the air traffic services unit responsible for flight information service and the services responsible for pre-flight information.

(2) An aeronautical information service shall receive, collate or assemble, edit, format, publish or store and distribute aeronautical data and aeronautical information concerning the entire territory of the State as well as those areas over the high seas in which the State is responsible for the provision of air traffic services. Aeronautical data and aeronautical information shall be provided as an Integrated Aeronautical Information Package.

(3) Where 24-hour service is not provided, service shall be available during the whole period an aircraft is in flight in the area of responsibility of an aeronautical information service, plus a period of at least two hours before and after such a period. The service shall also be available at such other time as may be requested by an appropriate ground organization.

(4) An aeronautical information service shall, in addition, obtain aeronautical data and aeronautical information to enable it to provide pre-flight information service and to meet the need for in flight information—

- (a) from the aeronautical information services of other States; and
- (b) from other sources that may be available.

(5) Aeronautical data and aeronautical information/data obtained under subclause (4)(a) shall, when distributed, be clearly identified as having the authority of the State of Origin.

(6) Aeronautical data and aeronautical information/data obtained under subclause (4)(b) shall, if possible, be verified before distribution and if not verified shall, when distributed, be clearly identified as such.

(7) An aeronautical information service 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 them to comply with clause 2(1).

### **3. Exchange of aeronautical data and aeronautical information**

(1) Each State shall designate the office to which all elements of the Integrated Aeronautical Information Package originated by other States shall be addressed. Such an office shall be qualified to deal with requests for aeronautical data and aeronautical information originated by other States.

(2) Where more than one international NOTAM office is designated within a State, the extent of responsibility and the territory covered by each office shall be defined.

(3) An aeronautical information service shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.

(4) Wherever practicable, direct contact between aeronautical information services shall be established in order to facilitate the international exchange of aeronautical data and aeronautical information.

(5) One copy of each of the elements of the Integrated Aeronautical Information Package, that have been requested by the aeronautical information service of an ICAO Contracting State, shall be made available by the originating State in the mutually agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a non-governmental agency.

(6) 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, should be subject to bilateral agreement between ICAO Contracting States.

(7) 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, whether in paper and/or electronic form, by States other than ICAO Contracting States, and by other entities should be subject to separate agreement with the originating State.

### **4. Copyright**

(1) Any product of a State's AIS which has been granted copyright protection by that State and provided to another State in accordance with clause 3 shall only be made available to a third party on the condition that the third party is made aware that the product is copyright protected and provided that it is appropriately annotated that the product is subject to copyright by the originating State.



**5. Cost recovery**

The overhead cost of collecting and compiling aeronautical data and aeronautical information should be included in the cost basis for airport and air navigation services charges, as appropriate, in accordance with the principles contained in ICAO's Policies on Charges for Airports and Air Navigation Services (Doc 9082).

PART C

(Regulation 18)

AERONAUTICAL INFORMATION MANAGEMENT

**1. Information management requirements**

The information management resources and processes established by an aeronautical information service shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the ATM system.

**2. Aeronautical data and aeronautical information validation and verification**

(1) Material to be issued as part of the Integrated Aeronautical Information Package shall be thoroughly checked before it is submitted to the aeronautical information service, in order to make certain that all necessary information has been included and that it is correct in detail prior to distribution.

(2) An Aeronautical Information Service shall establish verification and validation procedures which ensure that upon receipt of aeronautical data and aeronautical information, quality requirements (accuracy, resolution, integrity, and traceability) are met.

**3. Data quality specifications**

(1) Accuracy—The order of accuracy for aeronautical data shall be as specified in Annex 11, Chapter 2, and Annex 14, Volumes I and II, Chapter 2. In that respect, three types of positional data shall be identified: surveyed points (runway thresholds, navigation aid positions, etc.), calculated points (mathematical calculations from the known surveyed points of points in space/fixes) and declared points (e.g., flight information region boundary points).

(2) Resolution—

- (a) the order of publication resolution of aeronautical data shall be that as specified in Appendices 1 and 6; and
- (b) the resolution of the data features contained in the database should be commensurate with the data accuracy requirements.

**4. Integrity**

(1) Integrity classification related to aeronautical data shall be as provided in Tables A-1 to A-5 of Appendix 6.

(2) The integrity of aeronautical data shall be maintained throughout the data process from survey/origin to distribution to the next intended user (the entity that receives the aeronautical information from the aeronautical information service provider). Based on the applicable integrity classifications, the validation and verification procedures shall—

- (a) for routine data: avoid corruption throughout the processing of the data;

- (b) 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
- (c) 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.

#### **5. Metadata**

- (1) Metadata shall be collected for aeronautical data processes and exchange points. This metadata collection shall be applied throughout the aeronautical information data chain, from survey and origin to distribution to the next intended user.
- (2) The metadata to be collected shall include, as a minimum—
  - (a) the name of the organizations 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.

#### **6. Data protection**

- (1) Aeronautical data and data sets shall be protected in accordance with data error detection, security, and authentication techniques.
- (2) Electronic aeronautical data sets shall be protected by the inclusion in the data sets of a 32-bit cyclic redundancy check (CRC) implemented by the application dealing with the data sets. This shall apply to the protection of the integrity classification of data sets as specified in clause 4.

#### **7. Use of automation**

- (1) Automation shall be introduced with the objective of improving the timeliness, quality, efficiency and cost-effectiveness of aeronautical information services.
- (2) Where aeronautical data and aeronautical information are provided in multiple formats, processes shall be implemented to ensure data and information consistency between formats.
- (3) In order to meet the data quality requirements, automation shall—
  - (a) enable digital aeronautical data exchange between the parties involved in the data processing chain; and
  - (b) use aeronautical information exchange models and data exchange models designed to be globally interoperable.
- (4) The aeronautical information model used should encompass the aeronautical data and aeronautical information to be exchanged.
- (5) The aeronautical information model used should—
  - (a) use the Unified Modelling Language (UML) to describe the aeronautical information features and their properties, associations, and data types;
  - (b) include data value constraints and data verification rules;
  - (c) include provisions for metadata as specified in clause 5(2); and
  - (d) include a temporality model to enable capturing the evolution of the properties of an aeronautical information feature during its life cycle.

- (6) The aeronautical data exchange model used should—
- (a) apply a commonly used data encoding format; and
  - (b) provide an extension mechanism, by which groups of users can extend the properties of existing features and add new features which do not adversely affect global standardization.

#### **8. Quality management system**

(1) Quality management systems shall be implemented and maintained encompassing all functions of an aeronautical information service, as outlined in clause 2, Part B of Schedule 2. The execution of such quality management systems shall be made demonstrable for each function stage.

(2) Quality management should 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 quality management system established in accordance with clause 8(1) should follow the International Organization for Standardization (ISO) 9000 series of quality assurance standards, and be certified by an approved organization.

(4) Within the context of the established quality management system, the competencies and the associated knowledge, skills and abilities required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. Processes shall be in place to ensure that personnel possess the competencies required to perform specific assigned functions. Appropriate records shall be maintained so that the qualifications of personnel can be confirmed. Initial and periodic assessments shall be established that require personnel to demonstrate the required competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls.

(5) Each quality management system shall include 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 so as to 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 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 and that the data traceability requirements are met through the provision of appropriate metadata. The system shall also provide assurance of the applicability period of intended use of aeronautical data as well as 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. If non-conformity is identified, initiating action to correct its cause shall be determined and taken without undue delay. All audit observations and remedial actions shall be evidenced and properly documented.

#### **9. Human Factors considerations**

(1) The organization of the aeronautical information services as well as the design, contents, processing and distribution of aeronautical data and aeronautical information shall take into consideration human factors principles which facilitate their optimum utilization.

(2) Due consideration shall be given to the integrity of information where human interaction is required and mitigating steps taken where risks are identified.

## PART D

(Regulation 20)

## AERONAUTICAL INFORMATION PUBLICATIONS (AIP)

The standards required to be met for AIP shall be as follows:

**1. Contents**

(1) an AIP shall contain, in three parts, sections and subsections uniformly referenced to allow for standardized electronic data storage and retrieval, current information relating to, and arranged under those subjects enumerated in the Appendix 1 to this Part.

(2) Notwithstanding subclause (1), when the AIP, or volume of the AIP, is designed basically to facilitate operational use in flight, the precise format and arrangement may be left to the discretion of the Director General provided that an adequate table of contents is included.

(3) An AIP shall include in Part 1—General (GEN) the following:

- (a) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP;
- (b) the general conditions under which the services or facilities are available for international use;
- (c) a list of significant differences between the regulations and practices of Trinidad and Tobago and the related ICAO Standards, Recommended Practices and Procedures, given in a form that would enable a user to readily differentiate between the requirements of the Authority and the related ICAO provisions; and
- (d) the choice made by the Director General in each significant case where an alternative course of action is provided for in ICAO Standards, Recommended Practices and Procedures.

(4) The following aeronautical charts shall, where available for designated international ICAO aerodromes and heliports, form part of the AIP, or be distributed separately to recipients of the AIP:

- (a) Aerodrome and Heliport Chart—ICAO;
- (b) Aerodrome Ground Movement Chart—ICAO;
- (c) Aerodrome Obstacle Chart (Type A)—ICAO;
- (d) Aerodrome Terrain and Obstacle Chart—ICAO (Electronic);
- (e) Aircraft Parking and Docking Chart—ICAO;
- (f) Area Chart—ICAO;
- (g) ATC Surveillance Minimum Altitude Chart—ICAO;
- (h) Instrument Approach Chart—ICAO;
- (i) Precision Approach Terrain Chart—ICAO;
- (j) Standard Arrival Chart—Instrument (STAR)—ICAO;
- (k) Standard Departure Chart—Instrument (SID)—ICAO; and
- (l) Visual Approach Chart—ICAO.

(5) Charts, maps or diagrams shall be used, where appropriate, to complement or as a substitute for the tabulations or text of an AIP.

**2. General specifications**

- (1) An AIP shall—
  - (a) be self-contained and include a table of contents; and
  - (b) not duplicate information within the AIP or from other sources.
- (2) Where the Authority and another State combine to issue a joint AIP, this information shall be made clear on the cover and in the table of contents.
- (3) All AIP shall be dated.
- (4) Where an AIP is issued in loose-leaf form, each page shall contain the day, month and year, of the publication date or the effective date of the information.
- (5) A checklist giving the current date of each page in the AIP series shall be reissued frequently to assist the user in maintaining a current publication.
- (6) The page number, chart title and date of the checklist under subclause (4), shall appear on the checklist itself.
- (7) An AIP issued as a bound volume and each page of an AIP issued in loose-leaf form shall be so annotated as to indicate clearly—
  - (a) the identity of the AIP;
  - (b) the territory covered and subdivisions when necessary;
  - (c) the identification of the issuing State and the authority;
  - (d) page numbers and chart titles; and
  - (e) the degree of reliability where the information is doubtful.
- (8) All changes to the AIP, or new information on a republished page, shall be identified by a distinctive symbol or annotation.
- (9) Operationally significant changes to the AIP shall be published in accordance with AIRAC procedures and shall be clearly identified by the acronym—AIRAC.
- (10) AIP shall be amended or reissued at such regular intervals as may be necessary to keep the AIP up-to-date.
- (11) Recourse to hand amendments or annotations shall be kept to the minimum.
- (12) The normal method of amendment shall be by means of a replacement sheet.
- (13) The regular interval referred to in subclause (10) shall be specified in the AIP.

PART 1—GENERAL (GEN)

**3. Specifications for AIP Amendments**

- (1) Permanent changes to the AIP shall be published as AIP amendments.
- (2) Each AIP amendment shall be allocated a consecutive serial number.
- (3) Each AIP amendment page, including the cover sheet, shall display a publication date.
- (4) Each AIRAC AIP amendment page, including the cover sheet, shall display the date when the amendment becomes effective.
- (5) Where an effective time other than 0000UTC is used, the effective time shall also be displayed on the cover sheet.

(6) When an AIP amendment is issued, the AIP amendment shall include references to the serial number of those elements, if any, of the Integrated Aeronautical Information Package which has been incorporated into the amendment.

(7) A brief indication of the subjects affected by the amendment shall be stated on the AIP amendment cover sheet.

(8) When an AIP amendment will not be published at the established interval or publication date, a NIL notification shall be originated and distributed by the monthly plain-language list of valid NOTAM.

#### **4. Specifications for AIP Supplements**

(1) Temporary changes of duration three months or longer and information of short duration which contains extensive text or graphics shall be published as AIP Supplements.

(2) Each AIP supplement shall be allocated consecutive serial numbers based on the calendar year.

(3) AIP supplement pages shall be kept in the AIP for as long as all or some of their contents remain valid.

(4) Where an AIP supplement is sent in replacement of a NOTAM, the AIP supplement shall include a reference to the serial number of the NOTAM.

(5) A checklist of valid AIP supplements shall be issued at intervals of not more than one month through the medium of the monthly plain-language list of valid NOTAM.

(6) Where an error occurs in an AIP Supplement or when the period of validity of an AIP Supplement is changed, a new AIP Supplement shall be published as a replacement.

#### **5. Distribution**

AIP amendments and AIP supplements shall be made available by the Authority by the most expeditious means.

#### **6. Electronic AIP (eAIP)**

(1) Where provided, the information content of the electronic AIP and the structure of the chapters, sections and subsections shall follow the content and structure of the paper AIP.

(2) The electronic AIP shall include files that allow for printing a paper AIP.

### PART E

(Regulation 21)

### NOTAM

The Standards required to be met for NOTAM shall be as follows:

#### **1. Origination**

(1) A NOTAM shall be originated and issued promptly where—

(a) the information to be distributed is of a temporary nature and of short duration; or

(b) operationally significant permanent changes, or temporary changes of long duration are made at short notice.

