



Transport
Canada

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Transport Canada

Aeronautical Information Manual

(TC AIM)

GEN—GENERAL

MARCH 26, 2020

Canada 

TRANSPORT CANADA AERONAUTICAL INFORMATION MANUAL (TC AIM)

EXPLANATION OF CHANGES EFFECTIVE—MARCH 26, 2020

NOTES:

1. Editorial and format changes were made throughout the TC AIM where necessary and those that were deemed insignificant in nature were not included in the “Explanation of Changes”.
2. Effective March 31, 2016, licence differences with ICAO Annex 1 standards and recommended practices, previously located in LRA 1.8 of the TC AIM, have been removed and can now be found in *AIP Canada (ICAO)* GEN 1.7.

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GEN—GENERAL

1.0 GENERAL INFORMATION

1.1 AERONAUTICAL INFORMATION

1.1.1 Aeronautical Authority

Transport Canada is the responsible aeronautical authority in Canada.

Postal Address:

Assistant Deputy Minister
 Transport Canada, Safety and Security
 330 Sparks Street
 Ottawa ON K1A 0N8

Aeronautical Fixed Telecommunication
 Network (AFTN):CYHQYAYB

The Transport Canada, Aerodromes and Air Navigation Branch is responsible for the establishment and administration of the Regulations and Standards for the provision of AIS in Canada.

Enquiries relating to regulations and standards for AIS should be addressed to:

Postal Address:

Flight Standards (AARTA)
 Transport Canada Civil Aviation
 330 Sparks Street
 Ottawa ON K1A 0N8

Tel.: 1-800-305-2059
 Fax: 613-952-3298
 E-mail: TC.Flights.Standards-Normesdevol.TC@tc.gc.ca

TRANSPORT CANADA REGIONAL OFFICES

Transport Canada has five Regional Offices:

Pacific Region

Transport Canada Civil Aviation
 Suite 820
 800 Burrard Street
 Vancouver BC V6Z 2J8

Tel.: 1-800-305-2059
 Fax: 1-855-618-6288

Prairie and Northern Region

Transport Canada Civil Aviation
 344 Edmonton Street
 Winnipeg MB R3C 0P6

Tel.: 1-888-463-0521
 Fax: 1-800-824-4442

Ontario Region

Transport Canada Civil Aviation
 4900 Yonge Street, 4th Floor
 Toronto ON M2N 6A5

Tel.: 1-800-305-2059
 Fax: 1-877-822-2129

Quebec Region

Transport Canada Civil Aviation
 700 Leigh-Capreol Place
 Dorval QC H4Y 1G7

Tel.: 1-800-305-2059
 Fax: 1-855-633-3697

Atlantic Region

Transport Canada Civil Aviation
 95 Foundry Street
 PO Box 42
 Moncton NB E1C 8K6

Tel.: 1-800-305-2059
 Fax: 1-855-726-7495

Figure 1.1—Transport Canada Regions



1.1.2 Aeronautical Information Management (AIM)

NAV CANADA's AIM group is responsible for the collection, evaluation and dissemination of aeronautical information published in the state AIP and associated aeronautical charts. In addition, the AIM group assigns and controls Canadian location indicators and aircraft operating agency designators. (For information on the dissemination of aeronautical information and aeronautical products, see the MAP chapter.)

The AIM group postal address is:

NAV CANADA
Aeronautical Information Management
1601 Tom Roberts Avenue
PO BOX 9824 STN T CSC
Ottawa ON K1G 9Z9

Tel. (Toll free, North America only): 1-866-577-0247
Tel. (Outside North America): 1-613-248-4087
Fax: 1-613-248-4093
Email: aimdata@navcanada.ca

Comments on the Air Navigation System

Any errors, omissions, anomalies, suggestions or comments on the air navigation system can be submitted via any FIC.

To report any concerns about the safety or quality of services provided by NAV CANADA, please contact the local NAV CANADA Site Manager or our Customer Service Centre at:

NAV CANADA
Customer Service
77 Metcalfe Street
PO BOX 3411 STN T
Ottawa ON K1P 5L6

Tel. (Toll-free, North America only): 1-800-876-4693
Tel. (Outside North America): 1-613-563-5588
Fax (Toll-free, North America only): 1-877-663-6656
Fax (Outside North America): 1-613-563-3426
E-mail: service@navcanada.ca
Regular hours of operation: 08:00–18:00 EST/EDT

1.1.3 Transport Canada Aeronautical Information Manual (TC AIM)

The TC AIM provides flight crews with reference material useful for aircraft operation in Canadian airspace. It includes those sections of the CARs that are of interest to pilots.

