CAAT

สำนักงานการบินพลเรือนแห่งประเทศไทย

Civil Aviation Authority of Thailand

Guidance Material on Aerodrome Data and Reporting

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Director General

The Civil Aviation Authority of Thailand

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1 Introduction

1.1 Background

A. The Director General (DG) of Civil Aviation Authority of Thailand (CAAT) is responsible for providing regulatory oversight of the persons and entities conducting air operations in Thailand, operating and/or maintaining Thailand registered aircraft, operating and/or maintaining aerodromes and heliports in Thailand, or providing an air navigation service in Thailand. As part of CAAT's regulatory oversight responsibility, the DG may issue, modify, suspend, or revoke certificates, licenses, authorizations, and/or approvals.

B. The DG may also make decisions and/or take actions to ensure appropriate compliance with the Aerodrome Regulations of Thailand.

C. This Guidance Material (GM) is published by CAAT. The GM is a means of circulating essential information of an administrative or technical nature to holders of CAAT License and Certificate.

1.2 Purpose

A. The purpose of this Guidance Material is to provide supplementary guidance to aerodrome operators on aerodrome data and reporting. It provides guidance on what is acceptable to CAAT to demonstrate compliance with aerodrome regulations.

1.3 Applicability

A. This Guidance Material applies to all person or entities operating and/or maintaining aerodromes and/or heliports in Thailand.

1.4 Abbreviations and Definitions

1.4.1 Abbreviations

AD	Aerodrome
AGA	Aerodrome Standard Department
AIC	Aeronautical Information Circulars
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIS	Aeronautical Information Services

ARO	Aerodrome Reporting Officer
CAAT	The Civil Aviation Authority of Thailand
NOTAM	Notice to Airmen

1.4.2 Definitions

Aeronautical Chart	A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.
Aeronautical Data	A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing.
AIM	The dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.
AIS	A service established within the defined area of coverage responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation.
AIS Unit	Aeronautical Information Services provider of The Civil Aviation Authority of Thailand.
AIRAC	An acronym (aeronautical information regulation and control) signifying a system aimed at advance notification, based on common effective dates, of circumstances that necessitate significant changes in operating practices.
Director General	The Director General of The Civil Aviation Authority of Thailand or a person assigned by the Director General of The Civil Aviation Authority of Thailand.

2 Overview

2.1 Aerodrome Reporting

A. Aerodrome reporting is the notification of changes to the published aerodrome information or any other occurrences or emergencies affecting the availability of the aerodrome and safety of aircraft using the aerodrome. The occurrences may be known beforehand, as planned aerodrome works, or discovered during an inspection of the aerodrome or obstacle limitation surfaces.

B. Aerodrome operator should ensure that the procedures for reporting any changes to the aerodrome information set out in the AIP and procedures for requesting the issue of NOTAM, include the following:
   1) the arrangement for reporting any changes to the Aerodrome Standards Department (AGA) of The Civil Aviation Authority of Thailand and/or Aeronautical Information Services (AIS) unit and recording the reporting of changes during and outside the normal hours of aerodrome operations;
   2) the names and roles of persons and/or unit responsible for notifying the changes, and their telephone numbers during and outside the normal hours of aerodrome operations; and
   3) the address, telephone numbers and email address, as provided by the AGA and/or AIS unit, of the place where changes are to be reported to the AGA and/or AIS unit.

C. Aerodrome Information refers to data on aerodromes and their environs. The information comprises of aerodrome data provided by aerodrome operator in accordance with Chapter 2 of the Requirement of The Civil Aviation Authority of Thailand No. 14 on Aerodrome Standards.

2.2 Coordination between Aeronautical Information Services Unit and Aerodrome Operator

A. To ensure that Aeronautical Information Services units obtain information to enable them to provide up-to-date pre-flight information and to meet the need for in-flight information, the aerodrome operator should establish arrangements and/or Service Level of Agreement (SLA) with the Aeronautical Information Services units to report the following information, with a minimum of delay:
   1) information on the status of certification of aerodromes and aerodrome conditions;
   2) the operational status of associated facilities, services, and navigation aids within their area of responsibility;

3) the local airspace of an aerodrome; and
4) any other information considered to be of operational significance.