- (2) A NOTAM shall be originated and issued in respect of the following:
- (a) establishment, closure or significant changes in operation of aerodrome and heliport or runways;
  - (b) establishment, withdrawal and significant changes in operation of aeronautical services such as AGA, AIS, ATS, CNS, MET and SAR;
  - (c) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services which includes—
    - (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 such as directional aids;
    - (vi) change of location;
    - (vii) power increase or decrease amounting to fifty per cent or more;
    - (viii) change in broadcast schedules or contents; or
    - (ix) irregularity or unreliability of operation of any radio navigation and air-ground communication services;
  - (d) establishment, withdrawal or significant changes made to visual aids;
  - (e) interruption of, or return to operation of major components of aerodrome lighting systems;
  - (f) establishment, withdrawal or significant changes made to procedures for air navigation services;
  - (g) occurrence or correction of major defects or impediments in the manoeuvring area;
  - (h) changes to and limitations on availability of fuel, oil and oxygen;
  - (i) major changes to search and rescue facilities and services available;
  - (j) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation;
  - (k) changes in regulations requiring immediate action, such as prohibited areas for SAR action;
  - (l) presence of hazards which affect air navigation including obstacles, military exercises, displays, races and major parachuting events outside promulgated sites;
  - (m) erecting or removal of, or changes to, obstacles to air navigation in the take-off and climb, missed approach, approach areas and runway strip;
  - (n) establishment or discontinuance, including activation or deactivation as applicable, or changes in the status of prohibited, restricted or danger areas;
  - (o) establishment or discontinuance of areas or routes or portions of the areas or routes where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;
  - (p) allocation, cancellation or change of location indicators;
  - (q) significant changes in the level of protection normally available at an aerodrome or a heliport for rescue and fire-fighting purposes;

- (r) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
  - (s) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;
  - (t) forecasts of solar cosmic radiation, where provided;
  - (u) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;
  - (v) 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 portion of routes which could be affected and the direction of movement;
  - (w) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures and limitations which affect air navigation; and
  - (x) implementation of short-term contingency measures in cases of disruption, or partial disruption, of air traffic services and related supporting services.
- (3) The following information shall not be notified by NOTAM:
- (a) routine maintenance work on aprons and taxiways which does not affect the safe movement of aircraft;
  - (b) runway marking work, where aircraft operations can safely be conducted on other available runways, or the equipment used can be removed where necessary;
  - (c) temporary obstructions in the vicinity of aerodrome and heliport that do not affect the safe operation of aircraft;
  - (d) partial failure of aerodrome and heliport lighting facilities where the partial failure does not directly affect aircraft operations;
  - (e) partial temporary failure of air-ground communications where 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 where in uncontrolled airspace under VFR, when controlled, at promulgated sites or within danger or prohibited areas; and
  - (i) other information of a similar temporary nature.
- (4) At least seven days' advance notice shall be given of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations.
- (5) NOTAM notifying unserviceability of aids to air navigation, facilities or communication services shall give an estimate of the period of unserviceability or the time at which restoration of service is expected.
- (6) Where an AIP amendment or an AIP supplement is published in accordance with AIRAC procedures, a NOTAM shall be originated giving a brief description of the contents, the effective date and time and the reference number of the amendment or supplement.



(7) The NOTAM under subclause (5) shall come into force on the effective date and time as the amendment or supplement became effective and remains valid in the pre-flight information bulletin for a period of fourteen days.

**2. General specifications**

(1) Except as otherwise provided in subclauses (3) and (4), each NOTAM shall contain the information in the order shown in the NOTAM Format in Appendix 5 of this Part.

(2) Text of NOTAM shall be composed of the significations and uniform abbreviated phraseology assigned to the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language.

(3) When NOTAM is selected for international distribution, English text shall be included for those parts expressed in plain language.

(4) Information concerning an operationally significant change in volcanic activity, a volcanic eruption or volcanic ash cloud when reported by means of an ASHTAM, shall contain the information in the order shown in the ASHTAM Format in Appendix 2 of this Part.

(5) The NOTAM originator shall allocate to each NOTAM a series identified by a letter and a consecutive four-digit number based on the calendar year followed by a stroke and a two-digit number for the year.

(6) Where errors occur in a NOTAM, a new number to replace the erroneous NOTAM shall be issued or the erroneous NOTAM shall be cancelled and a new NOTAM issued.

(7) Where a NOTAM is issued which cancels or replaces a previous NOTAM, the series and number of the previous NOTAM shall be indicated so the series, location indicator and subject of both NOTAM are the same and only one NOTAM is cancelled or replaced by another NOTAM.

(8) Each NOTAM shall—

- (a) deal with only one subject and one condition of the subject;
- (b) be as brief as possible and compiled so that the meaning of the NOTAM is clear without the need to refer to another document; and
- (c) be transmitted as a single telecommunication message.

(9) A NOTAM containing permanent or temporary information of long duration shall carry appropriate AIP or AIP supplement references.

(10) A complete form of location indicators shall be included in the text of a NOTAM contained in the location indicators specified in the ICAO Doc. 7910.

(11) In no case shall an abbreviated form of a location indicator under subclause (10) be used.

(12) Where no ICAO location indicator is assigned to the location, the name of the location spelt shall be entered in plain language.

(13) A checklist of valid NOTAM for each series shall—

- (a) be issued as a NOTAM over the AFS at intervals of not more than one month, one NOTAM issued for each series;
- (b) refer to the latest AIP amendments, AIP supplements and at least the internationally distributed AIC; and

(c) have the same distribution as the actual message series to which they refer and be clearly identified as checklist.

(14) A monthly plain-language list of valid NOTAM, including indications of the latest AIP amendments, AIC issued and a checklist of AIP supplements shall be prepared with a minimum of delay and forwarded by the most expeditious means to recipients of the Integrated Aeronautical Information Package.

### **3. Distribution**

(1) NOTAM shall—

(a) be distributed on the basis of a request; and

(b) be prepared in conformity with the relevant provisions of the ICAO communication procedures.

(2) AFS shall, where practicable, be employed for NOTAM distribution.

(3) Where a NOTAM exchange as specified in subclause (5) is sent by means other than the AFS, a six-digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator shall be used, preceding the text.

(4) The Director General shall select the NOTAM that are to be given international distribution.

(5) International exchange of NOTAM shall take place only as mutually agreed between the Authority and the international NOTAM offices concerned.

(6) The international exchange of ASHTAM, and NOTAM where the Authority use NOTAM for distribution of information on volcanic activity, shall include volcanic ash advisory centers and the centers designated by regional air navigation agreement for the operation of AFS satellite distribution systems such as satellite distribution system for information relating to air navigation (SADIS) and international satellite communications system (ISCS), and shall take account of the requirements of long range operations.

(7) The exchanges of NOTAM between international NOTAM offices shall, as far as practicable, be limited to the requirements of the receiving States concerned by means of separate series providing for at least international and domestic flights.

(8) A predetermined distribution system for NOTAM transmitted on the AFS shall be used where possible, subject to the requirements of subclause (5).

## PART F

(Regulation 22)

### AERONAUTICAL INFORMATION REGULATION AND CONTROL (AIRAC)

The standards required to be met for AIRAC shall be as follows:

#### **1. General specifications**

(1) Information concerning the circumstances listed in Part 1 of Appendix 3, shall be distributed under AIRAC, basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of twenty-eight days, including 14th January, 2010.

(2) Information notified in the AIRAC shall not be changed further for at least another twenty-eight days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.

(3) Where information has not been submitted by the AIRAC date, a NIL notification shall be originated and distributed by NOTAM or other suitable means, not later than one cycle before the AIRAC effective date concerned.

(4) Implementation dates other than the AIRAC effective dates shall not be used for pre-planned operationally significant changes requiring cartographic work or for updating of navigation databases.

**2. Provision of information in paper copy form**

Information provided under the AIRAC system in paper copy form shall be distributed by the AIS unit at least forty-two days in advance of the effective date with the objective of reaching recipients at least twenty-eight days in advance of the effective date.

**3. Provision of information in electronic form**

(1) Where the Authority has established an aeronautical database and thereafter updates the contents of that database concerning the circumstances listed in Part 1 of Appendix 3, the Authority shall ensure that the effective dates of the data coincide with the established AIRAC effective dates.

(2) The information provided as electronic media, concerning the circumstances listed in Part 1 of Appendix 3, shall be distributed and made available by the AIS unit so as to reach recipients at least twenty-eight days in advance of the AIRAC effective date.

PART G

(Regulation 23)

AERONAUTICAL INFORMATION CIRCULARS

The standards required to be met for AIC shall be as follows:

**1. Origination**

(1) An AIC shall be originated whenever it is necessary to publish aeronautical information which does not qualify—

- (a) under the specifications in clause 1 of Part B for inclusion in an AIP; or
- (b) under the specifications in clause 1 of Part C for the origination of a NOTAM.

(2) An AIC shall be originated whenever it is desirable to publish—

- (a) a long-term forecast of any major change in legislation, regulations, procedures or facilities;
- (b) information of a purely explanatory or advisory nature liable to affect flight safety;
- (c) information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters such as—
  - (i) forecasts of important changes in the air navigation procedures, services and facilities provided;

- (ii) forecasts of implementation of new navigational systems;
- (iii) significant information arising from aircraft accident or incident investigation which has a bearing on flight safety;
- (iv) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference;
- (v) advice on medical matters of special interest to pilots;
- (vi) warnings to pilots concerning the avoidance of physical hazards;
- (vii) effect of certain weather phenomena on aircraft operations;
- (viii) information on new hazards affecting aircraft handling techniques;
- (ix) regulations relating to the carriage of restricted articles by air;
- (x) reference to the requirements of, and publication of changes in, national legislation;
- (xi) aircrew licensing arrangements;
- (xii) training of aviation personnel;
- (xiii) application of, or exemption from, requirements in national legislation;
- (xiv) advice on the use and maintenance of specific types of equipment;
- (xv) actual or planned availability of new or revised editions of aeronautical charts;
- (xvi) carriage of communication equipment;
- (xvii) explanatory information relating to noise abatement;
- (xviii) selected airworthiness directives;
- (xix) changes in NOTAM series or distribution, new editions of AIP or major changes in their contents, coverage or format; and
- (xx) other information of a similar nature.

## **2. General specifications**

(1) The originating aeronautical information service shall select the AIC that are to be given international distribution.

(2) Each AIC shall be allocated a consecutive serial number which shall be based on the calendar year.

(3) Where AIC are distributed in more than one series, each series shall be separately identified by a letter.

(4) A checklist of AIC currently in force shall be issued at least once a year, and distributed to the recipients of AIC.

PART H

(Regulation 24)

PRE-FLIGHT AND POST-FLIGHT INFORMATION

The standards required to be met for pre-flight and post-flight information and data are as follows:

**1. Pre-flight information**

(1) Aeronautical information provided for pre-flight planning purposes at the aerodrome or heliport referred to in regulation 24, shall include relevant—

- (a) elements of the Integrated Aeronautical Information Package; and
- (b) maps and charts.

(2) Additional current information relating to the aerodrome of departure shall be provided concerning the following, where applicable:

- (a) construction or maintenance work on, or immediately adjacent to the manoeuvring area;
- (b) rough portions of any part of the manoeuvring area, whether marked or unmarked, such as broken parts of the surface of runways and taxiways;
- (c) presence and depth of water on runways and taxiways, including their effect on surface friction;
- (d) parked aircraft or other objects on, or immediately adjacent to taxiways;
- (e) presence of other temporary hazards;
- (f) presence of birds constituting a potential hazard to aircraft operations;
- (g) 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;
- (h) failure, irregular operation and changes in the operational status of SSR, radio navigation services, VHF aeromobile channels, RVR observing system, and secondary power supply; and
- (i) presence and operation of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with any associated procedures or limitations applied thereof.

(3) A summary of valid NOTAM of operational significance and other information of urgent character shall be made available to flight crews in the form of plain-language pre-flight information bulletins (PIB).

**2. Automated pre-flight information systems**

(1) The Authority shall use automated pre-flight information systems to make aeronautical information and data available to operations personnel including flight crew members for self-briefing, flight planning and flight information service purposes.

(2) The information and data made available shall comply with the provisions in clause 1.

(3) Self-briefing facilities of an automated pre-flight information system shall provide access 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.

(4) The human-to-machine interface of such facilities shall ensure easy access in a guided manner to all relevant information and data.

(5) Automated pre-flight information systems for the supply of aeronautical data and aeronautical information for self-briefing, flight planning and flight information service shall—

- (a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical information 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;
- (d) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators, as appropriate, or based on a menu-driven user interface or other appropriate mechanism as agreed between the civil aviation authority and operator concerned; and
- (e) provide for rapid response to a user request for information.

(6) 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, to aeronautical information and data and meteorological information, the Authority shall remain responsible for the quality and timeliness of the aeronautical data and aeronautical information provided by means of such a system.

### **3. Post-flight information**

The Authority shall ensure that arrangements are made to receive at aerodromes and heliports information concerning—

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

## PART I

(Regulation 25)

### TELECOMMUNICATION REQUIREMENTS

1. The standards required to be met for telecommunications requirements are as follows:

- (a) international NOTAM offices shall be connected to the AFS; and
- (b) the connections provide for printed communications.

2. Each international NOTAM office shall be connected, through the AFS, to the following points within Trinidad and Tobago for which NOTAM office provides service:

- (a) area control centers and flight information centers; and
- (b) aerodromes and heliports at which an information service is established in accordance with Part F.

PART J

(Regulation 26)

ELECTRONIC TERRAIN AND OBSTACLE DATA

The standards required to be met for electronic terrain and obstacle data are as follows:

**1. Coverage areas and requirements for data provision**

(1) The coverage areas for sets of electronic terrain and obstacle data shall be specified as—

- (a) Area 1: the entire territory of a State;
- (b) Area 2: within the vicinity of an aerodrome, subdivided as follows:
  - (i) Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists;
  - (ii) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15% 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 TMA boundary, whichever is nearest;
- (c) Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area; and
- (d) Area 4: the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway center line in the direction of the approach on a precision approach runway, Category II or III.

(2) Electronic terrain data shall be provided for Area 1. The obstacle data shall be provided for obstacles in Area 1 higher than 100 m above ground.

(3) From 12th November, 2015, at aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation.

(4) From 12th November, 2015, at aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for—

- (a) Area 2a, for those obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 7;
- (b) penetrations of the take-off flight path area obstacle identification surfaces; and
- (c) penetrations of the aerodrome obstacle limitation surfaces.

(5) From 12th November, 2015, at aerodromes regularly used by international civil aviation, electronic terrain shall be provided for—

- (a) Area 2a;
- (b) the take-off flight path area; and
- (c) the area bounded by the lateral extents of the aerodrome obstacle limitation surfaces.

(6) At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Area 4 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 7, for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain, on decision height determination by use of radio altimeters.