The TC AIM supplements the rules of the air and procedures for aircraft operation in Canadian airspace found in *AIP Canada (ICAO)* (see MAP 2.1).

Throughout the TC AIM, the term “should” implies that TC encourages all pilots to conform with the applicable procedure. The term “shall” implies that the applicable procedure is mandatory because it is supported by regulations.

As much as possible, the rules of the air and ATC procedures have been incorporated into the TC AIM in plain language. Where this was not possible, the CARs have been incorporated verbatim. Editorial liberties have been taken in the deletion of definitions not considered essential to the understanding of the intent of the CARs. This has been done to enhance comprehension of the rules and procedures essential to the safety of flight. The inclusion of these rules and procedures in this format does not relieve persons concerned with aviation from their responsibilities to comply with the *Canadian Aviation Regulations (CARs)*, the *Aeronautics Act* and other regulations made under the Act. Where the subject matter of the TC AIM makes reference to the CARs, the relevant provisions are indicated.

Care has been taken to ensure that the information contained in the TC AIM is accurate and complete. Any correspondence concerning the content of the TC AIM is to be referred to:

TC AIM Co-ordinator (AARTT)
Transport Canada
330 Sparks Street
Ottawa ON K1A 0N8

Tel.: 613-993-4502
Fax: 613-952-3298
E-mail: TC.AeronauticalInformationManual-Manueldinformationaeronautique.TC@tc.gc.ca

1.1.4 Transport Canada Aeronautical Information Manual (TC AIM) Publication Information

Individual copies of the TC AIM may be purchased by logging onto the Transport Canada Publication Storefront Web site at <https://www.tc.gc.ca/en/transport-canada/corporate/publications.html>. All information with respect to purchases and subscriptions to the TC AIM will be available on this Web site, or by contacting the Order Desk.

This edition of the TC AIM is designed to be as inexpensive as possible since it is intended primarily for student pilots and foreign pilots for use over a short period of time.

The TC AIM is available on the TransportCanada Web site at: <https://www.tc.gc.ca/en/services/aviation/publications/tc-aim.html>.

Amendment Service

This document is intended to provide users of Canadian airspace with current information. A regular amendment service is established to advise individuals of changes to the airspace, regulations or procedures. New editions of the TC AIM are issued twice a year in phase with the ICAO AIRAC schedule. Future issue dates are as follows:

2020-1 – March 26, 2020

2020-2 – October 08, 2020

Each new edition of the TC AIM includes an explanation of changes section that highlights the most significant changes made to the TC AIM and may provide a reference to detailed information on the change.

Distribution

To ensure uninterrupted service, rectify any distribution problems or make a change of address, please contact the TC Publications Order Desk using one of the methods listed below.

Transport Canada Publications Order Desk
Operational Support Services (AAFBD)
2655 Lancaster Road
Ottawa ON K1B 4L5

Tel. (toll-free in North America): 1-888-830-4911
..... 613-991-4071
Fax: 613-991-1653
E-mail: publications@tc.gc.ca
Web site: www.tc.gc.ca/en/transport-canada/corporate/publications.html

1.1.5 NOTAM

NAV CANADA, International NOTAM Office (NOF), is responsible for the collection, evaluation and dissemination of NOTAMs. A complete description of the Canadian NOTAM system is located in MAP 3.0.

Postal Address

NAV CANADA
International NOTAM Office
Combined ANS Facility
1601 Tom Roberts Avenue
PO Box 9824 Stn. T
Ottawa ON K1G 6R2

Tel.: 613-248-4000
Fax: 613-248-4001
AFTN: CYHQYNYX

1.1.6 Aerodromes

Complete information for all Canadian aerodromes is published in the CFS. ICAO Type A Charts are available from NAV CANADA’s AIM group (see MAP 4.2.1 and *AIP Canada (ICAO) GEN 3.2*).

1.2 SUMMARY OF NATIONAL REGULATIONS

Civil aviation in Canada is regulated by the *Aeronautics Act* and the CARs. (See MAP 4.1 to find out where to find the CARs). A legislation index is located in GEN 5.3.