B. Before introducing changes to the air navigation system, due account shall be taken by the aerodrome operator of the time needed by the Aeronautical Information Services for the preparation, production, and issue of relevant materials for promulgation. To ensure timely provision of information to the Aeronautical Information Services, close coordination between those services concerned is therefore required.

C. Of particular importance are changes to aeronautical information that affects charts and/or computer-based navigation systems which qualify to be notified by the Aeronautical Information Regulation and Control (AIRAC) system, as specified in ICAO Annex 15, Chapter 6. The predetermined internationally agreed AIRAC effective dates shall be observed by the responsible aerodrome operator when submitting the raw information / data to the AIS unit.

NOTE: *Detailed specifications concerning the AIRAC system are contained in PANS-AIM (Doc 10066), Chapter 6.*

D. The aerodrome operator shall take into account accuracy and integrity specifications to meet the needs of the end-user of aeronautical data, in providing raw aeronautical information and data to the AIS unit.

NOTE 1: *Specifications concerning the accuracy and integrity classification of aerodrome-related aeronautical data are contained in PANS-AIM (Doc 10066), Appendix I.*

NOTE 2: *Specifications for the issue of a NOTAM are contained in The Announcement of The Civil Aviation Authority of Thailand Re: Notice to Airmen: NOTAM B.E. 2561.*

NOTE 3: *The schedule of the publication and effective date schedule of AIRAC cycle is contained in the AIC Thailand.*

3 Aerodrome Data

A. This chapter contains specifications relating to the provision of aerodrome data to the Aeronautical Information Services (AIS) for publication in accordance with the Requirement of The Civil Aviation Authority of Thailand No. 14 on Aerodrome Standards.

B. The Aeronautical Information Services unit is an aeronautical information services provider of The Civil Aviation Authority of Thailand responsible for collecting, collating, editing, and publishing aeronautical information.

C. Aeronautical information is published by the AIS unit as an Aeronautical Information Products consisting of the following elements:

1) **Aeronautical Information Publication (AIP)** – A publication issued by or with the authority of the AIS and containing aeronautical information of a lasting character essential to air navigation;
   - **AIP Amendment.** Permanent changes to the information contained in the AIP.
   - **AIP Supplement.** Temporary changes to the information contained in the AIP which are provided by means of special pages.
2) **Aeronautical Information Circulars (AIC)** – A notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative, or legislative matters;
3) **Aeronautical Chart** A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation;
4) **NOTAM** – A notice distributed by means of telecommunication containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard; the timely knowledge of which is essential to personnel concerned with flight operations;
5) **Digital Data Sets.**

3.1 Aerodrome Data for Aeronautical Information Publication

A. The Requirement of The Civil Aviation Authority of Thailand No. 14 on Aerodrome Standards, Chapter 2 requires the aerodrome operator to provide information relating to the aerodrome and report to the Director General for publication in the Aeronautical Information Publication of Thailand (AIP – Thailand). This information must be included in the aerodrome operator's Aerodrome Manual.

B. The following aerodrome data shall be approved by AGA and published by AIS unit.

NOTE: *Refer to the Requirement of The Civil Aviation Authority of Thailand No. 14 on Aerodrome Standards, Chapter 2, Part 1 – 12 for requirements on Aerodrome Data.*

1) Aeronautical data;
2) Aerodrome reference point;
3) Aerodrome and runway elevations;
4) Aerodrome reference temperature;
5) Aerodrome dimensions and related information;
6) Strength of pavements;
7) Pre-flight altimeter check location;
8) Declared distances;
9) Condition of the movement area and related facilities;
10) Disabled aircraft removal;
11) Rescue and firefighting; and
12) Visual approach slope indicator systems.

C. Care and diligence should be exercised in obtaining the aerodrome information to be published. This will involve the use of appropriately qualified persons to measure, determine, or calculate aerodrome operational information.

