



Advisory Circular

Subject: International Civil Aviation Organization (ICAO) Type A Obstacle Charts

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1.0 Introduction

- (1) This Advisory Circular (AC) is provided for information and guidance purposes. It describes an example of an acceptable means, but not the only means, of demonstrating compliance with regulations and standards. This AC on its own does not change, create, amend or permit deviations from regulatory requirements, nor does it establish minimum standards.

1.1 Purpose

- (1) The purpose of this document is to provide information, guidance, roles and responsibilities for the preparation, completion, publishing, and amendment of International Civil Aviation Organization (ICAO) Type A – Obstacle Charts, in accordance with recognized international standards and guidance.

1.2 Applicability

- (1) This document applies to all operators of airports supporting international commercial passenger operations, international air operators, aeronautical information service providers, and Transport Canada Civil Aviation personnel. This guidance is also available to the aviation industry for information purposes.

1.3 Description of changes

- (1) The document has been updated to reflect the current airport standards document, TP 312 5th Edition - Aerodrome Standards and Recommended Practices references.

2.0 References and requirements

2.1 Reference documents

- (1) It is intended that the following reference materials be used in conjunction with this document:
 - (a) [Aeronautics Act](#) (R.S.C., 1985, c. A-2)
 - (b) *Civil Air Navigation Services Commercialization Act (CANSCA)*
 - (c) Part III, Subpart 02 of the *Canadian Aviation Regulations (CARs) — Airports*
 - (d) Part VIII, Subpart 03 of the *CARs — Aeronautical Information Services*
 - (e) ICAO Annex 4 to the Convention on International Civil Aviation – Aeronautical Charts
 - (f) ICAO Annex 9 to the Convention on International Civil Aviation – Facilitation
 - (g) ICAO Annex 11 to the Convention on International Civil Aviation – Air Traffic Services
 - (h) ICAO Annex 15 to the Convention on International Civil Aviation — Aeronautical Information Services
 - (i) TP 312, — Aerodrome Standards and Recommended Practices
 - (j) TP 14371, Transport Canada Aeronautical Information Manual (TC AIM)
 - (k) NAV CANADA publication – AIP Canada (ICAO); and
 - (l) AC 302-032 - Designation of International Airports in Canada.

2.2 Cancelled documents

- (1) Not applicable.
- (2) By default, it is understood that the publication of a new issue of a document automatically renders any earlier issues of the same document null and void.

2.3 Definitions and abbreviations

- (1) The following **definitions** are used in this document:

- (a) **Aeronautical chart:** a representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation as defined by ICAO Annex 4.
- (b) **Aeronautical information services:** the services necessary to meet the requirements of Annexes 4 and 15 to the Convention that relate to aeronautical information.
- (c) **International airport:** means any airport designated by the Contracting State, in whose territory it is situated, as an airport of entry and departure for international commercial air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out. (ICAO Annex 9) (In Canada, this does not include airports serving only transborder air traffic with the USA).
- (d) **Obstacle:** all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight.

Note: The term obstacle is used in ICAO Annex 4 solely for the purpose of specifying the charting of objects that are considered a potential hazard to the safe passage of aircraft in the type of operation for which the individual chart series is designed.

- (e) **ICAO Annex:** means an annex to the Chicago Convention on International Civil Aviation; and
 - (f) **Transborder:** means flights between USA and Canadian airports.
- (2) The following **abbreviations** are used in this document:
 - (a) **AIRAC:** Aeronautical Information Regulation and Control
 - (b) **AIS:** Aeronautical Information Services
 - (c) **CANSCA:** *Civil Air Navigation Services Commercialization Act*
 - (d) **CARs:** *Canadian Aviation Regulations*
 - (e) **ICAO:** International Civil Aviation Organization
 - (f) **MSL:** Mean sea level; and
 - (g) **TCCA:** Transport Canada Civil Aviation.

3.0 Background

- (1) Prior to June 1996, the International Civil Aviation Organization (ICAO) Type A Obstacle Charts were produced for and under the authority of the Minister of Transport. Operators of Canadian international airports and some others that served large commercial aircraft were required by TP312 Aerodromes Standards and Recommended Practices to provide to the certifying authority,

Transport Canada Civil Aviation (TCCA), detailed survey data of significant obstructions in the take-off flight path of each runway used by international commercial passenger air operators.