1.3 DIFFERENCES WITH THE INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) STANDARDS, RECOMMENDED PRACTICES AND PROCEDURES

Differences with ICAO Annexes, which comprise international standards, recommended practices and procedures, are listed in *AIP Canada (ICAO)*, GEN 1.7.

1.3.1 International Civil Aviation Organization (ICAO)'s Procedures for Air Navigation Services—Aircraft Operations (PANS OPS)

(See *AIP Canada (ICAO)* GEN 1.7)

1.4 UNITS OF MEASUREMENT

The imperial system of units is used for all information contained on aeronautical charts and publications.

1.4.1 Other Units

Other units are given in the following table and apply to specific situations.

Table 1.1—Other Units of Measurement Used in Aviation

MEASUREMENT	UNITS	SYMBOLS
Altimeter setting	inches of mercury	in. Hg
Altitudes, elevations and heights	feet	ft
Distance used in navigation	nautical miles	NM
Horizontal speed	knots	kt
Relatively short distances	feet	ft
Runway Visual Range (RVR)	feet	ft
Temperature	degrees Celsius	°C
Tire pressure	pounds per square inch megapascals	psi MPa
Vertical speed	feet per minute	ft/min
Visibility	statute miles	SM
Weight	pounds kilograms kilonewtons	lb kg kN
Wind direction, except for landing and takeoff	degrees true	°True
Wind direction observations for landing and takeoff *Degrees true in the NDA	degrees magnetic	°Mag
Wind speed	knots	kt

1.4.2 Geographic Reference

Geographic coordinates are determined using the North American Datum 1983 (NAD83). Canada has deemed NAD83 coordinates to be equivalent to the World Geodetic System 1984 (WGS-84) for aeronautical purposes.

1.5 TIME SYSTEM

Coordinated Universal Time, abbreviated UTC, Zulu (Z) or spoken Universal, is used in Canadian aviation operations and is given to the nearest minute. Time checks are given to the nearest 15 seconds. The day begins at 0000 hours and ends at 2359 hours.

1.5.1 Date-Time Group

(See *AIP Canada (ICAO) GEN 2.1*)

1.5.2 Morning and Evening Twilight Charts

In the morning, civil twilight begins when the centre of the sun's disc is 6° below the horizon and is ascending, and ends at sunrise, approximately 25 min later. In the evening, civil twilight begins at sunset, and ends when the centre of the sun's disc is 6° below the horizon and is descending, approximately 25 min later.

INSTRUCTIONS

1. Start at the top or bottom of the scale with the appropriate date and move vertically, up or down to the curve of the observer's latitude.
2. From the intersection move horizontally and read the local time.
3. To find the exact zone or standard time, ADD 4 minutes for each degree west of the standard meridian, or SUBTRACT 4 minutes for each degree east of the standard meridian.

The standard meridians in Canada are: AST-60W; EST-75W; CST-90W; MST-105W; PST-120W