D. Appendix A and Appendix B indicated the contents of the Aeronautical Information Publication (AIP) for aerodromes and heliports. Such contents should be contained in the Aerodrome Manual in identical format.

NOTE: *Where VT** appears the ** shall be replaced with the final two letters of the aerodrome or heliport's ICAO location indicator as notified by The Civil Aviation Authority of Thailand.*

4 Aerodrome Reporting

4.1 Initiating AIP to Promulgate a Certified Aerodrome

A. An aerodrome operator should ensure that, in respect of his aerodrome and amongst other services related to safety to be provided, Aeronautical Information Services are available. Upon granting of a Public Aerodrome Operating Certificate, the aerodrome operator shall prepare and submit to the Aeronautical Information Services unit an Aeronautical Information Publication (AIP) Amendment setting out all the aerodrome information which will be permanently included in AIP Thailand, including the effective dates for which the aerodrome is certified and for which it will commence operations.

NOTE: *Refer to the AIS Procedures for the provision of aeronautical information submission.*

4.2 Routine Notification and Reporting

A. An aerodrome operator shall review every AIP, AIP Supplement, AIP Amendment, NOTAM, and AIC issued by the AIS unit on receipt thereof and should, immediately after such review, notify the AIS unit of any inaccurate information contained therein that pertains to his aerodrome.

B. An aerodrome operator should, in writing, notify the AIS unit of any change to any aerodrome facility or equipment or the level of service at the aerodrome;
   1) which has been planned in advance; and
   2) which is likely to affect the accuracy of the information contained in any publication by the AIS before effecting the change.

C. For the purpose of paragraph B., the aerodrome operator should consult and coordinate closely with the AIS unit to determine the required lead time with which to notify the AIS unit of different types of planned changes.

D. An aerodrome operator should give the Aeronautical Information Services unit and the Air Traffic Control unit immediate notice detailing any of the following circumstances of which the aerodrome operator has knowledge:
   1) in respect of obstacles, obstructions, and hazards;
      a) any projections by an object through an obstacle limitation surface relating to the aerodrome; and
      b) the existence of any obstruction or hazardous condition affecting aviation safety at or near the aerodrome.

2) any change in the level of service at the aerodrome as set out in any publication by the AIS unit referred to in paragraph A. above or any variation (that has been accepted by the Director General) from the Requirement of The Civil Aviation Authority of Thailand No. 14 on Aerodrome Standards and/or other relevant regulation(s);
3) closure of any part of the movement area of the aerodrome;
4) any significant changes in any aerodrome facility or the physical layout of the aerodrome; and
5) any other condition that could affect aviation safety at the aerodrome and against which precautions are warranted.

E. When it is not feasible for an aerodrome operator to arrange for the Air Traffic Control unit to receive notice of any circumstance referred to in paragraph D. above, the aerodrome operator should give immediate notice directly to the pilots who may be affected by that circumstance.

4.3 Aerodrome Reporting Procedure

A. An aerodrome operator's Aerodrome Manual should include the particulars of the procedures for aerodrome reporting which including details of the following:

1) the arrangements for reporting any changes that may affect aircraft operations to AGA, AIS unit, and local air traffic services unit and recording the reporting of changes during and outside the normal hours of aerodrome operation;

2) the contact details for the persons and organizations to which changes are to be reported;

3) the name of the unit and the Aerodrome Reporting Officer (ARO) responsible for reporting of changes, including AIP Authorized Person (AAP) and NOTAM Authorized Person (NAP), and the telephone numbers for contacting him or her during and after working hours;

NOTE: *Refer to the AIS Procedures for the requirement on AAP and NAP.*

4) the arrangements for reporting changes of aerodrome information published in AIP and NOTAM to AIS and CAAT; and

5) the arrangements for keeping records of reports made.

B. Reporting procedure referred to in paragraph A. should include procedure for issuing and amending of AIP, AIP Supplement, AIP Amendment, NOTAM, and AIC.