- (2) On June 20th, 1996 the *Civil Air Navigation Services Commercialization Act* (CANSCA) respecting the commercialization of civil air navigation services received royal assent. The *Act* transferred the management and control of air navigation services from the Minister of Transport to the new corporation NAV CANADA.
- (3) Part II of the *Aeronautics Act*, designated NAV CANADA as the authority in Canada responsible for providing aeronautical information services for the purposes of ICAO Annexes 4 and 15 and air traffic control services for the purposes of ICAO Annex 11. As such, the production and publication of ICAO Type A Obstacle Charts is the responsibility of NAV CANADA in accordance with CANSCA.
- (4) Subsection 803.01(2) of the *Canadian Aviation Regulations* (CARs) states: “No person shall provide aeronautical information services except in accordance with the standards set out in Annexes 4 and 15 to the Convention.”
- (5) **Airport** operators supporting international commercial passenger operations are required to comply with ICAO Type A Obstacle Charts standards stated in TP312.
- (6) **Air** operators use obstacle data provided in the format of an ICAO Type A Chart for operational planning purposes only. Obstacles identified using the Type A Obstacle Charts criteria are not limiting for an airport, although it may be limiting for an air operator.

4.0 Responsibilities

4.1 Airport operators

- (1) Operators of airports that support international commercial passenger operations are responsible for compiling aeronautical data used in the development and production of ICAO Type A Obstacle Charts.
Excluded are those airports whose only international air operations are between the United States and Canada. These air operations, classified in Canada as transborder air operations, are not necessarily subject to all ICAO Annex 9 – *Facilitation* standards.
- (2) In accordance with the ICAO Type A Obstacle Chart section stated in TP 312, the airport operator provides to NAV CANADA – AIS Data Collection Division the obstacle information needed to compile and produce the Type A Obstacle Charts for all runway departure paths used by international commercial passenger operators.
- (3) In addition, the airport operator should advise and provide the aeronautical data to TCCA Regional Office, in order to verify compliance with the standards.
- (4) To meet Canada’s obligations as an ICAO member State and in accordance with Subpart 302 of the CARs and associated ICAO Type A Obstacle Chart section stated in TP 312, the following information needs to be provided to the AIS service provider for each runway take-off flight path area, intended to be used by international commercial air operators as follows:
 - (a) runway designation, magnetic and true bearings, declared distances, width, and surface type
 - (b) length and width of the clearway, if provided
 - (c) dimensions of the take-off flight path area
 - (d) runway threshold and departure end elevations

- (e) location, height above MSL, and nature of objects within the take-off flight path area identified as obstacles; and
 - (f) the date the obstacle survey was completed.
- (5) In addition to the mandatory chart information specified in the aerodrome standards, the following data should be provided with the survey package when possible, to facilitate the processing of the aeronautical data:
- (a) obstacles lateral distance from the runway centreline
 - (b) measurements in feet to avoid conversion errors; and
 - (c) only the obstacles located inside the defined take-off flight path area.

4.2 Transport Canada Civil Aviation regional office

- (1) The operator's respective TCCA regional office should be copied or informed during the process of exchanging survey information between the airport operator and NAV CANADA.
- (2) For more information, please contact a TCCA Regional Office which can be found at the following address: <http://www.tc.gc.ca/eng/regions.htm>

4.3 NAV CANADA

- (1) As the aeronautical information service provider, NAV CANADA is responsible to receive and compile survey data and publish the type "A" charts.

5.0 Chart development

5.1 New charts

- (1) The operator of an airport requiring an ICAO Type A Obstacle Chart must have the airport surveyed in accordance with the requirements set out in the CARs and TP 312. This survey (clearly identifying which obstacles are to be depicted) will be sent to NAV CANADA and the appropriate TCCA regional office for verification of compliance.
- (2) Appendix A illustrates what obstacle data is needed by NAV CANADA to prepare a Type A Obstacle Chart. Airport operators submitting information must supply the obstacle data using this or an equivalent format.
- (3) A copy of ICAO Annex 4 – *Aeronautical Charts* can be ordered using the following e-SHOP link from the ICAO Web site: <https://store.icao.int/>.

5.2 Revised charts

- (1) TCCA requires that, in accordance with TP 312, a survey of the take-off flight path area is done at a frequency not exceeding 5 years.

Note: The increase in building construction in proximity of the aerodrome may be such that a frequency less than 5 years is required.

- (2) A survey is not required if it can be ascertained that there are no new obstacles in the take-off flight path area and a report is made to the AIS provider and TCCA regional office to that effect.
- (3) Sending the info package 6 months prior to the 5 year cycle is considered a good practice in order to give NAV CANADA enough time to produce and publish the charts.