#### **2. Terrain data set—content, numerical specification and structure**

(1) A terrain data set shall contain 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.

(2) A terrain grid under subclause (1), shall be angular or linear and of regular or irregular shape.

(3) Sets of electronic terrain data shall include spatial or represented by position and elevation, thematic and temporal aspects for 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.

(4) In terrain data sets, only one feature type such as terrain shall be provided.

(5) The terrain feature attributes listed in Table 3 of Appendix 7 represent the minimum set of terrain attributes and those annotated as mandatory shall be recorded in the terrain data set.

(6) Electronic terrain data for each area shall conform to the applicable numerical requirements of Table 1 of Appendix 7.

#### **3. Obstacle data set—content, numerical specification and structure**

(1) Obstacle data shall comprise the digital representation of the vertical and horizontal extent of the obstacle.

(2) Obstacles shall not be included in terrain data sets.

(3) Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.

(4) In an obstacle data set, all defined obstacle feature types shall be provided and each of them shall be described according to the list of mandatory attributes provided in Table 4 of Appendix 7.

(5) Electronic obstacle data for each area shall conform to the applicable numerical requirements in Table 2 of Appendix 7.

#### **4. Terrain and Obstacle data product specifications**

(1) To allow and support the interchange and use of sets of electronic terrain and obstacle data among different data providers and data users, the ISO 19100 series of standards for geographic information shall be used as a general data modelling framework.



(2) A comprehensive statement of available electronic terrain and obstacle data sets shall be provided in the form of terrain data product specifications as well as obstacle data product specifications on which basis air navigation users will be able to evaluate the products and determine whether the products fulfil the requirements for the intended application.

(3) Each terrain data product specification shall include 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.

(4) An overview of terrain data product specification or obstacle data product specification shall provide an informal description of the product and contain general information about the data product.

(5) Where specification of terrain data is not homogenous across the whole data product, for each subject the specification scope shall be identified.

(6) Identification information concerning both terrain and obstacle data products shall include—

- (a) the title of the product;
- (b) a brief narrative summary of the content purpose, and spatial resolution if appropriate;
- (c) the geographic area covered by the data product; and
- (d) supplemental information.

(7) Content information of feature-based terrain data sets or of feature-based obstacle data sets shall each be described in terms of an application schema and a feature catalogue.

(8) Application schema shall provide a formal description of the data structure and content of data sets.

(9) Feature catalogue shall provide the semantics of all feature types and their attributes and attribute value domains, association types between feature types and feature operations, inheritance relations and constraints.

(10) Both terrain and obstacle data product specifications shall identify clearly the coverage and imagery they include and shall provide a narrative description of each of them.

(11) Both terrain data product specifications and obstacle data product specifications shall include—

- (a) information that identifies the reference system used in the data product;
- (b) the spatial reference system and temporal reference system;
- (c) the data quality requirements for each data product; and
- (d) a statement on acceptable conformance quality levels and corresponding data quality measures that cover all the data quality elements and data quality sub-elements, even if only to state that a specific data quality element or sub-element is not applicable.

(12) Terrain data product specifications shall include a data capture statement that is a general description of the sources and of processes applied for the capture of terrain data.

(13) The principles and criteria applied in the maintenance of terrain data sets and obstacle data sets shall also be provided with the data specifications, including the frequency with which data products are updated.

(14) Terrain data product specifications shall contain information on how data held with data sets is presented, such as a graphic output, as a plot or as an image.

(15) The product specifications for both terrain and obstacles data shall also contain data product delivery information which shall include delivery formats and delivery medium information.

(16) The core terrain and obstacle metadata elements shall be included in the data product specifications.

(17) Any additional metadata items required to be supplied shall be stated in each product specification together with the format and encoding of the metadata.

(18) The obstacle data product specification, supported by geographical coordinates for each aerodrome included within the dataset, shall describe the following areas:

- (a) Areas 2a, 2b, 2c, 2d of figure 1 of Appendix 7;
- (b) the take-off flight path area; and
- (c) the obstacle limitation surfaces.

## PART K

(Regulation 26A)

### AERODROME MAPPING DATA

The standards required to be met for aerodrome mapping data are as follows:

#### **1. Aerodrome mapping data—requirements for provision**

(1) Aerodrome mapping data should be 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.

#### **2. Aerodrome mapping data product specification**

(1) The ISO 19100 series of standards for geographic information shall be used as a reference framework.

(2) Aerodrome mapping data products shall be described following the ISO 19131 data product specification standard.

#### **3. Aerodrome mapping database—data set content and structure**

(1) The content and structure of aerodrome mapping data sets shall be defined in terms of an application schema and a feature catalogue.

(2) Aerodrome mapping data sets shall contain aerodrome mapping data consisting of aerodrome features.

(3) Aerodrome mapping metadata shall comply with ISO 19115.

APPENDIX 1

(Schedule 2, Part B)

CONTENTS OF AERONAUTICAL INFORMATION PUBLICATION (AIP)

This Appendix provides the structure in which an AIP is to be formatted.

PART 1—GENERAL (GEN)

Where an AIP is produced as one volume, the Preface, Record of Amendments, Records of Supplements, Checklist of AIP pages and List of current hand amendments appear only in Part 1 p- GEN and the annotation “not applicable” must be entered against each of these subsections in Parts 2 and 3.

Where an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP amendments, record of AIP supplements, checklist of AIP pages and list of current hand amendments must be included in each volume.

GEN 0.1—PREFACE

Brief description of the AIP, including the—

- (a) name of the publishing authority;
- (b) applicable ICAO documents;
- (c) publication media such as printed, online and other electronic media;
- (d) AIP structure and established regular amendment interval;
- (e) copyright policy, where applicable; and
- (f) service to contact in case of detected AIP errors or omissions.

GEN 0.2—RECORD OF AIP AMENDMENTS

A record of AIP amendments and AIRAC AIP amendments published in accordance with the AIRAC system containing the—

- (a) amendment number;
- (b) publication date;
- (c) date inserted for AIP amendments and effective date for AIRAC AIP amendments; and
- (d) initials of officer who inserted the amendment.

GEN 0.3—RECORD OF AIP SUPPLEMENTS

A record of issued AIP Supplements containing the—

- (a) supplement number;
- (b) supplement subject;
- (c) AIP section affected;
- (d) period of validity; and
- (e) cancellation record.

GEN 0.4—CHECKLIST OF AIP PAGES

A checklist of AIP pages containing the—

- (a) page number and chart title; and
- (b) publication or effective date of the aeronautical information expressed as day, month by name and year.

GEN 0.5—LIST OF HAND AMENDMENTS TO THE AIP

A list of current hand amendments to the AIP containing the—

- (a) AIP page affected;
- (b) amendment text; and
- (c) AIP amendment number by which a hand amendment was introduced.

GEN 0.6—TABLE OF CONTENTS TO PART 1

A list of all sections and subsections of the subjects enumerated in Part 1—General (GEN).

GEN 1.—NATIONAL REGULATIONS AND REQUIREMENTS

GEN 1.1—DESIGNATED AUTHORITIES

The addresses of authorities designated by the Government of Trinidad and Tobago concerned with the facilitation of international air navigation such as civil aviation, meteorology, customs, immigration, health, *en route* and aerodrome/heliport charges, agricultural quarantine and aircraft accident investigation and containing, for each authority the—

- (a) designated authority;
- (b) name of the authority;
- (c) postal address;
- (d) telephone number;
- (e) telefax number;
- (f) e-mail address;
- (g) AFS address; and
- (h) website address, where 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 and 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 and concerning entry, transit and departure of cargo.

GEN 1.5—AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

A brief description of aircraft instruments, equipment and flight documents, including the aircraft communication, navigation and surveillance equipment to be carried on aircraft and any special requirement in addition to the requirements specified in the Civil Aviation [(No. 7) Instrument and Equipment] Regulations, 2004.

GEN 1.6—SUMMARY OF NATIONAL REGULATIONS AND INTERNATIONAL AGREEMENTS AND CONVENTIONS

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

GEN 1.7—DIFFERENCES FROM ICAO STANDARDS, RECOMMENDED PRACTICES AND PROCEDURES

A list of significant differences between any written law and practices in Trinidad and Tobago and related ICAO provisions must be listed under this subsection, including the—

- (a) provision affected (Annex and edition number, paragraph);
- (b) difference in full text;
- (c) all Annexes in numerical order even if there is no difference to an Annex, in which case a NIL notification shall be provided; and
- (d) the degree of non-application of the regional supplementary procedures that shall be notified immediately following the Annex to which the supplementary procedure relates.

GEN 2.—TABLES AND CODES

GEN 2.1—MEASURING SYSTEM, AIRCRAFT MARKINGS AND HOLIDAYS

GEN 2.1.1—UNITS OF MEASUREMENT

A description of units of measurement used including table of units of measurement.

GEN 2.1.2—TEMPORAL REFERENCE SYSTEM

A description of the temporal reference 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 AIP.

GEN 2.1.3—HORIZONTAL REFERENCE SYSTEM

A brief description of the horizontal reference system used, including—

- (a) the name and designation of the reference system;
- (b) the identification and parameters of the projection;
- (c) the identification of the ellipsoid used;

- (d) the identification of the datum used;
- (e) the area of application; and
- (f) an explanation, where applicable, of the asterisk used to identify those coordinates that do not meet the accuracy requirements of Schedule 1 and Annex 14.

GEN 2.1.4—VERTICAL REFERENCE SYSTEM

A brief description of the vertical reference system used, including the—

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

GEN 2.1.5—AIRCRAFT NATIONALITY AND REGISTRATION MARKS

An indication of aircraft nationality and registration as specified in Civil Aviation [(No. 4) Registration and Markings] Regulations, 2004.

GEN 2.1.6—PUBLIC HOLIDAYS

A list of public holidays indicating the services being affected.

GEN 2.2—ABBREVIATIONS USED IN AIS PUBLICATIONS

A list of alphabetically arranged abbreviations and their respective significations used by the Authority in its AIP and in the distribution of aeronautical data and aeronautical information and with appropriate annotation for those national abbreviations that are different from those contained in the ICAO Procedures for Air Navigation Services 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 AFS to be used for encoding and decoding purposes with an annotation to locations not connected to the AFS, where applicable.

GEN 2.5—LIST OF RADIO NAVIGATION AIDS

A list of radio navigation aids arranged alphabetically, containing—

- (a) the identifier;
- (b) the name of the station;
- (c) the type of facility or aid; and
- (d) the indication whether aid serves *en route*, aerodrome or dual purposes represented by the letters EA and AE, respectively.

GEN 2.6—CONVERSION TABLES

Tables for conversion or alternately conversion formulae between—

- (a) nautical miles and kilometres and *vice versa*;
- (b) feet and metres and *vice versa*;
- (c) decimal minutes of arc and seconds of arc and *vice versa*; and
- (d) other conversions, as appropriate.

GEN 2.7—SUNRISE AND 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 of responsibility, or an alphabetical list of locations for which the times are given with a reference to the related page in the table and the sunrise and sunset tables for the selected stations or locations, including—

- (a) station name;
- (b) ICAO location indicator;
- (c) geographical coordinates in degrees and minutes;
- (d) date for which times are given;
- (e) time for the beginning of morning civil twilight;
- (f) time for sunrise;
- (g) time for sunset; and
- (h) time for the end of evening civil twilight.

GEN 3—SERVICES

GEN 3.1—AERONAUTICAL INFORMATION SERVICES

GEN 3.1.1—RESPONSIBLE SERVICE

A description of the AIS provided and its major components, including—

- (a) the service and unit name;
- (b) the postal address;
- (c) the telephone number;
- (d) the telefax number;
- (e) e-mail address;
- (f) the AFS address;
- (g) website address, where available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) 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

A description of the elements of the Integrated Aeronautical Information Package, including—

- (a) AIP and related amendment service;
- (b) AIP Supplements;
- (c) AIC including whether used to publish publication prices;
- (d) NOTAM and PIB;
- (e) checklists and lists of valid NOTAM; and
- (f) how each element may be obtained.

GEN 3.1.4—AIRAC SYSTEM

A brief description of the AIRAC system provided including a table of present and near future AIRAC dates.

GEN 3.1.5 PRE-FLIGHT INFORMATION SERVICE AT AERODROMES AND HELIPORTS

A list of aerodromes and heliports at which pre-flight information is routinely available, including an indication of the relevant—

- (a) elements of the Integrated Aeronautical Information Packages held;
- (b) maps and charts held; and
- (c) 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 the—

- (a) name of the individual, service or organization responsible;
- (b) street address and e-mail address of the individual, service or organization responsible;
- (c) telefax number of the individual, service or organization responsible;
- (d) telephone number of the individual, service or organization responsible;
- (e) hours of service represented in time period including time zone when contact can be made;
- (f) online information that can be used to contact the individual, service or organization; and
- (g) supplemental information, where necessary, on how and when to contact the individual, service or organization.

GEN 3.2—AERONAUTICAL CHARTS

GEN 3.2.1—RESPONSIBLE SERVICE

A description of service responsible for the production of aeronautical charts, including—

- (a) the service name;
- (b) the postal address;
- (c) the telephone number;



- (d) the telefax number;
- (e) e-mail address;
- (f) the AFS address;
- (g) website address, where available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.2.2—MAINTENANCE OF CHARTS

A brief description of how aeronautical charts are revised and amended.

GEN 3.2.3—PURCHASE ARRANGEMENTS

Details of how charts may be obtained containing the—

- (a) service and sales agency;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address; and
- (g) website address, where 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 the—

- (a) title of series;
- (b) scale of series;
- (c) name and number of each chart or each sheet in a series;
- (d) price per sheet; and
- (e) date of latest revision.

GEN 3.2.6—INDEX TO THE WAC-ICAO 1:1000 000

An index chart showing coverage and sheet layout for the WAC 1:1000 000 produced by the Authority where Aeronautical Chart—ICAO 1:500 000 is produced instead of WAC 1:1000 000.

Index charts must be used to indicate coverage and sheet layout for the Aeronautical Chart—ICAO 1:500 000.

GEN 3.2.7—TOPOGRAPHICAL CHARTS

Details of how topographical charts may be obtained, containing the—

- (a) name of service and agency;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address; and
- (g) website address, where available.