4.4 Copy of Report to be Given to the CAAT

A. Whenever a report of any changes referred to in paragraph 4.3 A. 1) is sent to the AIS unit, a copy of the report is also to be sent to the Aerodrome Standards Department (AGA) of The Civil Aviation Authority of Thailand. The aerodrome operator should also ensure that the Aerodrome Manual is amended to reflect changes, other than temporary changes.

4.5 Keeping a Record of Report

A. An aerodrome operator should maintain a logbook showing details of all reports, check any subsequent NOTAM or changes to AIP for accuracy, and keep a copy of reports and NOTAM with the logbook. Also, as for any published aerodrome information, current NOTAM must be continually checked for accuracy and any changes reported. Such records should be retained by aerodrome operator for a minimum period of 3 years. If possible, the record of any changes to AIP should be retained as long as such information is still valid.

4.6 Aerodrome Reporting Function

A. The functions of an aerodrome reporting are:
   1) to monitor the serviceability of the aerodrome; and
   2) to report to the Aeronautical Information Services unit, and/or Air Traffic Control unit any changes in conditions, or any other occurrences, at the aerodrome that may affect the safety of aircraft operations. Example of the changes or occurrences may include the following:
      a) any temporary or permanent change in the physical condition of the aerodrome that may affect the safety of aircraft; and
      b) any other occurrence relating to the operation or maintenance of the aerodrome that may affect the safety of aircraft.

4.7 Monitoring Activities Outside Aerodrome

A. An aerodrome reporting function should also include, or coordinate with the relevant unit responsible for, monitoring activities outside but in the vicinity of the aerodrome which may result in hazards to aircraft operations. This includes:
   1) developments which may become obstacles;
   2) land planning and use which may attract birds; and
   3) installation of lighting systems which may create confusion to pilots at night.

5 Aerodrome Reporting Officers

A. Aerodrome Reporting Officer (ARO) is a person whose duties are directly related to aerodrome safety include:
   1) those that carry out the routine serviceability inspections of the aerodrome movement area, aerodrome lights, obstacle limitation surfaces, and report of changes in aerodrome condition; and
   2) those that are authorized to make reports of aerodrome reportable changes to the Aeronautical Information Services (AIS) units.

B. Depending on the size of the aerodrome, the serviceability inspection and reporting functions may be assigned to different persons. At a small aerodrome, the same person may have to carry out all the functions. At larger aerodromes, the serviceability inspections and the reporting functions become more complex, often involving more people.

5.1 Training for Aerodrome Reporting Officers

A. An aerodrome operator should ensure that AROs are suitably trained and competent to perform their tasks and duties in an efficient manner.

B. It is important that a person appointed to carry out a particular function on an aerodrome possesses the competency and skills that are commensurate with, and appropriate to, the complexity of the function that the person is required to perform. A different level of training may be required.

NOTE: *Refer to the Regulation of The Department of Civil Aviation on the System for Regular Supervision of Staff Performance B.E. 2556 for requirement on training program and competency of aerodrome personnel.*

5.2 Competency Standards for Aerodrome Reporting Officers

A. An aerodrome operator should ensure that AROs possess the ability to perform particular tasks and duties to the standard of performance expected at an aerodrome.

B. Competency can be achieved and/or demonstrated in a number of ways including, but not limited to:
   1) training and assessment provided by an authorized person who has experience in Aerodrome Operations;
   2) being supervised “on the job” (e.g. trainee) and being assessed by the aerodrome operator as being competent; or
   3) any combination of the above.

C. Additional training may be needed if there are gaps identified in an individual's required skills and knowledge.

D. An ARO should has the following attributes:

1) a sound knowledge of the physical characteristics of the aerodrome movement area, the aerodrome obstacle limitation surfaces, aerodrome markings, lighting and ground signals, and essential aerodrome safety equipment;
2) an understanding of the aerodrome information included in AIP;
3) the ability to carry out a serviceability inspection of the aerodrome;
4) a knowledge of the aerodrome's emergency procedures; and
5) a knowledge of the AIP and NOTAM system and the ability to carry out aerodrome reporting procedures.