Figure 1.2—Beginning of Morning Civil Twilight on Standard Meridian of Time Zone

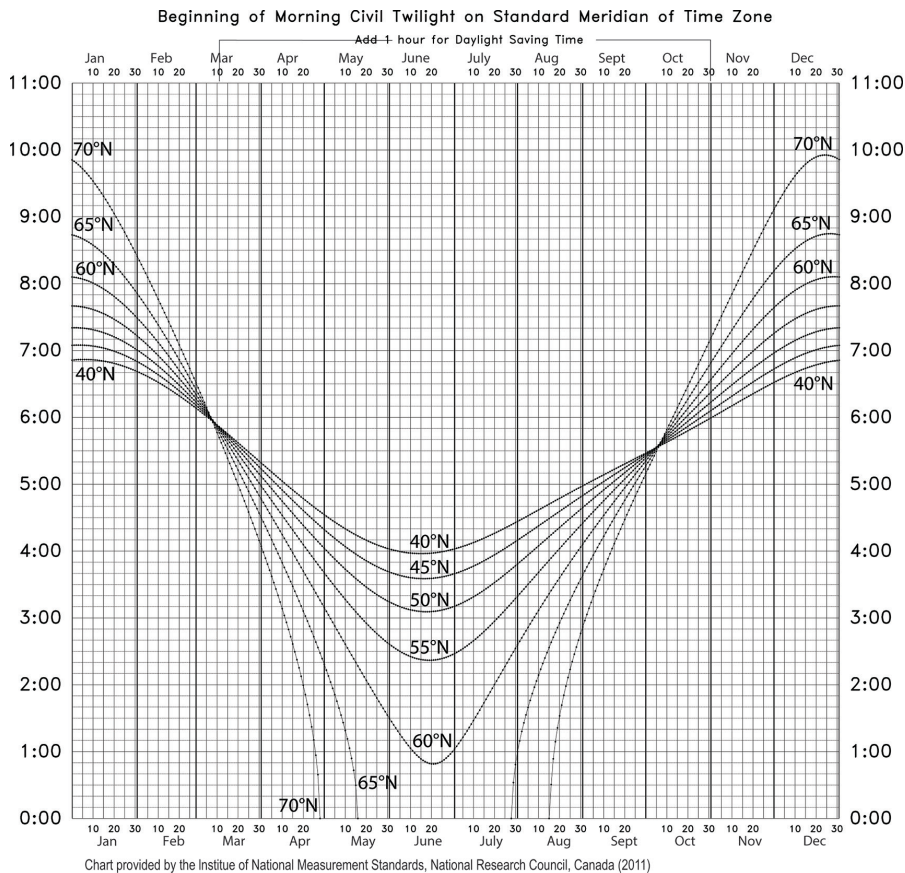
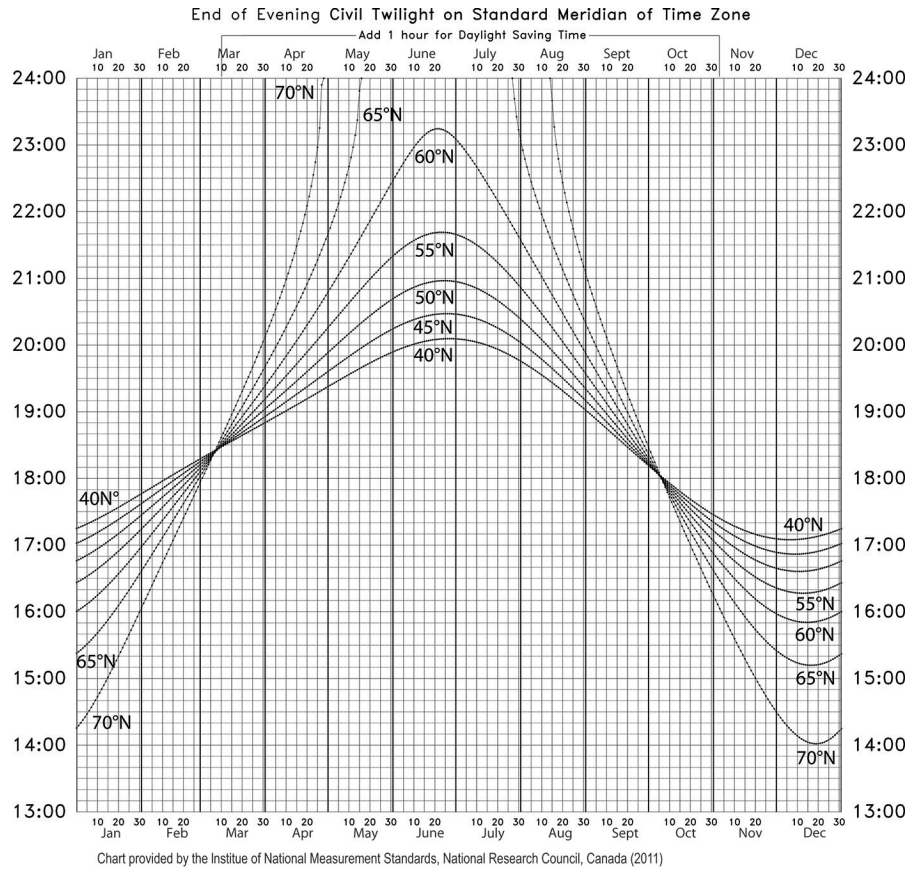