GEN 3.2.8—CORRECTIONS TO CHARTS NOT CONTAINED IN THE AIP

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

GEN 3.3—AIR TRAFFIC SERVICES

GEN 3.3.1—RESPONSIBLE SERVICE

A description of the ATS and its major components, including—

- (a) the service name;
- (b) the postal address;
- (c) the telephone number;
- (d) the telefax number;
- (e) e-mail address;
- (f) the AFS address;
- (g) website address, where available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.3.2—AREA OF RESPONSIBILITY

A brief description of area of responsibility for which ATS are provided.

GEN 3.3.3—TYPES OF SERVICES

A brief description of main types of ATS provided.

GEN 3.3.4—COORDINATION BETWEEN AN OPERATOR AND ATS

General conditions under which coordination between an operator and ATS 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 the units addresses arranged alphabetically, containing the—

- (a) unit name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address; and
- (g) website address, where available.

GEN 3.4—COMMUNICATION SERVICES

GEN 3.4.1—RESPONSIBLE SERVICE

A description of the service responsible for the provision of telecommunication and navigation facilities, including—

- (a) the service name;
- (b) the postal address;
- (c) the telephone number;
- (d) the telefax number;
- (e) e-mail address;
- (f) the AFS address;
- (g) website address, where available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.4.2—AREA OF RESPONSIBILITY

A brief description of area of responsibility for which telecommunication service is provided.

GEN 3.4.3—TYPES OF SERVICE

A brief description of the main types of service and facilities provided, including—

- (a) the radio navigation services;
- (b) voice or data link services;
- (c) the broadcasting service;
- (d) the language used; and
- (e) an indication of where detailed information can be obtained.

GEN 3.4.4—REQUIREMENTS AND CONDITIONS

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

GEN 3.4.5—MISCELLANEOUS

Any additional information such as selected radio broadcasting stations and telecommunications diagram.

GEN 3.5—METEOROLOGICAL SERVICES

GEN 3.5.1—RESPONSIBLE SERVICE

A brief description of the meteorological service responsible for the provision of meteorological information, including—

- (a) the service name;
- (b) the postal address;
- (c) the telephone number;
- (d) the telefax number;
- (e) e-mail address;
- (f) the AFS address;
- (g) website address, where available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.5.2—AREA OF RESPONSIBILITY

A brief description of the area and air routes for which meteorological service is provided.

GEN 3.5.3—METEOROLOGICAL OBSERVATIONS AND REPORTS

A detailed description of the meteorological observations and reports provided for international air navigation, including the—

- (a) name of the station and the ICAO location indicator;
- (b) type and frequency of observation including an indication of automatic observing equipment;
- (c) types of meteorological reports such as METAR and availability of a trend forecast;
- (d) 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 measured by an anemometer at intersection of runways and transmissometer next to touchdown zone;
- (e) hours of operation; and
- (f) indication of aeronautical climatologically information available.

GEN 3.5.4—TYPES OF SERVICE

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 unit responsible for meteorological services 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 unit responsible for meteorological services for the making and transmission of aircraft reports.

GEN 3.5.7—VOLMET SERVICE

Description of VOLMET or VOLMET service, including the—

- (a) name of transmitting station;
- (b) call sign or identification and abbreviation for the radio communication emission;
- (c) frequency or frequencies used for broadcast;
- (d) broadcasting period;
- (e) hours of service;
- (f) list of aerodromes and heliports for which reports and forecasts are included; and
- (g) 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 ATS are provided, including a list of the meteorological watch offices with the—

- (a) name of the meteorological watch office, ICAO location indicator;
- (b) hours of service;
- (c) flight information region or control area served;
- (d) SIGMET validity periods;
- (e) specific procedures applied to SIGMET information such as for volcanic ash and tropical cyclones;
- (f) procedures applied to AIRMET information in accordance with relevant regional air navigation agreements;
- (g) ATS unit provided with SIGMET and AIRMET information; and
- (h) additional information such as limitation of service.

GEN 3.5.9—OTHER AUTOMATED METEOROLOGICAL SERVICES

Description of available automated services for the provision of meteorological information such as automated pre-flight information service accessible by telephone and computer modem including the—

- (a) service name;
- (b) information available;
- (c) areas, routes and aerodromes covered; and
- (d) telephone and telefax numbers, e-mail address and where available, website address.

GEN 3.6—SEARCH AND RESCUE

GEN 3.6.1—RESPONSIBLE SERVICE

Brief description of service responsible for the provision of SAR, including—

- (a) the service and unit name;
- (b) the postal address;
- (c) the telephone number;
- (d) the telefax number;
- (e) e-mail address;
- (f) the AFS address;
- (g) website address, where available; and
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed.

GEN 3.6.2—AREA OF RESPONSIBILITY

A brief description of area of responsibility within which SAR services are provided.

GEN 3.6.3—TYPES OF SERVICE

A 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

A 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

A 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

A 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

GEN 4.1—AERODROME AND HELIPORT CHARGES

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

- (a) the landing of aircraft;
- (b) the parking, hangarage and long-term storage of aircraft;
- (c) the passenger service;

- (d) the security;
- (e) the noise-related items;
- (f) other information such as, customs, health and immigration;
- (g) the exemptions and reductions; and
- (h) methods of payment.

GEN 4.2—AIR NAVIGATION SERVICES CHARGES

A brief description of charges which may be applicable to air navigation services provided for international use, including the—

- (a) approach control;
- (b) route air navigation services;
- (c) cost basis for air navigation services and exemptions and reductions; and
- (d) methods of payment.

PART 2—EN ROUTE (ENR)

Where an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments must be included in each volume. In the case of an AIP 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*.

*Note:* Subsections may be listed alphabetically.

ENR 1. GENERAL RULES AND PROCEDURES

ENR 1.1—GENERAL RULES

Publication of the general rules as applied within the Piarco Flight Information Region.

ENR 1.2—VISUAL FLIGHT RULES

Publication of the VFR as applied within the Piarco Flight Information Region.

ENR 1.3—INSTRUMENT FLIGHT RULES

Publication of the instrument flight rules as applied within the Piarco Flight Information Region.

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 set out in Appendix 4 of Schedule 1, and appropriately annotated to indicate those airspace classes not used by the Piarco Flight Information Region.

ENR 1.4.2—ATS AIRSPACE DESCRIPTION

Other airspace description as applicable, including general textual descriptions.

ENR 1.5 HOLDING, APPROACH AND DEPARTURE PROCEDURES

ENR 1.5.1—GENERAL

A statement setting out the criteria on which holding, approach and departure procedures are established. Where the format is different from the ICAO requirements the presentation of criteria should be in a tabular form.

ENR 1.5.2—ARRIVING FLIGHTS

Presentation of conventional or area navigation procedures for arriving flights which are common to flights into or within the same type of airspace. Where 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

Presentation of conventional or area navigation procedures for departing flights which are common to flights departing from any aerodrome or heliport.

ENR 1.5.4—OTHER RELEVANT INFORMATION AND PROCEDURE

Brief description of additional information such as entry procedures, final approach alignment, holding procedures and patterns.

ENR 1.6—ATS SURVEILLANCE SERVICES AND PROCEDURES

ENR 1.6.1—PRIMARY RADAR

A description of primary radar services and procedures, including the—

- (a) supplementary services;
- (b) application of radar control service;
- (c) radar and air-ground communication failure procedures;
- (d) voice and CPDLC position reporting requirements; and
- (e) graphic portrayal of area of radar coverage.

ENR 1.6.2—SECONDARY SURVEILLANCE RADAR

A description of SSR operating procedures, including—

- (a) emergency procedures;
- (b) air-ground communication failure and unlawful interference procedures;
- (c) the system of SSR code assignment;
- (d) voice and CPDLC position reporting requirements; and
- (e) 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—

- (a) emergency procedures;
- (b) air-ground communication failure and unlawful interference procedures;
- (c) aircraft identification requirements;
- (d) voice and CPDLC position reporting requirements; and
- (e) graphic portrayal of area of ADS-B coverage.



ENR 1.6.4—OTHER RELEVANT INFORMATION AND PROCEDURE

Brief description of additional information such as radar failure procedures and transponder failure procedures.

ENR 1.7—ALTIMETER SETTING PROCEDURES

A statement of altimeter setting procedures in use, containing—

- (a) brief introduction with a statement concerning the ICAO documents on which the procedures are based together with differences to ICAO provisions, if any;
- (b) basic altimeter setting procedures;
- (c) description of altimeter setting region;
- (d) procedures applicable to operators including pilots; and
- (e) table of cruising levels.

ENR 1.8—REGIONAL SUPPLEMENTARY PROCEDURES

Presentation of SUPPS affecting the entire area of responsibility.

ENR 1.9—AIR TRAFFIC FLOW MANAGEMENT AND AIRSPACE MANAGEMENT

A brief description of ATFM system and airspace management, including the—

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

ENR 1.10—FLIGHT PLANNING

An indication of 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 the—

- (a) procedures for the submission of a flight plan;
- (b) repetitive flight plan system; and
- (c) changes to the submitted flight plan.

ENR 1.11—ADDRESSING OF FLIGHT PLAN MESSAGES

An indication, in tabular form, of the addresses allocated to flight plans, showing the—

- (a) category of flight such as IFR, VFR;
- (b) route into or through the FIR or TMA; and
- (c) message address.

ENR 1.12—INTERCEPTION OF CIVIL AIRCRAFT

A complete statement of interception procedures and visual signals to be used with a clear indication of whether ICAO provisions are applied and if not, that differences exist.

ENR 1.13—UNLAWFUL INTERFERENCE

A presentation of appropriate procedures to be applied in case of unlawful interference.

ENR 1.14—AIR TRAFFIC INCIDENTS

A description of air traffic incidents reporting system, including the—

- (a) definition of air traffic incidents;
- (b) use of the Air Traffic Incident Reporting Form;
- (c) reporting procedures including in-flight reporting procedures; and
- (d) purpose for reporting and handling of the form.

ENR 2.—AIR TRAFFIC SERVICES AIRSPACE

ENR 2.1—FIR, UIR, TMA AND CTA

A detailed description of flight information regions, upper flight information regions, and control areas such as specific CTA and TMA, including the—

- (a) name, geographical coordinates in degrees and minutes of the FIR or UIR lateral limits and in degrees, minutes and seconds of the CTA lateral limits, vertical limits and class of airspace;
- (b) identification of unit providing the service;
- (c) call sign of aeronautical station serving the unit and the language used, specifying the area and conditions, when and where to be used, if applicable;
- (d) frequencies supplemented by indications for specific purposes; and
- (e) remarks.

Control zones around military air bases not otherwise described in the AIP must be included under this heading.

Where the requirements of Civil Aviation [(No. 2) Operations] Regulations, 2004, concerning flight plans, two-way communications and position reporting apply to all flights in order to eliminate or reduce the need for interceptions 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 or portion.

A description of designated areas over which the carriage of an 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 the—

- (a) route designator, designation of the navigation specification applicable to a specified segment, name, coded designator or name-code and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

- (b) tracks or VOR radials to the nearest degree, geodetic 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;
- (c) upper and lower limits or minimum *en route* altitudes, to the nearest higher fifty metres or one hundred feet and airspace classification;
- (d) lateral limits and minimum obstacle clearance altitudes;
- (e) direction of cruising levels;
- (f) the navigation accuracy requirements for each PBN (RNAV or RNP) route segment; and
- (g) remarks, including an indication of the controlling unit, its operating channel and where applicable, its logon address and any navigation specification limitations.

ENR 3.2—UPPER ATS ROUTES

A detailed description of upper ATS routes, including the—

- (a) route designator, designation of navigation specification applicable to a specified segment, name, coded designator or name-code and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- (b) track or VOR radial to the nearest degree, geodetic 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;
- (c) upper and lower limits and airspace classification;
- (d) lateral limits;
- (e) direction of cruising levels;
- (f) the navigation accuracy requirements for each PBN (RNAV or RNP) route segment; and
- (g) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address and any navigation specification limitations.

ENR 3.3—AREA NAVIGATION ROUTES

A detailed description of area navigation routes, including the—

- (a) route designator, designation of navigation specification applicable to a specified segment, name, coded designator or name-code and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- (b) in respect of waypoints defining an area navigation route, additionally as applicable—
  - (i) station identification of the reference VOR or DME;
  - (ii) 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 or DME, if the waypoint is not collocated with it; and
  - (iii) elevation of the transmitting antenna of DME to the nearest thirty metres or one hundred feet;
- (c) magnetic bearing to the nearest degree, geodetic 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;
- (d) upper and lower limits and airspace classification;

- (e) direction of cruising levels;
- (f) the navigation accuracy requirements of each PBN (RNAV or RNP) route segment; and
- (g) remarks, including an indication of the controlling unit, its operating channel and where applicable, its logon address and any navigation specification limitations.

#### ENR 3.4—HELICOPTER ROUTES

A detailed description of helicopter routes, including the—

- (a) route designator, designation of navigation specification applicable to a specified segment, name, coded designator or name-code and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- (b) tracks or VOR radials to the nearest degree, geodetic 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;
- (c) upper and lower limits and airspace classification;
- (d) minimum flight altitudes to the nearest higher 50 metres or 100 feet;
- (e) the navigation accuracy requirements for each PBN (RNAV or RNP) route segment; and
- (f) remarks, including an indication of the controlling unit and its operating frequency, and any navigation specification limitations.

#### ENR 3.5—OTHER ROUTES

A description of other specifically designated routes which are compulsory within specified area.

*Note: Arrival, transit and departure routes which are specified in connection with procedures for traffic to and from aerodromes and heliports need not be described since they are described in the relevant section of Part 3 of the AIP—Aerodromes.*

#### ENR 3.6—EN ROUTE HOLDING

A detailed description of *en route* holding procedures, containing the—

- (a) holding identification where applicable and holding fix (navigation aid) or waypoint with geographical coordinates in degrees, minutes and seconds;
- (b) inbound track;
- (c) direction of the procedure turn;
- (d) maximum indicated airspeed;
- (e) minimum and maximum holding level;
- (f) time and distance outbound; and
- (g) indication of the controlling unit and its operating frequency.

*Note: Obstacle clearance criteria related to holding procedures are contained in ICAO Doc 8168 “Procedures for Air Navigation Services—Aircraft Operations PANS-OPS”, Volumes I and II.*

ENR 4.—RADIO NAVIGATION AIDS AND 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—

- (a) the 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;
- (b) the identification code;
- (c) the frequency and channel for each element;
- (d) the hours of operation;
- (e) the geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;
- (f) the elevation of the transmitting antenna of DME to the nearest 30 metres or 100 feet; and
- (g) remarks.