Appendix A: Contents of the Aeronautical Information Publication (AIP) for Aerodromes

AD 2. AERODROMES

NOTE: *VT** is to be replaced by the relevant ICAO location indicator.*

VT** AD 2.1 Aerodrome location indicator and name

VT** AD 2.2 Aerodrome geographical and administrative data

Aerodrome geographical and administrative data should include:

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

VT** AD 2.3 Operational hours

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

1) aerodrome operator;
2) customs and immigration;
3) health and sanitation;
4) AIS briefing office;
5) ATS reporting office;
6) MET briefing office;
7) air traffic service;
8) fuelling;
9) handling;
10) security;
11) de-icing; and
12) remarks.

VT** AD 2.4 Handling services and facilities

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

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

VT** AD 2.5 Passenger facilities

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

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

VT** AD 2.6 Rescue and fire fighting services

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

1) aerodrome category for fire fighting;
2) rescue equipment;
3) capability for removal of disabled aircraft;
4) remarks.

VT** AD 2.7 Seasonal availability – clearing (if applicable)

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

1) type(s) of clearing equipment;
2) clearance priorities; and
3) remarks or “Nil”

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

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

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

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

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

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

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

VT** AD 2.10 Aerodrome obstacles

Detailed description of aerodrome obstacles, including:

1) obstacles in Area 2:
    a) obstacle identification or designation;
    b) type of obstacle;
    c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds, and tenths of seconds;
    d) obstacle elevation and height to the nearest 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.

NOTE: *Annex 15, Chapter 5 provides a description of Area 2 while Appendix 8, Figure A8-2 of DOC 10066 PANS-AIM contains graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in Area 2.*

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

NOTE: *Annex 15, Chapter 5, provides a description of Area 3 while Appendix 8, Figure A8-3 of DOC 10066 PANS-AIM contains graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in Area 3.*

VT** AD 2.11 Meteorological information provided

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

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

VT** AD 2.12 Runway physical characteristics

Runway physical characteristics for aerodrome shall contain detailed description of runway physical characteristics, for each runway, including:

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

VT** AD 2.13 Declared distances

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

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

If a runway direction cannot be used for take-off or landing, or both, because it is operationally forbidden, then this must be declared and the words “not usable” or the abbreviation “NU” entered.

VT** AD 2.14 Approach and runway lighting

Detailed description of approach and runway lighting for aerodrome, including:

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

VT** AD 2.15 Other lighting and secondary power supply

Description of other lighting and secondary power supply, including:

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

VT** AD 2.16 Helicopter landing area

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

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

VT** AD 2.17 Air traffic services airspace

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

1) airspace designation and geographical coordinates in degrees, minutes, and seconds of the lateral limits;
2) vertical limits;
3) airspace classification;
4) call sign and language(s) of the air traffic services unit providing service;
5) transition altitude;
6) hours of applicability; and
7) remarks.

VT** AD 2.18 Air traffic services communication facilities

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

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

VT** AD 2.19 Radio navigation and landing aids

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

1) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS, basic GNSS, SBAS and GBAS, and for VOR / ILS station declination to the nearest degree used for technical line-up of the aid;
2) identification, if required;
3) frequency(ies), channel number(s), service provider, and Reference Path Identifier(s) (RPI), as appropriate;
4) hours of operation, as appropriate;
5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
6) elevation of the transmitting antenna of DME to the nearest 100 ft and of DME/P to the nearest 10 ft, elevation of GBAS reference point to the nearest foot, and the ellipsoid height of the point to the nearest foot. For SBAS, the ellipsoid height of the Landing Threshold Point (LTP) or the Fictitious Threshold Point (FTP) to the nearest foot;

7) service volume radius from the GBAS reference point to the nearest nautical mile; and
8) remarks.

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

VT** AD 2.20 Local aerodrome regulations

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

VT** AD 2.21 Noise abatement procedures

Detailed description of noise abatement procedures established at the aerodrome.

VT** AD 2.22 Flight procedures

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

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

VT** AD2.23 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.