Figure 1.3—End of Evening Civil Twilight on Standard Meridian of Time Zone



1.5.3 Time Zone

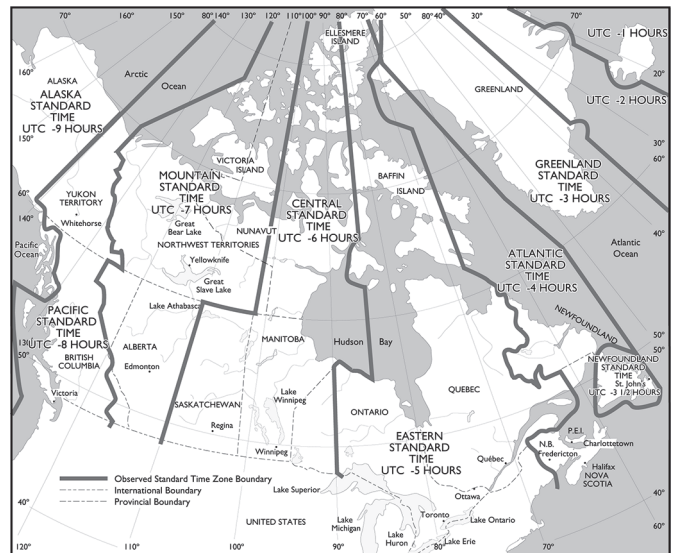
Where daylight saving time is observed in Canada, clocks are advanced one hour. Daylight saving time is in effect from 02:00 local time on the second Sunday in March to 02:00 local time on the first Sunday in November. Locations that observe daylight saving time are indicated in the CFS and the CWAS with the

abbreviation DT or the symbol “ $\frac{1}{2}$ ”, in the Aerodrome/Facility Directory, under the subheading REF (references).

Table 1.2—Time Zone Local Times

Time Zone	To Obtain Local Time
Newfoundland	UTC minus 3 1/2 hours (2 1/2 DT)
Atlantic	UTC minus 4 hours (3 DT)
Eastern	UTC minus 5 hours (4 DT)
Central	UTC minus 6 hours (5 DT)
Mountain	UTC minus 7 hours (6 DT)
Pacific	UTC minus 8 hours (7 DT)

Figure 1.4—Time Zone



1.6 NATIONALITY AND REGISTRATION MARKS

(See *AIP Canada (ICAO) GEN 2.1.5*)

1.7 V-SPEEDS

Table 1.3—V-Speeds

V_1	Critical engine failure recognition speed *
V_2	Takeoff safety speed
V_{2min}	Minimum takeoff safety speed
V_3	Flap retraction speed
V_a	Design safety speed
V_b	Speed for maximum gust intensity
V_c	Cruise speed
V_d	Diving speed
V_{df}/M_{df}	Demonstrated flight diving speed
V_f	Flap speed
V_{fe}	Maximum flap speed
V_h	Maximum level flight speed at maximum continuous power

V_{le}	Landing gear extended speed
V_{lo}	Maximum landing gear operation speed
V_{mc}	Minimum control speed with critical engine inoperative
V_{mo}/M_{mo}	Maximum operating limit speed
V_{mu}	Minimum unstick speed
V_{no}	Maximum structural cruising speed **
V_{nc}	Never exceed speed
V_r	Rotation speed
V_{ref}	Landing reference speed
V_s	Stalling speed or minimum steady controllable flight speed
V_{st}	Stalling speed or minimum steady flight speed obtained in a specific configuration
V_{so}	Stalling speed or minimum steady flight speed in the landing configuration
V_x	Speed for best angle of climb
V_y	Speed for best rate of climb

* This definition is not restrictive. An operator may adopt any other definition outlined in the aircraft flight manual (AFM) of TC type-approved aircraft as long as such definition does not compromise operational safety of the aircraft.

** For older transport category aircraft V_{no} means normal operating limit speed.

1.7.1 Conversion Tables

Table 1.4—Conversion of Millibars to Inches of Mercury

hPa/mb	0	1	2	3	4	5	6	7	8	9
	INCHES									
940	27.76	27.79	27.82	27.85	27.88	27.91	27.94	27.96	27.99	28.02
950	28.05	28.08	28.11	28.14	28.17	28.20	28.23	28.26	28.29	28.32
960	28.35	28.38	28.41	28.44	28.47	28.50	28.53	28.56	28.58	28.61
970	28.64	28.67	28.70	28.73	28.76	28.79	28.82	28.85	28.88	28.91
980	28.94	28.97	29.00	29.03	29.06	29.09	29.12	29.15	29.18	29.20
990	29.23	29.26	29.29	29.32	29.35	29.38	29.41	29.44	29.47	29.50
1000	29.53	29.56	29.59	29.62	29.65	29.68	29.71	29.74	29.77	29.80
1010	29.83	29.85	29.88	29.91	29.94	29.97	30.00	30.03	30.06	30.09
1020	30.12	30.15	30.18	30.21	30.24	30.27	30.30	30.33	30.36	30.39
1030	30.42	30.45	30.47	30.50	30.53	30.56	30.59	30.62	30.65	30.68
1040	30.71	30.74	30.77	30.80	30.83	30.86	30.89	30.92	30.95	30.98
1050	31.01	31.04	31.07	31.09	31.12	31.15	31.18	31.21	31.24	31.27