Where the operating authority of the facility is not the Authority, the name of the operating authority and facility coverage must be indicated in the remarks column.

ENR 4.2—SPECIAL NAVIGATION SYSTEMS

A description of stations associated with special navigation systems such as DECCA and LORAN, including—

- (a) the name of station or chain;
- (b) the type of service available such as master signal, slave signal and colour;
- (c) the frequency of operations together with the channel number, basic pulse rate, recurrence rate, as applicable;
- (d) the hours of operation;
- (e) the geographical coordinates in degrees, minutes and seconds of the position of the transmitting station; and
- (f) remarks.

Where the operating authority of the facility is not the Authority, the name of the operating authority and facility coverage must be indicated in the remarks column.

ENR 4.3—GLOBAL NAVIGATION SATELLITE SYSTEM

A list and description of elements of the global navigation satellite system providing the navigation service established for *en route* purposes and arranged alphabetically by name of the element, including—

- (a) the name of the GNSS element such as GPS, GLONASS, EGNOS, MSAS and WAAS;
- (b) the frequency, as appropriate;
- (c) the geographical coordinates in degrees, minutes and seconds of the nominal service area and coverage area; and
- (d) remarks.

Where the operating authority of the facility is not the Authority, 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 five-letter pronounceable name-code designators established for significant points at positions other than the site of radio navigation aids, including the—

- (a) name-code designator;
- (b) geographical coordinates in degrees, minutes and seconds of the position;
- (c) reference to ATS or other routes where the point is located; and
- (d) remarks, including supplementary definition of position 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 Authority as being significant, including the—

- (a) name of the city or town or other identification of the beacon;
- (b) type of beacon and intensity of the light in thousands of candelas;
- (c) characteristics of the signal;
- (d) operational hours; and
- (e) remarks.

ENR 5.—NAVIGATION WARNINGS

ENR 5.1—PROHIBITED, RESTRICTED AND DANGER AREAS

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

- (a) the 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 or control zone boundaries;
- (b) the upper and lower limits; and
- (c) remarks, including time of activity.

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

ENR 5.2—MILITARY EXERCISE AND TRAINING AREAS AND AIR DEFENCE IDENTIFICATION ZONE

A 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—

- (a) the geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area or control zone boundaries;
- (b) the upper and lower limits and system and means of activation announcements together with information pertinent to civil flights and applicable ADIZ procedures; and
- (c) remarks.

Time of activity and risk of interception in the event of penetration of ADIZ must be indicated in the remarks section.

ENR 5.3—OTHER ACTIVITIES OF A DANGEROUS NATURE AND OTHER POTENTIAL HAZARDS

ENR 5.3.1—OTHER ACTIVITIES OF A DANGEROUS NATURE

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

- (a) the geographical coordinates in degrees and minutes of centre of area and range of influence;
- (b) the vertical limits of activities of a dangerous nature;
- (c) the advisory measures;
- (d) the authority responsible for the provision of information; and
- (e) remarks, including time of activity.

ENR 5.3.2—OTHER POTENTIAL HAZARDS

A description, supplemented by charts where appropriate, of other potential hazards such as active volcanoes, nuclear power stations that could affect flights, including—

- (a) the geographical coordinates in degrees and minutes of location of potential hazard;
- (b) the vertical limits of the potential hazards;
- (c) any advisory measures;
- (d) the authority responsible for the provision of information; and
- (e) remarks.

ENR 5.4—AIR NAVIGATION OBSTACLES

The list of obstacles affecting air navigation in Area 1, including the—

- (a) obstacle identification or designation;
- (b) type of obstacle;
- (c) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
- (d) obstacle elevation and height to the nearest metre or foot;
- (e) type and colour of obstacle lighting where applicable; and
- (f) 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

A 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—

- (a) the designation and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area or control zone boundaries;
- (b) the vertical limits of the aerial, sporting and recreational activities;
- (c) the operator or user telephone number; and
- (d) remarks.

ENR 5.6—BIRD MIGRATION AND AREAS WITH SENSITIVE FAUNA

A description, supplemented by charts where practicable, of movements of birds associated with migration, including migration routes and permanent resting areas and areas with sensitive fauna.

ENR 6.—*EN ROUTE* CHARTS

*En route* Chart—ICAO and index charts to be included in this section.

PART 3—AERODROMES (AD)

Where an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments must be included in each volume. In the case of an AIP 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 1.—AERODROMES AND HELIPORTS

INTRODUCTION

AD 1.1—AVAILABILITY OF AERODROME AND HELIPORT

AD 1.1.1—GENERAL CONDITIONS

A brief description of the authority responsible for aerodromes and heliports, including—

- (a) the general conditions under which aerodromes and heliports and associated facilities are available for use; and
- (b) a statement concerning the ICAO documents on which the services are based and a reference to the AIP 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 Category II and Category 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

Where applicable, other information of a similar nature.

AD 1.2—RESCUE AND FIRE-FIGHTING SERVICES AND SNOW PLAN

AD 1.2.1—RESCUE AND FIRE-FIGHTING SERVICES

A brief description of rules governing the establishment of rescue and fire-fighting services at aerodromes and heliports available for public use together with an indication of rescue and fire-fighting categories established by the aerodrome authority.



AD 1.3—INDEX TO AERODROMES AND HELIPORTS

A list, supplemented by graphic portrayal, of aerodromes and heliports within Trinidad and Tobago, including the—

- (a) aerodrome or heliport name and ICAO location indicator;
- (b) type of traffic permitted to use the aerodrome or heliport such as international or national, IFR or VFR, scheduled or non-scheduled, general aviation, military and other; and
- (c) reference to AIP, Part 3 subsection in which the aerodrome and heliport details are presented.

AD 1.4—GROUPING OF AERODROMES AND HELIPORTS

A brief description of the criteria applied by the Authority in grouping aerodromes and heliports such as international or national; primary or secondary, major or other and civil or military for the purpose of the production, distribution and provision of information.

AD 1.5—STATUS OF CERTIFICATION OF AERODROMES

A list of aerodromes in Trinidad and Tobago, indicating the status of certification, including—

- (a) aerodrome name and ICAO location indicator;
- (b) date where applicable;
- (c) validity of certification; and
- (d) remarks.

AD 2.—AERODROMES

In this Part the four asterisk “\*\*\*\*” appearing at each heading is to be replaced by the relevant ICAO location indicator.

\*\*\*\* AD 2.1—AERODROME LOCATION INDICATOR AND NAME

The ICAO location indicator allocated to the aerodrome and the name of aerodrome must be provided. An ICAO 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

Aerodrome geographical and administrative data including—

- (a) the aerodrome reference point represented by geographical coordinates in degrees, minutes and seconds and its site;
- (b) the direction and distance of aerodrome reference point from centre of the city or town which the aerodrome serves;
- (c) the aerodrome elevation to the nearest metre or foot, and reference temperature;
- (d) where appropriate, the geoid undulation at the aerodrome elevation position to the nearest metre or foot;
- (e) the magnetic variation to the nearest degree, date of information and annual change;
- (f) name of aerodrome operator, address, telephone, telefax, e-mail address, AFS address and where available, website address;
- (g) the types of traffic permitted to use the aerodrome such as IFRNVFR; and
- (h) remarks.

## \*\*\*\* AD 2.3—OPERATIONAL HOURS

A detailed description of the hours of operation of services at the aerodrome, such as—

- (a) aerodrome operator;
- (b) customs and immigration;
- (c) health and sanitation;
- (d) AIS briefing office;
- (e) ATS reporting office;
- (f) MET briefing office;
- (g) air traffic service;
- (h) fuelling;
- (i) handling;
- (j) security;
- (k) de-icing where applicable; and
- (l) remarks.

## \*\*\*\* AD 2.4—HANDLING SERVICES AND FACILITIES

A detailed description of the handling services and facilities available at the aerodrome, such as—

- (a) cargo-handling facilities;
- (b) fuel and oil types;
- (c) fuelling facilities and capacity;
- (d) de-icing facilities where available;
- (e) hangar space for visiting aircraft;
- (f) repair facilities for visiting aircraft; and
- (g) 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—

- (a) hotels at or in the vicinity of aerodrome;
- (b) restaurants at, or in the vicinity of aerodrome;
- (c) transportation options;
- (d) medical facilities;
- (e) banks and post offices at, or in the vicinity of aerodrome;
- (f) tourist offices; and
- (g) remarks.

## \*\*\*\* AD 2.6—RESCUE AND FIRE-FIGHTING SERVICES

A detailed description of the rescue and fire-fighting services and equipment available at the aerodrome, including—

- (a) aerodrome category for fire-fighting;
- (b) rescue equipment;
- (c) capability for removal of disabled aircraft; and
- (d) remarks.

\*\*\*\* AD 2.7—SEASONAL AVAILABILITY—CLEARING

A detailed description of the equipment and operational priorities established for the clearance of aerodrome movement areas, including—

- (a) the type of clearing equipment;
- (b) clearance priorities; and
- (c) remarks.

\*\*\*\* AD 2.8—APRONS, TAXIWAYS AND CHECK LOCATIONS OR POSITIONS DATA

Details related to the physical characteristics of aprons, taxiways and check locations or positions of designated checkpoints, including—

- (a) designation, surface and strength of aprons;
- (b) designation, width, surface and strength of taxiways;
- (c) the location and elevation to the nearest metre or foot of altimeter checkpoints;
- (d) the location of VOR checkpoints;
- (e) the position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- (f) remarks.

If check locations or positions are shown 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—

- (a) the use of aircraft stand identification signs, taxiway guide lines and visual docking or parking guidance system at aircraft stands;
- (b) the runway and taxiway markings and lights;
- (c) stop bars where applicable; and
- (d) remarks.

\*\*\*\* AD 2.10—AERODROM OBSTACLES

A detailed description of obstacles, in respect of—

- (1) obstacles in Area 2 as follows:
  - (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 metre or tenth of foot;
  - (e) obstacle marking, and type and colour of obstacle lighting where applicable;
  - (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.

- (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 where provided, the following information is given:
- (a) the obstacle identification or designation;
  - (b) the type of obstacle;
  - (c) the obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
  - (d) the obstacle elevation and height to the nearest metre or foot;
  - (e) the obstacle marking, and type and colour of obstacle lighting where applicable;
  - (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) a NIL indication, if appropriate.

\*\*\*\* AD 2.11—METEOROLOGICAL INFORMATION PROVIDED

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

- (a) the name of the associated meteorological office;
- (b) the hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- (c) the office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts;
- (d) the availability of the trend forecasts for the aerodrome and interval of issuance;
- (e) the information on how briefing or consultation is provided;
- (f) types of flight documentation supplied and the language used in flight documentation;
- (g) charts and other information displayed or available for briefing or consultation;
- (h) supplementary equipment available for providing information on meteorological conditions, such as weather radar and receiver for satellite images;
- (i) the ATS unit provided with meteorological information; and
- (j) any additional information such as limitation of service.

\*\*\*\* AD 2.12—RUNWAY PHYSICAL CHARACTERISTICS

A detailed description of runway physical characteristics for each runway, including—

- (a) the designations;
- (b) true bearings to one-hundredth of a degree;
- (c) the dimensions of runways to the nearest metre or foot;
- (d) the strength of pavement to include PCN and associated data and surface of each runway and associated stopways;

- (e) the geographical coordinates in degrees, minutes, seconds and hundredths of seconds for each threshold and runway end, and where appropriate geoid undulation of—
  - (i) thresholds of a non-precision approach runway to the nearest metre or foot; and
  - (ii) thresholds of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
- (f) elevations of—
  - (i) thresholds of a non-precision approach runway to the nearest metre or foot; and
  - (ii) 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;
- (g) the slope of each runway and associated stopways;
- (h) the dimensions of stopway where applicable to the nearest metre or foot;
- (i) the dimensions of clearway where applicable to the nearest metre or foot;
- (j) the dimensions of strips;
- (k) the existence of an obstacle-free zone; and
- (l) remarks.

\*\*\*\* AD 2.13—DECLARED DISTANCES

A detailed description of declared distances to the nearest metre or foot for each direction of each runway, including—

- (a) the runway designator;
- (b) the take-off run available;
- (c) the take-off distance available, and where applicable, alternative reduced declared distances;
- (d) the accelerate-stop distance available;
- (e) the landing distance available; and
- (f) remarks, including runway entry or start point where alternative reduced declared distances have been declared.

Where 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.

\*\*\*\* AD 2.14—APPROACH AND RUNWAY LIGHTING

A detailed description of approach and runway lighting, including—

- (a) the runway designator;
- (b) the type, length and intensity of approach lighting system;
- (c) the runway threshold lights, colour and wing bars;
- (d) the type of visual approach slope indicator system;
- (e) the length of runway touchdown zone lights;
- (f) the length, spacing, colour and intensity of runway centre line lights;
- (g) the length, spacing, colour and intensity of runway edge lights;
- (h) the colour of runway end lights and wing bars;
- (i) the length and colour of stopway lights; and
- (j) remarks.

## \*\*\*\* AD 2.15—OTHER LIGHTING, SECONDARY POWER SUPPLY

A description of other lighting and secondary power supply, including—

- (a) the location, characteristics and hours of operation of aerodrome beacon or identification beacon where applicable;
- (b) the location and lighting where applicable of anemometer or landing direction indicator;
- (c) the taxiway edge and taxiway centre line lights;
- (d) secondary power supply including switch-over time; and
- (e) remarks.

## \*\*\*\* AD 2.16—HELICOPTER LANDING AREA

A detailed description of helicopter landing area provided at the aerodrome, including—

- (a) the geographical coordinates in degrees, minutes, seconds and hundredths of seconds and where appropriate, geoid undulation of the geometric centre of touchdown and lift-off or of each threshold of final approach and take-off area—
  - (i) for non-precision approaches, to the nearest metre or foot; and
  - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (b) the TLOF and FATO area elevation—
  - (i) for non-precision approaches, to the nearest metre or foot; and
  - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (c) the TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;
- (d) true bearings to one-hundredth of a degree of FATO;
- (e) the declared distances available, to the nearest metre or foot;
- (f) the approach and FATO lighting; and
- (g) remarks.