VT** AD 2.24 Charts related to an aerodrome

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

1) Aerodrome / Heliport Chart — ICAO;
2) Aircraft Parking / Docking Chart — ICAO;
3) Aerodrome Ground Movement Chart — ICAO;
4) Aerodrome Obstacle Chart — ICAO Type A (for each runway);

5) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
6) Precision Approach Terrain Chart — ICAO (precision approach Cat II and III runways);
7) Area Chart — ICAO (departure and transit routes);
8) Standard Departure Chart — Instrument — ICAO;
9) Area Chart — ICAO (arrival and transit routes);
10) Standard Arrival Chart — Instrument — ICAO;
11) ATC Surveillance Minimum Altitude Chart — ICAO;
12) Instrument Approach Chart — ICAO (for each runway and procedure type);
13) Visual Approach Chart — ICAO; and
14) Bird concentration in the vicinity of aerodrome.

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

Appendix B: Contents of the Aeronautical Information Publication (AIP) for Heliports

AD 3. HELIPORTS

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

NOTE: *VT** is to be replaced by the relevant ICAO location indicator.*

VT** AD 3.1 Heliport location indicator and name

VT** AD 3.2 Heliport geographical and administrative data

Heliport geographical and administrative data should include:

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

VT** AD 3.3 Operational hours

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

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

VT** AD 3.4 Handling services and facilities

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

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

VT** AD 3.5 Passenger facilities

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

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

VT** AD 3.6 Rescue and fire fighting services

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

1) heliport category for fire fighting;
2) rescue equipment;
3) capability for removal of disabled helicopter; and
4) remarks.

VT** AD 3.7 Seasonal availability — clearing (if applicable)

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

1) type(s) of clearing equipment;
2) clearance priorities; and
3) remarks or “Nil”

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

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

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

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

VT** AD 3.9 Markings and markers

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

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

VT** AD 3.10 Heliport obstacles

Detailed description of obstacles, including:

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

VT** AD 3.11 Meteorological information provided

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

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

VT** AD 3.12 Heliport data

Detailed description of heliport dimensions and related information, including:

1) heliport type — surface-level, elevated or helideck;
2) Touchdown and Lift-off (TLOF) area dimensions to the nearest metre;
3) true bearings to one-hundredth of a degree of Final Approach and Take-off (FATO) area;
4) dimensions to the nearest metre of FATO, and surface type;
5) surface and bearing strength in tonnes (1 000 kg) of TLOF;
6) geographical coordinates in degrees, minutes, seconds, and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of TLOF or of each threshold of FATO:
    a) for non-precision approaches, to the nearest foot; and
    b) for precision approaches, to the nearest tenth of a foot;
7) TLOF and/or FATO slope and elevation:
    a) for non-precision approaches, to the nearest foot; and
    b) for precision approaches, to the nearest tenth of a foot;
8) dimensions of safety area;
9) dimensions, to the nearest metre, of helicopter clearway;
10) the existence of an obstacle-free sector; and
11) remarks.

VT** AD 3.13 Declared distances

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

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

VT** AD 3.14 Approach and FATO lighting

Detailed description of approach and FATO lighting, including:

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

VT** AD 3.15 Other lighting and secondary power supply

Description of other lighting and secondary power supply, including:

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

VT** AD 3.16 Air traffic services airspace

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

1) airspace designation and geographical coordinates in degrees, minutes, and seconds of the lateral limits;
2) vertical limits;
3) airspace classification;
4) call sign and language(s) of air traffic services unit providing service;
5) transition altitude;
6) hours of applicability; and
7) remarks.

VT** AD 3.17 Air traffic services communication facilities

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

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

VT** AD 3.18 Radio navigation and landing aids

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

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

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

VT** AD 3.19 Local heliport regulations

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

VT** AD 3.20 Noise abatement procedures

Detailed description of noise abatement procedures established at the heliport.

VT** AD 3.21 Flight procedures

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

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

VT** 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.

VT** AD 3.23 Charts related to a heliport

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

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

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