NOTE:

1 millibar (mb) = 1 hectopascal (hPa)

Table 1.5—Celsius and Fahrenheit Degrees Temperature Scales

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
-45	-49.0	-33	-27.4	-21	-5.8	-9	15.8	3	37.4	15	59.0	27	80.6	39	102.2
-44	-47.2	-32	-25.6	-20	-4.0	-8	17.6	4	39.2	16	60.8	28	82.4	40	104.0
-43	-45.4	-31	-23.8	-19	-2.2	-7	19.4	5	41.0	17	62.6	29	84.2	41	105.8
-42	-43.6	-30	-22.0	-18	-0.4	-6	21.2	6	42.8	18	64.4	30	86.0	42	107.6
-41	-41.8	-29	-20.2	-17	1.4	-5	23.0	7	44.6	19	66.2	31	87.8	43	109.4
-40	-40.0	-28	-18.4	-16	3.2	-4	24.8	8	46.4	20	68.0	32	89.6	44	111.2
-39	-38.2	-27	-16.6	-15	5.0	-3	26.6	9	48.2	21	69.8	33	91.4	45	113.0
-38	-36.4	-26	-14.8	-14	6.8	-2	28.4	10	50.0	22	71.6	34	93.2	46	114.8
-37	-34.6	-25	-13.0	-13	8.6	-1	30.2	11	51.8	23	73.4	35	95.0	47	116.6
-36	-32.8	-24	-11.2	-12	10.4	0	32.0	12	53.6	24	75.2	36	96.8	48	118.4
-35	-31.0	-23	-9.4	-11	12.2	1	33.8	13	55.4	25	77.0	37	98.6	49	120.2
-34	-29.2	-22	-7.6	-10	14.0	2	35.6	14	57.2	26	78.8	38	100.4	50	122.0

Table 1.6—Conversion Factors

To CONVERT	INTO	MULTIPLY BY
centimetres	inches	0.394
feet	metres	0.305
imperial gallon	U.S. gallon	1.201
imperial gallon	litres	4.546
inches	centimetres	2.540
inches of mercury	pounds per square inch	0.490
kilograms	pounds	2.205
kilograms per litre	pounds per imperial gallon	10.023
kilograms per litre	pounds per U.S. gallon	8.333
kilometres	nautical miles	0.540
kilometres	statute miles	0.621
litres	imperial gallon	0.220
litres	U.S. gallon	0.264
megapascals	pounds per square inch	145.14
metres	feet	3.281
nautical miles	kilometres	1.852
nautical miles	statute miles	1.152
newton	pounds	0.2248
pounds	kilograms	0.454
pounds	newtons	4.448

To CONVERT	INTO	MULTIPLY BY
pounds per imperial gallon	kilograms per litre	0.0998
pounds per square inch	inches of mercury	2.040
pounds per square inch	megapascals	0.00689
pounds per U.S. gallon	kilograms per litre	0.120
statute miles	kilometres	1.609
statute miles	nautical miles	0.868
U.S. gallon	imperial gallon	0.833
U.S. gallon	litres	3.785

1.7.2 RVR Comparative Scale—Feet to Metres

Table 1.7—RVR Comparative Scale: in Feet and Metres

RVR - FEET	RVR - METRES
500	150
600	175
700	200
1000	300
1200	350
1400	400
2600	800
4000	1200
5000	1500

2.0 SAFETY

2.1 AVIATION OCCUPATIONAL HEALTH AND SAFETY PROGRAM

Employers have a general obligation or duty to ensure that the health and safety of all persons they employ are protected while they are at work. Also, employers have specific duties in regard to each workplace they control and every work activity under their authority that occurs in a workplace that is beyond the employer's control.

No one knows a workplace better than the people who work in it, so Part II of the *Canada Labour Code* gives the workplace parties—employees and employers—a strong role in identifying and resolving health and safety concerns.