## \*\*\*\* AD 2.17—AIR TRAFFIC SERVICES AIRSPACE

A detailed description of ATS airspace organized at the aerodrome, including—

- (a) the airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- (b) the vertical limits;
- (c) the airspace classification;
- (d) the call sign and language of the ATS unit providing service;
- (e) the transition altitude;
- (f) hours of applicability; and
- (g) remarks.

## \*\*\*\* AD 2.18—AIR TRAFFIC SERVICES COMMUNICATION FACILITIES

A detailed description of air traffic services communication facilities established at the aerodrome, including—

- (a) the service designation;
- (b) the call sign;

- (c) channel;
- (d) logon address, as appropriate;
- (e) hours of operation; and
- (f) remarks.

\*\*\*\* AD 2.19—RADIO NAVIGATION AND LANDING AIDS

A detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including—

- (a) the type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS or MLS, basic GNSS, SBAS, and GBAS and for VOR, ILS and MLS also station declination to the nearest degree used for technical line-up of the aid;
- (b) the identification, if required;
- (c) the frequency(ies), channel number(s), service provider, and reference path identifier(s) (RPH), as appropriate;
- (d) the hours of operation, as appropriate;
- (e) the geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- (f) the elevation of the transmitting antenna of DME to the nearest 30 metres or 100 feet and of DME/P to the nearest 3 metres or 10 feet, elevation of GBAS reference point to the nearest metre or foot. For SBAS, the ellipsoid height of the landing threshold point (LPT) or the fictitious threshold point (FTP) to the nearest metre of foot;
- (g) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
- (h) remarks.

When the same aid is used for both *en route* and aerodrome purposes, a description must also be given in section ENR 4. Where the GBAS serves more than one aerodrome, description of the aid must be provided under each aerodrome. Where the operating authority of the facility is not the Authority, the name of the operating authority and facility coverage must be indicated in the remarks column.

\*\*\*\* AD 2.20—LOCAL AERODROME REGULATIONS

A detailed description of regulations applicable to the use of the aerodrome including the acceptability of training flights, non-radio and micro-light aircraft and similar regulations, and to ground manoeuvring and parking but excluding flight procedures.

\*\*\*\* AD 2.21—NOISE ABATEMENT PROCEDURES

A detailed description of noise abatement procedures established at the aerodrome.

\*\*\*\* AD—2.22 FLIGHT PROCEDURES

A detailed description of the conditions and flight procedures, including radar or ADS-B procedures, established on the basis of airspace organization at the aerodrome and where established, detailed description of the low visibility procedures at the aerodrome, including—

- (a) runways and associated equipment authorized for use under low visibility procedures;
- (b) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;

- (c) description of ground marking/lighting for use under low visibility procedures; and
- (d) 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

Charts related to an aerodrome are to be included in the following order:

- (a) Aerodrome and Heliport Chart—ICAO;
- (b) Aircraft Parking and Docking Chart—ICAO;
- (c) Aerodrome Ground Movement Chart—ICAO;
- (d) Aerodrome Obstacle Chart—ICAO Type A;
- (e) Aerodrome Terrain and Obstacle Chart—ICAO (Electronic);
- (f) Precision Approach Terrain Chart—ICAO for precision approach Categories II and III runways;
- (g) Area Chart—ICAO for departure and transit routes;
- (h) Standard Departure Chart—Instrument—ICAO;
- (i) Area Chart—ICAO for arrival and transit routes;
- (j) Standard Arrival Chart—Instrument—ICAO;
- (k) Radar ATC Surveillance Minimum Altitude Chart—ICAO;
- (l) Instrument Approach Chart—ICAO for each runway and procedure type;
- (m) Visual Approach Chart—ICAO; and
- (n) bird concentrations in the vicinity of the aerodrome.

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

Where 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.

\*\*\*\* AD 3.1—HELIPORT LOCATION INDICATOR AND NAME

The ICAO location indicator assigned to the heliport and the name of heliport must be provided. An ICAO 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—

- (a) the heliport reference point represented by geographical coordinates in degrees, minutes and seconds and its site;
- (b) the direction and distance of heliport reference point from centre of the city or town which the heliport serves;
- (c) the heliport elevation to the nearest metre or foot, and reference temperature;



- (d) where appropriate, geoid undulation at the heliport elevation position to the nearest metre or foot;
- (e) the magnetic variation to the nearest degree, date of information and annual change;
- (f) name of heliport operator, address, telephone, telefax, e-mail address, AFS address and, where available, website address;
- (g) the types of traffic permitted to use the heliport such as IFR or VFR; and
- (h) remarks.

\*\*\*\* AD 3.3—OPERATIONAL HOURS

A detailed description of the hours of operation of services at the heliport, such as—

- (a) heliport operator;
- (b) customs and immigration;
- (c) health and sanitation;
- (d) AIS briefing office;
- (e) ATS reporting office;
- (f) MET briefing office;
- (g) air traffic service;
- (h) fuelling;
- (i) handling;
- (j) security;
- (k) de-icing, as applicable; and
- (l) remarks.

\*\*\*\* AD 3.4—HANDLING SERVICES AND FACILITIES

A detailed description of the handling services and facilities available at the heliport, such as—

- (a) cargo-handling facilities;
- (b) fuel and oil types;
- (c) fuelling facilities and capacity;
- (d) de-icing facilities;
- (e) hangar space for visiting helicopters;
- (f) repair facilities for visiting helicopters; and
- (g) remarks.

\*\*\*\* AD 3.5—PASSENGER FACILITIES

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

- (a) hotels at, or in the vicinity of the heliport;
- (b) restaurants at, or in the vicinity of the heliport;
- (c) transportation options;
- (d) medical facilities;
- (e) banks and post offices at, or in the vicinity of the heliport;
- (f) tourist offices; and
- (g) remarks.

\*\*\*\* AD 3.6—RESCUE AND FIRE-FIGHTING SERVICES

A detailed description of the rescue and fire-fighting services and equipment available at the heliport, including—

- (a) the heliport category for fire-fighting;
- (b) the rescue equipment;
- (c) the capability for removal of disabled helicopter; and
- (d) remarks.

\*\*\*\* AD 3.7—SEASONAL AVAILABILITY—CLEARING

A detailed description of the equipment and operational priorities established for the clearance of heliport movement areas, including—

- (a) the types of clearing equipment;
- (b) the clearance priorities; and
- (c) remarks.

\*\*\*\* AD 3.8—APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

A detailed description of the physical characteristics of aprons, taxiways and locations or positions of designated checkpoints, including—

- (a) designation, surface and strength of aprons, helicopter stands;
- (b) designation, width and surface type of helicopter ground taxiways;
- (c) the width and designation of helicopter air taxiway and air transit route;
- (d) the location and elevation to the nearest metre or foot of altimeter checkpoints;
- (e) the location of VOR checkpoints;
- (f) the position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- (g) remarks.

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

\*\*\*\* AD 3.9—MARKINGS AND MARKERS

A brief description of final approach and take-off area and taxiway markings and markers, including—

- (a) the final approach and take-off markings;
- (b) the taxiway markings, air taxiway markers and air transit route markers; and
- (c) remarks.

\*\*\*\* AD 3.10—HELIPORT OBSTACLES

Detailed description of obstacles, including—

- (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; and
- (g) NIL indication, if appropriate.

\*\*\*\* AD 3.11—METEOROLOGICAL INFORMATION PROVIDED

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

- (a) the name of the associated meteorological office;
- (b) the hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- (c) the office responsible for preparation of TAFs, and periods of validity of the forecasts;
- (d) the availability of the trend forecasts for the heliport, and interval of issuance;
- (e) the information on how briefing and/or consultation is provided;
- (f) the type of flight documentation supplied and language used in flight documentation;
- (g) the charts and other information displayed or available for briefing or consultation;
- (h) the supplementary equipment available for providing information on meteorological conditions, such as weather radar and receiver for satellite images;
- (i) the ATS units provided with meteorological information; and
- (j) any additional information such as limitation of service.

\*\*\*\* AD 3.12—HELIPORT DATA

A detailed description of the heliport dimensions and related information, including—

- (a) the heliport type such as surface-level, elevated or helideck;
- (b) the TLOF area dimensions to the nearest metre or foot;
- (c) the true bearings to one-hundredth of a degree of FATO area;
- (d) the dimensions to the nearest metre or foot of FATO, and surface type;
- (e) the surface and bearing strength in tonnes of TLOF;
- (f) the 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—
  - (i) for non-precision approaches, to the nearest metre or foot; and
  - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (g) the TLOF and FATO slope and elevation—
  - (i) for non-precision approaches to the nearest metre or foot; and
  - (ii) for precision approaches to the nearest tenth of a metre or tenth of a foot;
- (h) the dimensions of safety area;
- (i) the dimensions, to the nearest metre or foot, of helicopter clearway;
- (j) the existence of an obstacle-free sector; and
- (k) remarks.

\*\*\*\* AD 3.13—DECLARED DISTANCES

A detailed description of declared distances to the nearest metre or foot, where relevant for a heliport, including the—

- (a) take-off distance available, and where applicable, alternative reduced declared distances;
- (b) rejected take-off distance available;
- (c) landing distance available; and
- (d) remarks, including entry or start point where alternative reduced declared distances have been declared.

\*\*\*\* AD 3.14—APPROACH AND FATO LIGHTING

A detailed description of approach and FATO lighting, including—

- (a) the type, length and intensity of approach lighting system;
- (b) the type of visual approach slope indicator system;
- (c) the characteristics and location of FATO area lights;
- (d) the characteristics and location of aiming point lights;
- (e) the characteristics and location of TLOF lighting system; and
- (f) remarks.

\*\*\*\* AD 3.15—OTHER LIGHTING, SECONDARY POWER SUPPLY

A description of other lighting and secondary power supply, including—

- (a) the location, characteristics and hours of operation of heliport beacon;
- (b) the location and lighting of WDI;
- (c) the taxiway edge and taxiway centre line lights;
- (d) the secondary power supply including switch-over time;
- (e) hours of applicability; and
- (f) remarks.

\*\*\*\* AD 3.16—AIR TRAFFIC SERVICES AIRSPACE

A detailed description of ATS airspace organized at the heliport, including—

- (a) the airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- (b) the vertical limits of the ATS airspace at the heliport;
- (c) the airspace classification;
- (d) the call sign and language of ATS unit providing service;
- (e) the transition altitude; and
- (f) remarks.

\*\*\*\* AD 3.17—AIR TRAFFIC SERVICES COMMUNICATION FACILITIES

A detailed description of air traffic services communication facilities established at the heliport, including—

- (a) the service designation;
- (b) the call sign;
- (c) the frequency;
- (d) the hours of operation; and
- (e) remarks.

\*\*\*\* AD 3.18—RADIO NAVIGATION AND LANDING AIDS

A detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the heliport, including—

- (a) the 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;
- (b) the identification of the radio navigation and landing aids, if required;
- (c) the frequency, as appropriate;
- (d) the hours of operation, as appropriate;
- (e) the geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- (f) the elevation of the transmitting antenna of DME to the nearest 100 feet and of DME/P to the nearest 10 feet; and
- (g) remarks.

Where the same aid is used for both *en route* and heliport purposes, a description must also be given in section ENR 4. Where the ground-based augmentation system (GBAS) serves more than one heliport, description of the aid must be provided under each heliport. Where the operating authority of the facility is not the Authority, the name of the operating authority and facility coverage must be indicated in the remarks column.

\*\*\*\* AD 3.19—LOCAL HELIPORT REGULATIONS

A detailed description of regulations applicable to the use of the heliport, including the acceptability of training flights, non-radio and micro-light aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

\*\*\*\* AD 3.20—NOISE ABATEMENT PROCEDURES

A detailed description of noise abatement procedures established at the heliport.

\*\*\*\* AD 3.21—FLIGHT PROCEDURES

A 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 and where established, detailed description of the low visibility procedures at the heliport, including—

- (a) touchdown and lift-off (TLOF) area(s) and associated equipment authorized for use under low visibility procedures;
- (b) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
- (c) description of ground marking/lighting for use under low visibility procedures; and
- (d) 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

Charts related to a heliport shall be included in the following order:

- (a) Aerodrome and Heliport Chart—ICAO;
- (b) Area Chart—ICAO for departure and transit routes;
- (c) Standard Departure Chart—Instrument—ICAO;
- (d) Area Chart—ICAO for arrival and transit routes;
- (e) Standard Arrival Chart—Instrument—ICAO;
- (f) ATC Surveillance Minimum Altitude Chart—ICAO;
- (g) Instrument Approach Chart—ICAO for each procedure type;
- (h) Visual Approach Chart—ICAO; and
- (i) A chart showing bird concentrations in the vicinity of heliport.

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

APPENDIX 2

ASHTAM FORMAT

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)	
(Abbreviated heading)	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	
(Abbreviated heading)	(VA*2 SERIAL NUMBER)	(LOCATION INDICATOR)	(DATE/TIME OF ISSUANCE)
(Abbreviated heading)	(OPTIONAL GROUP)		
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) <sup>1</sup>			E)
(EXISTENCE AND HORIZONTAL/VERTICAL EXTENT OF VOLCANIC ASH CLOUD) <sup>4</sup>			F)
(DIRECTION OF MOVEMENT OF ASH CLOUD) <sup>4</sup>			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)
NOTES:			
1. See also Appendix 2 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

- (a) 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 clause 3(e) below;
- (b) 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;
- (c) issuance of an ASHTAM giving information on a volcanic eruption, in accordance with clause 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”;

- (d) the maximum period of validity of ASHTAM is twenty-four hours;
- (e) new ASHTAM must be issued where there is a change in the level of alert.