- (4) If a correction is required, either the current chart with appropriate markings indicated or the survey data is to be submitted to NAV CANADA by the airport operator specifying what obstacle is to be deleted and/or added on the chart since the last publication.

5.3 Publication

- (1) In order to develop and produce ICAO Type A Obstacle Charts, NAV CANADA follows the steps below:
 - (a) Receive and compile verified survey data from airport operator
 - (b) Complete charts draft
 - (c) Send the draft charts back to the airport operator for further information verification and final approval
 - (d) When approval is received from the airport operator, remove the "Draft" label on the charts
 - (e) Publish the charts which can then be obtained on the NAV CANADA web site at <http://www.navcanada.ca/>
 - (f) Advertise their availability in the Aeronautical Information Publication (AIP) Canada (ICAO); and
 - (g) Aeronautical Information Regulation and Control (AIRAC) cut-off dates must be respected during the completion of this process.

6.0 Information management

- (1) Not applicable.

7.0 Document history

- (1) AC 302-012 Issue 01, RDIMS# 4456252-V17 (E), 5903404-V14 (F) Dated 2012-04-24 – International Civil Organization Type A Obstacle Charts

8.0 Contact us

For more information, please contact:

Flight Standards (AARTA)

E-mail: TC.FlightStandards-Normsvol.TC@tc.gc.ca

We invite suggestions for amendment to this document. Submit your comments to:

Civil Aviation Communications Centre

Telephone: 1-800-305-2059

E-mail: services@tc.gc.ca

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Appendix A — Information required for an ICAO Type A chart

A. Runway and clearway data: Provide information on the length, width and profile of each runway and clearway.

B. List of obstacles: Provide a list of the obstacles to be depicted at each end of the runway as shown in the sample list. Specify where the ground distance is measured from, whether it is the end of the clearway (line A-B) or the bottom of the departure runway.

Sample list

Number	Type of Feature	Elevation (Feet ASL)	Ground Distance (Feet) (from line A-B)	Ground Distance off Centreline (Feet) (from line C-D)
1.	Lamp standard	155.95	2195.05	-410.11
2.	Tree-top	172.52	3500.10	75.54
3.	Tree-top	195.77	5090.20	-767.25

Figure 1 – C. Profile view

It is required to show obstacles which penetrate the 1.2% slope. It is not required to show obstacles in the shadow (See Reference: ICAO Annex 4, Chapter 3, Paragraph 3.8.1.2) of a previous obstacle even if it penetrates the 1.2% slope.

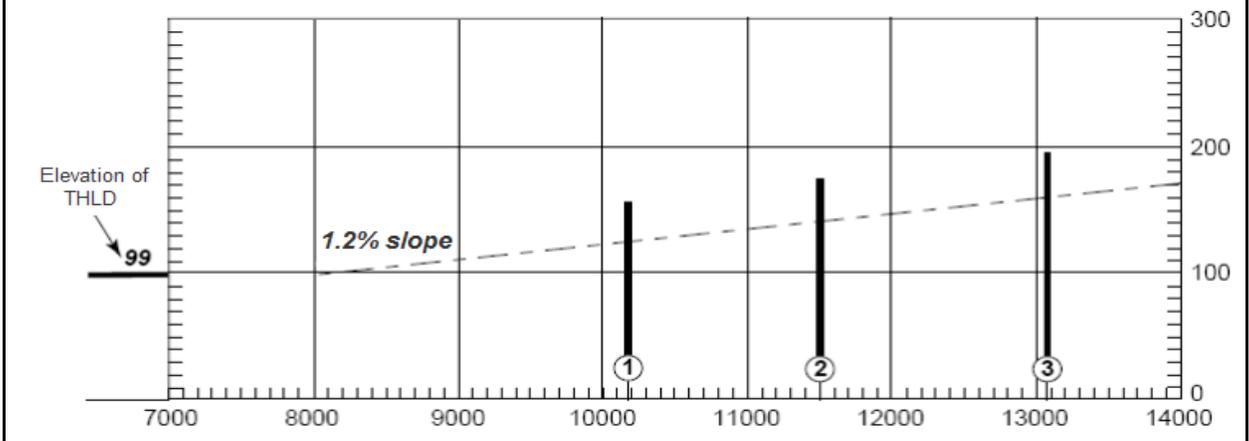


Figure 2 – D. Plan view

It is required to show obstacles within the take-off flight path area. (See TP312 for dimensions)