2.1.1 General

The TC Aviation Occupational Health and Safety Program began in 1987. Its primary objective is to ensure the health and safety of employees working on board aircraft in operation. This goal is accomplished through the administration, enforcement, and promotion of Part II of the *Canada Labour Code* (the Code) and the pursuant *Aviation Occupational Health and Safety Regulations*. The purpose of Part II of the Code is “to prevent accidents and injury to health arising out of, linked with or occurring in the course of employment to which this part applies”.

The Aviation Occupational Health and Safety Program operates as an extended jurisdiction from the Labour Program of Employment and Social Development Canada (ESDC) and is administered by TC, Safety and Security by virtue of a memorandum of understanding with Employment and Social Development Canada.

For additional information, see www.tc.gc.ca/eng/civilaviation/standards/commerce-ohs-menu-2059.htm.

2.1.2 Refusal to Work in Dangerous Situations

As outlined in subsection 128(1) of the Code, all employees have a legal right to refuse dangerous work and to refuse to work in a place if they have reasonable cause to believe that the use or operation of a machine or thing, the performance of an activity, or a condition existing in the workplace constitutes a danger to themselves or others. Pursuant to subsection 122(1) of the Code: *“‘danger’ means any hazard, condition or activity that could reasonably be expected to be an imminent or serious threat to the life or health of a person exposed to it before the hazard or condition can be corrected or the activity altered”*.

Due to the health and safety risk towards others, pilots are not permitted to refuse to work while in flight (see paragraph 128(2) (a) of the Code). However, pilots are permitted to refuse to work before or after the aircraft is in operation (e.g. at the gate or on the apron). Flight attendants and other on board employees must

report any in-flight refusal to work to the pilot-in-command who will in turn decide if the refusal is permitted while in the air. Regardless of whether the refusal is permitted in flight, it will be addressed as soon as the aircraft is on the ground at its next destination.

Once an employee has indicated that they are refusing to work, both they and their employer have specific roles and responsibilities that have been established to assist them in working together to find a solution. Sections 128 and 129 of the Code identify these employee and employer roles and responsibilities as well as the role and responsibility of the delegated labour program official, should their intervention become necessary.

To protect employees' rights, section 147 of the Code states that no employer shall take, or threaten to take, any disciplinary action against an employee who has refused to work in a dangerous situation. It should also be noted that subsection 147.1(1) states that after all the investigations and appeals have been exhausted by the employee who exercised their right to refuse dangerous work, the employer may take disciplinary action against that employee provided the employer can demonstrate that the employee has willfully abused their rights.

2.1.3 Delegated Labour Program Officials

The Aviation Occupational Health and Safety Program Headquarters provides guidance and assistance to regional delegated labour program officials who conduct inspections, investigations, and promotional visits to ensure that air operators are committed to the health and safety of their employees.

Delegated labour program officials may be reached during the day at their workplace by using the “How to Reach Us” page on the TC Aviation Occupational Health and Safety Web site: www.tc.gc.ca/eng/civilaviation/standards/commerce-ohs-reach-us-menu-2116.htm.

To ensure 24-hr service to the aviation community, in urgent situations or after working hours, a delegated labour program official may be reached through the Aviation Operations Centre (AVOPS) at: <https://www.tc.gc.ca/eng/civilaviation/opssvs/emergencies-incidentreporting-menu.htm>.

2.2 AVIATION SAFETY ANALYSIS

2.2.1 General

The Aviation Safety Analysis Division in the Policy and Regulatory Services Branch is responsible for monitoring and evaluating the level of safety within the National Civil Air Transportation System (NCATS) by:

- a) monitoring and evaluating all facets of the system;
- b) reviewing and analyzing accident and incident data, as well as other safety-related information;

- c) assessing risk and providing risk management advice; and
- d) preparing and coordinating emergency response to national or international emergencies affecting aviation.

For more information on the Policy and Regulatory Services Branch and its activities, visit its Web site at www.tc.gc.ca/eng/civilaviation/regserv/menu.htm.

2.2.2 Aviation Safety Research and Analysis

One of the objectives of the Aviation Safety Research and Analysis unit is to produce safety intelligence. This is information about hazards in the National Civil Air Transportation System (NCATS) that allows managers in Civil Aviation to understand the hazards and risks present in the elements of the system they oversee. Aviation safety hazards and trends are proactively identified, analyzed, and evaluated in order to produce a mix of special studies and routine standard products. This strategic analytical capability supports the development of mitigation and prevention strategies necessary for managing risks. These strategies feed into policy development, regulatory framework, and Civil Aviation operational areas.