## 2. Abbreviated heading

Following the usual AFTN communications header, the abbreviated heading “TT AAiiii CCCC MMYYGgg (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 (gg) UTC;

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

*Note: Brackets in (BBB) are used to indicate that this group is optional.*

Example: Abbreviated heading of ASHTAM for Auckland Oceanic FIR, report on 7th November, at 0620 UTC:

VANZ0001 NZZO 11070620

## 3. Content of ASHTAM

- (a) Item A—Flight information region affected, plain-language equivalent of the location indicator given in the abbreviated heading, in this example “Auckland Oceanic FIR”;
- (b) Item B—Date and time (UTC) of first eruption;
- (c) Item C—Name of volcano, and number of volcano as listed in the ICAO 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;
- (d) Item D—Latitude and Longitude of the volcano in whole degrees or radial and distance of volcano from NAVAID (as listed in the ICAO 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);



(e) Item E—Colour code for level of alert indicating volcanic activity, including any previous level of alert colour code as follows:

<i>Level of alert colour code</i>	<i>Status of activity of Volcano</i>
GREEN ALERT	Volcano is in normal, non-eruptive state; <i>or, after a change from a higher alert level:</i> Volcanic activity considered to have ceased and volcano reverted to its normal, non-eruptive state.
YELLOW ALERT	Volcano is experiencing signs of elevated unrest above known background levels. <i>or, after a change from higher alert level:</i> Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.
ORANGE ALERT	Volcano is exhibiting heightened unrest with increased likelihood of eruption; <i>or,</i> Volcanic eruption is underway with no or minor ash emission. [ <i>Specify ash-plume height where possible</i> ].
RED ALERT	Eruption is forecasted to be imminent with significant emission of ash into the atmosphere likely; <i>or,</i> Eruption is underway with significant emission of ash into the atmosphere [ <i>specify ash-plume height if possible</i> ].
<p><i>Note: 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 should 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".</i></p>	
<p>(f) Item F—Where volcanic ash cloud of operational significance is reported, indicate the horizontal extent and base and top of the ash cloud using latitude and longitude in whole degrees and altitudes in thousands of metres or feet or radial and distance from source volcano;</p> <p>(g) 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;</p> <p>(h) 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;</p> <p>(i) Item H—Indicate air routes and portions of air routes and flight levels affected, or expected to become affected;</p> <p>(j) Item I—Indicate closure of airspace, air routes or portions of air routes, and availability of alternative routes;</p> <p>(k) 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; and</p> <p>(l) Item K—Include in plain language, any operationally significant information additional to the foregoing.</p>	

## APPENDIX 3

[Part D, Clauses 1(1), 6 and 7]

## INFORMATION TO BE NOTIFIED BY AIRAC

## PART 1

1. The AIRAC shall provide information on the establishment and withdrawal of, and premeditated significant changes including operational trials as follows:

- (a) horizontal and vertical limits and regulations and procedures applicable to—
  - (i) flight information regions;
  - (ii) control areas;
  - (iii) control zones;
  - (iv) advisory areas;
  - (v) ATS routes;
  - (vi) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and ADIZ;
  - (vii) permanent areas or routes or portions thereof where the possibility of interception exists;
- (b) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, communication and surveillance facilities;
- (c) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;
- (d) transition levels, transition altitudes and minimum sector altitudes;
- (e) meteorological facilities including broadcasts and procedures;
- (f) runways and stopways;
- (g) taxiways and aprons;
- (h) aerodrome ground operating procedures including low visibility procedures;
- (i) approach and runway lighting; and
- (j) aerodrome operating minima, where published by a State.

## PART 2

2. The AIRAC shall provide information on the establishment and withdrawal of, and premeditated significant changes to—

- (a) position, height and lighting of navigational obstacles;
- (b) hours of service: aerodromes, facilities and services;
- (c) customs, immigration and health services;
- (d) temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft; and
- (e) temporary areas or routes or portions thereof where the possibility of interception exists.

PART 3

3. The establishment of, and premeditated major changes to—
  - (a) new aerodromes for international IFR operations;
  - (b) new runways for IFR operations at international aerodromes;
  - (c) design and structure of the air traffic services route network;
  - (d) design and structure of a set of terminal procedures including change of procedure bearings due to magnetic variation change; and
  - (e) circumstances listed in Part 1 where the entire State or any significant portion thereof is affected or where cross-border coordination is required.

## APPENDIX 4

[Schedule 2, Part C, Clause 3(8)]

## PREDETERMINED DISTRIBUTION SYSTEM FOR NOTAM

1. The predetermined distribution system provides for incoming NOTAM and ASHTAM to be channeled through the AFS direct to designated addressees predetermined by the receiving country concerned while concurrently being routed to the international NOTAM office for checking and control purposes.

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

(a) First and second letters:

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

(b) Third and fourth letters:

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

(c) Fifth letter:

The fifth letter differentiating between NOTAM (letter "N") and ASHTAM (letter "V").

(d) 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.

*Note: The fifth, sixth and seventh letters replace the three-letter designator YNY which, in the normal distribution system, denotes an international NOTAM office.*

(e) Eighth letter:

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

3. The Authority shall inform the States from which it received NOTAM of the sixth and seventh letters to be used under different circumstances to ensure proper routing.

APPENDIX 5

[Part C, Clause 2(1) and (13)]

NOTAM FORMAT

Priority indicator											→	
Address												
Date and time of filing											→	
Originator's indicator												
Message series, number and identifier												
NOTAM containing new information	(series and number/year)					NOTAMN						
NOTAM replacing a previous NOTAM	(series and number/year)					NOTAMR ..... (series and number/year of NOTAM to be replaced)						
NOTAM cancelling a previous NOTAM	(series and number/year)					NOTAMC ..... (series and number/year of NOTAM to be cancelled)						
Qualifiers												
	IR	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)											ISI* 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 NOTAM 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. NOTAM numbering

Each NOTAM 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 1st January with the number 0001).

### 3. Qualifiers Item Q

Item Q is divided in 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:

(a) FIR—

- (i) where the subject of the information is located geographically within one FIR, the ICAO location indicator shall be that of the FIR concerned. When an aerodrome is situated within an overlying FIR of another State, the first field of Item (Q) shall contain the code for that overlying FIR; or
- (ii) where the subject of the information is located geographically with more than one FIR, the FIR field shall be composed of the ICAO nationality letters of the State originating the NOTAM followed by “XX”. The ICAO location indicators of the FIRs concerned shall then be listed in Item (A) or indicator of the State or non-governmental agency which is responsible for provision of air navigation service in more than one State;

(b) NOTAM CODE:

All NOTAM 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, the NOTAM Selection Criteria contained in Doc 8126 or insert one of the following combinations, as appropriate—

- (i) If the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert “XX” as the second and third letters (e.g., QXXAK);
- (ii) If the condition of the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert “XX” as the fourth and fifth letters (e.g., QFAXX);
- (iii) Where a NOTAM containing operationally significant information is issued in accordance with Appendix 4 and Chapter 6 and when it is used to announce existence of AIRAC AIP Amendments or Supplements, insert “TT” as the fourth and fifth letters of the NOTAM Code;
- (iv) Where a NOTAM is issued containing a checklist of valid NOTAM, insert “KKKK” as the second, third, fourth and fifth letters; and
- (v) The following fourth and fifth letters of the NOTAM Code shall be used in NOTAM cancellations:

AK: RESUMED NORMAL OPERATION

AL: OPERATIVE OR RE-OPERATIVE SUBJECT  
TO PREVIOUSLY PUBLISHED  
LIMITATIONS OR CONDITIONS

AO: OPERATIONAL

CC: COMPLETED

CN: CANCELLED

HV: WORK COMPLETED

XX: PLAIN LANGUAGE

(c) TRAFFIC

I = IFR

V = VFR

K = NOTAM is a checklist

(d) PURPOSE

N = NOTAM selected for the immediate attention of flight crew members

B = NOTAM of operational significance selected for PIB entry

O = NOTAM concerning flight operations

M = Miscellaneous NOTAM; not subject for a briefing, but it is available on Request

K = NOTAM is a checklist

(e) SCOPE

A = Aerodrome

E = *En route*

W = Nav Warning

K = NOTAM is a checklist

(f) LOWER AND 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 with 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. Where the subject does not contain specific height information, insert "000" for LOWER and "999" for UPPER as default values.

(g) 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 NOTAM affects the entire FIR, enter the default value "999" for radius.

4. Item A

Insert the location indicator as contained in ICAO Doc 7910 of the aerodrome or FIR in which the facility, airspace, or condition being reported on is located. More than one FIR or IR may be indicated when appropriate. If there is no available ICAO location indicator, use the ICAO nationality letter as given in ICAO 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 ICAO location indicator allocated for a GNSS element or the common location indicator allocated for all elements of GNSS (except GBAS).

5. Item B

For the date-time group, use a ten-figure group, giving year, month, day, hours and minutes in UTC and this entry shall be the date-time at which the NOTAMN, comes into force. In the cases of NOTAMR and NOTAMC, the date-time group is the actual date and time of the NOTAM origination. The start of a day shall be indicated by "0000".

6. Item C

With the exception of NOTAMC, a ten-figure day-time 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 the day shall be indicated by '2359' and not '2400'. Where the information on timing is uncertain, the approximate duration shall be indicated using a date-time group followed by the abbreviation "EST". Any NOTAM which includes an "EST" shall be cancelled or replaced before the date-time specified in Item C.

7. Item D

Where 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 date-times indicated in Items (B) and (C), insert such information under Item (D). Where Item (D) exceeds two hundred characters, consideration shall be given to providing such information in a separate, consecutive NOTAM.

8. Item E

Use decoded NOTAM Code, complemented where necessary by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language. When NOTAM 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 NOTAMC, a subject reference and status message shall be included to enable accurate plausibility checks.

9. 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.



APPENDIX 6

AERONAUTICAL DATA PUBLICATION, RESOLUTION AND INTEGRITY  
CLASSIFICATION

TABLE 1 LATITUDE AND LONGITUDE

[Schedule 2, Part A, Clause 2(13)]

Latitude and Longitude	Publication Resolution	Integrity classification
Flight information region boundary points	1 min	$1 \times 10^{-3}$ routine
P, R, D area boundary points (outside CTA/CTR boundaries)	1 min	$1 \times 10^{-3}$ routine
P, R, D area boundary points (inside CTA/CTR boundaries)	1 sec	$1 \times 10^{-5}$ essential
CTA/CTR boundary points	1 sec	$1 \times 10^{-5}$ essential
<i>En route</i> nav aids, intersections and waypoints, and holding STAR/SID points	1 sec	$1 \times 10^{-5}$ essential
Obstacles in Area 1 (the entire State territory)	1 sec	$1 \times 10^{-3}$ routine
Aerodrome/heliport reference point	1 sec	$1 \times 10^{-3}$ routine
NAVAIDS located at aerodrome/heliport	1/10 sec	$1 \times 10^{-5}$ essential
Obstacles in Area 3	1/10 sec	$1 \times 10^{-5}$ essential
Obstacle in Area 2	1/10 sec	$1 \times 10^{-5}$ essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure	1/10 sec	$1 \times 10^{-5}$ essential
Runway threshold	1/100 sec	$1 \times 10^{-8}$ critical
Runway end	1/100 sec	$1 \times 10^{-8}$ critical
Runway holding point	1/100 sec	$1 \times 10^{-8}$ critical
Taxiway centre line/parking guidance line points	1/100 sec	$1 \times 10^{-5}$ essential
Taxiway intersection marking line	1/100 sec	$1 \times 10^{-5}$ essential
Exit guidance line	1/100 sec	$1 \times 10^{-5}$ essential
Aircraft stand points/INS checkpoints	1/100 sec	$1 \times 10^{-3}$ routine
Geometric centre of TLOF or FATO threshold, heliport	1/100 sec	$1 \times 10^{-8}$ critical
Apron boundaries (polygon)	1/10 sec	$1 \times 10^{-3}$ routine
De-icing/anti-icing facility (polygon)	1/10 sec	$1 \times 10^{-3}$ routine

**Table 2 Elevation/Altitude/Height**

[Schedule 2, Part A, Clauses 2(9) and (13), 6(3) and (9)]

Elevation/Altitude/Height	Publication Resolution	Integrity classification
Aerodrome/heliport elevation	1 m or 1 ft	essential
WGS-84 geoid undulation at aerodrome/heliport elevation position	1 m or 1 ft	essential
Runway or FATO threshold, non-precision approaches	1 m or 1 ft	essential
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, non-precision approaches	1 m or 1 ft	essential
Runway or FATO threshold, precision approaches	0.1 m or 0.1 ft	critical
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric center, precision approaches	0.1 m or 0.1 ft	critical
Threshold crossing height (Reference datum height), precision approaches	0.1 m or 0.1 ft	critical
Obstacles in Area 2	1 m or 1 ft	essential
Obstacles in Area 3	0.1 m or 0.1 ft	essential
Obstacles in Area 1 (the entire State territory)	1 m or 1 ft	routine
Distance measuring equipment/precision (DME/P)	3 m (10 ft)	essential
Distance measuring equipment (DME)	30 m (100 ft)	essential
Minimum altitudes	50 m or 100 ft	routine
GBAS reference point	1m (1 ft)	essential
Helicopter crossing height, PinS approaches	1m (1 ft)	essential

**Table 3 Declination and Magnetic Variation**

[Schedule 2, Part A, Clauses 2(9) and (13) and 6(3)]

Declination/Variation	Accuracy data type	Integrity classification
VHF NAV AID station declination used for technical line-up	1 degree	$1 \times 10^{-5}$ essential
NDB NAV AID magnetic variation	1 degree	$1 \times 10^{-3}$ routine
Aerodrome/heliport magnetic variation	1 degree	$1 \times 10^{-5}$ essential
ILS localizer antenna magnetic variation	1 degree	$1 \times 10^{-5}$ essential
MLS azimuth antenna magnetic variation	1 degree	$1 \times 10^{-5}$ essential

**Table 4 Bearing**

[Schedule 2, Part A, Clauses 2(9) and (13) and 6(3)]

Bearing	Accuracy data type	Integrity classification
Airways segment	1 degree	routine
Bearing used for the formation of an <i>en route</i> 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 alignment (True)	1/100 degree	essential
Runway and FATO bearing (True)	1/100 degree	routine

**Table 5**

**Length, Distance and Dimension**

Length/Distance/Dimension	Accuracy data type	Integrity classification
Airways segment length	1/10 km or 1/10 NM	routine
Distance used for the formation of an <i>en route</i> fix	1/10 km or 1/10 NM	1 x 10 <sup>-3</sup>
Terminal arrival/departure route segment length	1/100 km or 1/100 NM	essential
Distance used for the formation of an instrument approach procedure fix	1/100 km or 1/100 NM	essential
Runway and FATO length, TLOF dimensions	1 m or 1 ft	critical
Runway width	1 m or 1 ft	essential
Displaced threshold distance	1 m or 1 ft	routine
Clearway length and width	1 m or 1 ft	essential
Stopway length and width	1 m or 1 ft	critical
Landing distance available	1 m or 1 ft	critical
Take-off run available	1 m or 1 ft	critical
Take-off distance available	1 m or 1 ft	critical
Accelerate-stop distance available	1 m or 1 ft	critical
Runway shoulder width	1 m or 1 ft	essential
Taxiway width	1 m or 1 ft	essential
Taxiway shoulder width	1 m or 1 ft	essential

**Table 5—Continued**

<b>Length/Distance/Dimension</b>	<b>Accuracy data type</b>	<b>Integrity classification</b>
ILS localizer antenna-runway end, distance	1 m or 1 ft	routine
ILS glide slope antenna-threshold, distance along centre line	1 m or 1 ft	routine
ILS marker-threshold distance	1 m or 1 ft	essential
ILS DME antenna-threshold, distance along centre line	1 m or 1 ft	essential
MLS azimuth antenna-runway end, distance	1 m or 1 ft	routine
MLS elevation antenna-threshold, distance along centre line	1 m or 1 ft	routine
MLS DME/P antenna-threshold, distance along centre line	1 m or 1 ft	essential

APPENDIX 7

(Part H of Schedule 2)

TERRAIN AND OBSTACLE DATA REQUIREMENTS

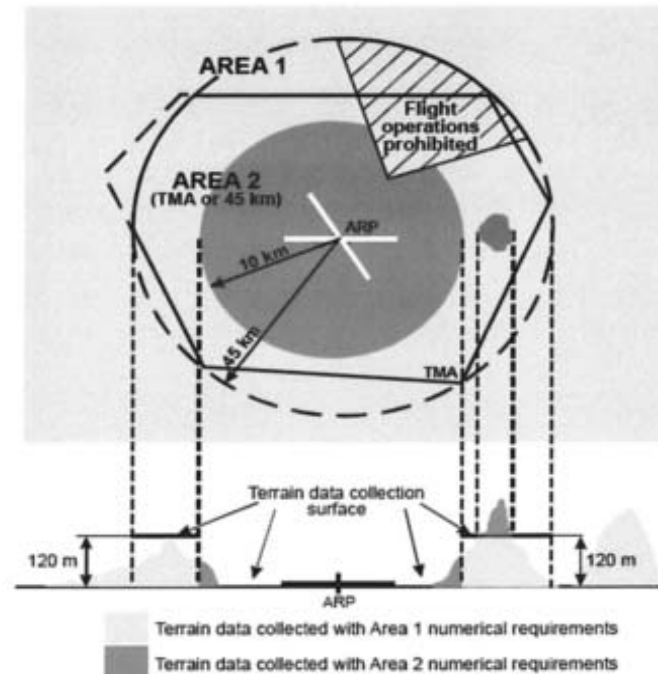


Figure 1. Terrain data collection surfaces—Area 1 and Area 2

1. Within the area covered by a 10-km radius from the ARP, terrain data shall comply with the Area 2 numeric 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 only comply with the Area 1 numerical requirements.

*Note: Terrain data numerical requirements for Areas 1 and 2 are specified in Table 1 of the Appendix.*

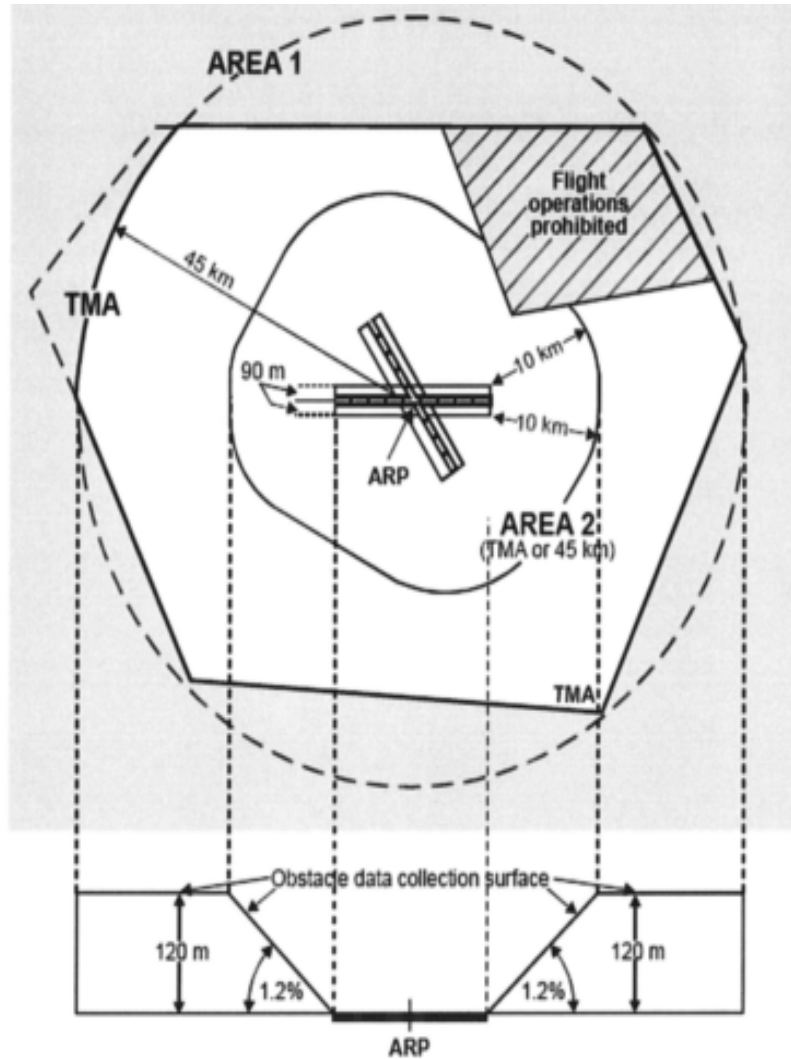


Figure 2. Obstacle data collection surfaces – Area 1 and Area 2

1. Obstacle data shall be collected and recorded in accordance with the Area 2 numerical requirements specified in Table 2 of the Appendix:

- (a) 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 and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;
- (b) 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 metres in height above ground need not be collected;

- (c) 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 metres in height above ground need not be collected; and
- (d) 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 metres above ground.

2. 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.

3. Data on every obstacle within Area 1 whose height above the ground is 100 metres or higher shall be collected and recorded in the database in accordance with the Area 1 numerical requirements specified in Table 2.

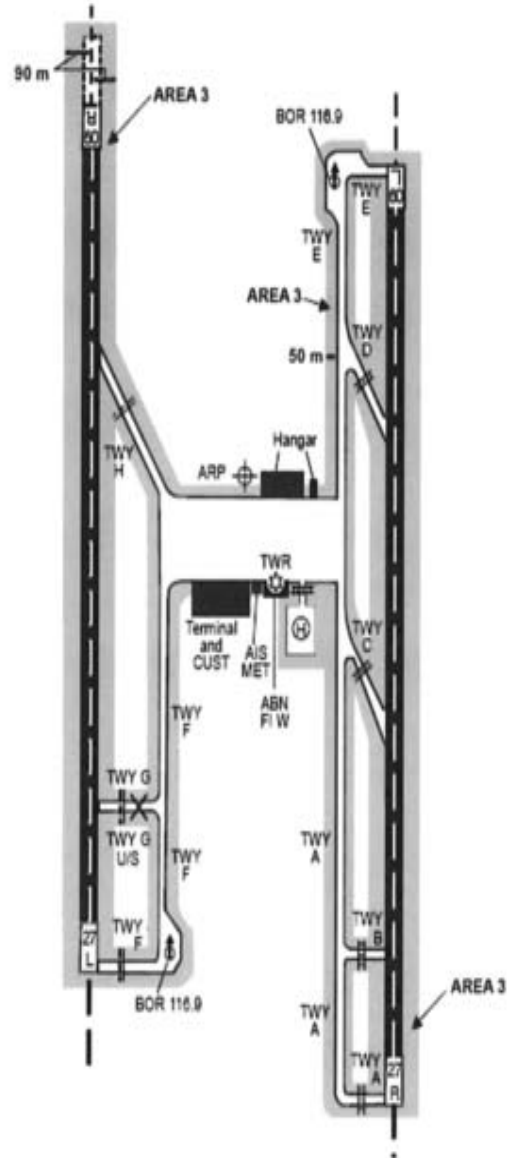


Figure 3. Terrain and obstacle data collection surface—Area 3

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 1 and Table 2, of the Appendix, respectively.



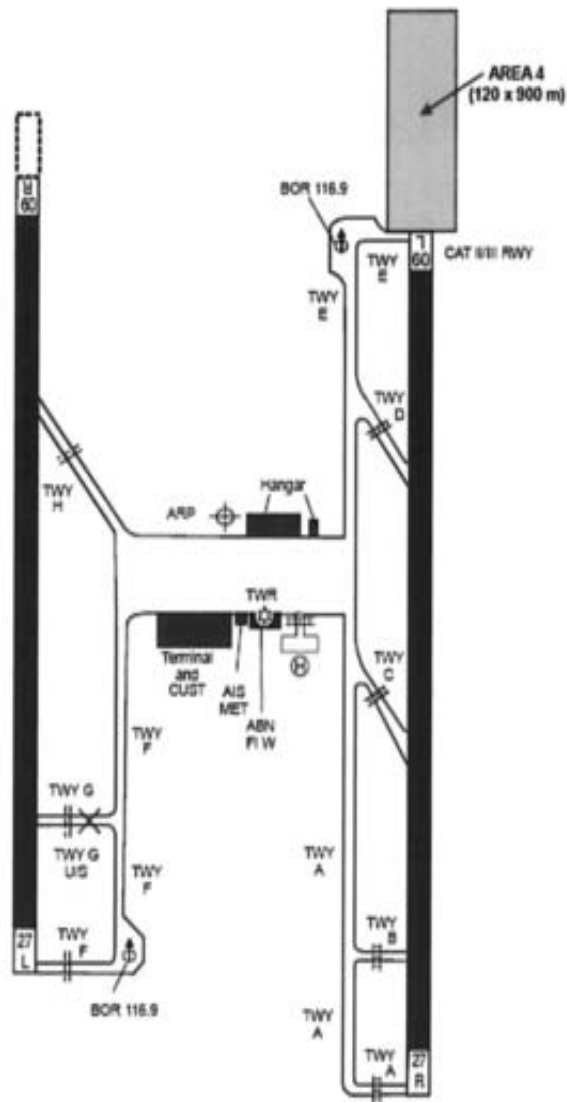


Figure 4. Terrain and obstacle data collection surface—Area 4

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

**Table 1 – Terrain data numerical requirements**

	Area 1	Area 2	Area 3	Area 4
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 2 – Obstacle data numerical requirements**

	Area 1	Area 2	Area 3	Area 4
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 3 – Terrain attributes**

<i>Terrain attribute</i>	<i>Mandatory/Optional</i>
Area of coverage	Mandatory
Data originator identifier	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

**Table 3—Terrain attributes—Continued**

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

**Table 4 – Obstacle attributes**

<i>Obstacle attribute</i>	<i>Mandatory/Optional</i>
Area of coverage	Mandatory
Data originator identifier	Mandatory
Obstacle identifier	Mandatory
Data source 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	Optional
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

Clause 15(6)  
of Part A of  
Schedule 3  
deleted and  
substituted

7. The Regulations are amended in Part A of Schedule 3 of the Regulations by deleting subclause (6) and substituting the following subclause:

“ (6) Based on the applicable integrity classification, the validation and verification procedures shall—

- (a) for routine data: avoid corruption throughout the processing of the data;
- (b) 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
- (c) 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 through the analysis of the overall system architecture as potential data integrity risks.”.

Tables 2, 4  
and 5 in  
Appendix 3 of  
Part A of  
Schedule 3  
deleted and  
substituted

8. The Regulations are amended in Part A of Schedule 3 of the Regulations by deleting tables 2, 4 and 5 of Appendix 3 and substituting the following tables:

Table 4 - Bearing		
Bearing	Chart Resolution	Integrity classification
Airways segments	1 degree	routine
Bearing used for the formation of an <i>en route</i> and of a terminal fix	1/10 degree	routine
Terminal arrival/departure route segment	1 degree	routine
Bearing used for the formation of an instrument approach procedure fix	1/10 degree	essential
ILS localizer alignment	1 degree	essential
MLS zero azimuth alignment	1 degree	essential
Runway and FATO bearing	1 degree	routine

Table 5 - Length, Distance and Dimension		
Length/Distance/Dimension	Chart Resolution	Integrity classification
Airways segment length	1 km or 1 NM	routine
Distance used for the formation of an <i>en route</i> fix	2/10 km or 1/10 NM	routine
Terminal arrival/departure route segment length	1 km or 1 NM	essential
Distance used for the formation of a terminal and instrument approach procedure fix	2/10 km or 1/10 NM	essential
Runway and FATO length, TLOF dimensions	1 m	critical
Runway width	1 m	essential
Displaced threshold distance	1 m	routine
Stopway length and width	1 m	critical
Landing distance available	1 m	critical
Take-off run available	1 m	critical
Take-off distance available	1 m	critical
Accelerate-stop distance available	1 m	critical
ILS localizer antenna-runway end, distance	As plotted	routine
ILS glide slope antenna-threshold, distance along centre line	As plotted	routine
ILS marker-threshold distance	2/10 km or 1/10 NM	essential
ILS DME antenna-threshold, distance along centre line	As plotted	essential
MLS azimuth antenna-runway end, distance	As plotted	routine
MLS elevation antenna-threshold, distance along centre line	As plotted	routine
MLS DME/P antenna-threshold, distance along centre line	As plotted	essential

9. The Regulations are amended in Part E of Schedule 3 of the Regulations, in clause 9(1), by deleting the words “based on the navigation aid associated with the procedure”.

Clause 9(1) in Part E of Schedule 3 amended

Clause 12(2)  
of Part G of  
Schedule 3  
amended

10. The Regulations are amended in Part G of Schedule 3 of the Regulations in clause 12(2)(f), by deleting the words “and procedure altitude or height” and substituting the words “, and procedure altitude or height and heliport crossing height”.

Made by the Trinidad and Tobago Civil Aviation Authority this 30th day of August, 2016.

R. LUTCHMEDIAL  
*Trinidad and Tobago  
Civil Aviation Authority*

Approved by the Minister of Works and Transport this 30th day of August, 2016.

F. E. HINDS  
*Minister of Works and Transport*