2.2.3 Minister's Observer and Technical Advisor Programs

Key aspects of obtaining safety intelligence are the Minister's Observer and Technical Advisor Programs. While it is the TSB's mandate to advance transportation safety by conducting investigations into occurrences, the Minister's observer/technical advisor plays an essential role by:

- a) obtaining timely, factual information from an on-going investigation;
- b) advising the Minister of significant regulatory factors;
- c) identifying deficiencies that require immediate coordination of corrective actions;
- d) being TC's support to an aviation occurrence investigation; and
- e) providing safety intelligence to senior managers and the Minister to help support their decision making.

As a member of ICAO, Canada enjoys certain rights and accepts certain responsibilities in relation to accidents either occurring in another State, or where another State has an interest in an accident that occurs in Canada.

These responsibilities are detailed in Article 26 of ICAO's *Convention on International Civil Aviation*, which imposes an obligation on the State in which the aircraft accident occurs to institute an inquiry in accordance with ICAO procedures; and Article 37, which provides for the standards and recommended practices (SARPS) for aircraft accident investigation, which are detailed in Annex 13 to the Convention.

In the event of an accident that occurs outside Canada and involves a Canadian-registered aircraft, or an aircraft or significant component manufactured in Canada, Canada has the right to appoint an accredited representative. Under Annex 13, this duty falls to the TSB. TC and other Canadian interests may appoint technical advisors to support the accredited representative.

In the event of a domestic occurrence, the *Canadian Transportation Accident Investigation and Safety Board Act* (CTAISB Act) contains provisions that permit a party of direct interest to participate as an observer in a TSB investigation if the Board determines that it is appropriate.

If the TSB decides not to investigate, in accordance with subsection 14(2) of the CTAISB Act, TC can make a formal request to the TSB to investigate. Subsection 14(4) of the CTAISB Act also states:

“Nothing [...] prevents a department from commencing an investigation into or continuing to investigate a transportation occurrence for any purpose other than that of making findings as to its causes and contributing factors, or from investigating any matter that is related to the transportation occurrence and that is not being investigated by the Board[...].”

In the event of an occurrence involving a Canadian civil aviation certificate holder, Civil Aviation must determine, on behalf of the Minister, as quickly as possible, whether or not the certificate holder continues to meet the certificate's conditions of issue.

2.2.4 Safety Promotion

As part of Civil Aviation's wider risk mitigation strategy, TC communicates safety information to promote the adoption of practices known to be effective at mitigating risk and to educate the wider aviation community on current and emerging hazards.

Promotional and educational products are developed, as appropriate, to support Civil Aviation's programs and initiatives for the benefit of the Canadian aviation industry. These programs and initiatives aim to enhance aviation safety awareness and accident prevention. The *Aviation Safety Letter* (ASL), Civil Aviation's quarterly online newsletter, includes articles that address aviation safety from all perspectives, such as safety insight derived from accidents and incidents, regulatory updates, as well as safety information tailored to the needs of pilots, AMEs, certificate holders, and all other interested individuals within the aviation community. Readers can subscribe to the ASL e-Bulletin notification service to receive e-mails that announce the release of each new issue of the ASL and include a link to the ASL Web page. To register for this service, please go to www.tc.gc.ca/ASL and follow the appropriate steps. Those who prefer a printed copy can order a print-on-demand version (black and white) through TC's Publication Order Desk by calling 1-888-830-4911 or e-mailing MPSI@tc.gc.ca.

3.0 TRANSPORTATION SAFETY BOARD OF CANADA (TSB)

3.1 AVIATION SAFETY INVESTIGATION

The purpose of an aviation safety investigation into an aircraft accident or incident is to prevent a recurrence; it is not to determine or apportion blame or liability. The TSB, established under the *Canadian Transportation Accident Investigation and Safety Board Act* (CTAISB Act), is responsible for investigating all aviation occurrences in Canada involving civil aircraft registered both in Canada and abroad. A team of investigators is on 24-hr standby. The following text is mainly taken from the recently

updated *Transportation Safety Board of Canada Regulations*. The complete text of both the CTAISB Act as well as the updated Regulations can be found on the Department of Justice Web site.

3.2 DEFINITIONS

Under the CTAISB Act, “*aviation occurrence*” means

- a) any accident or incident associated with the operation of an aircraft, and
- b) any situation or condition that the Board has reasonable grounds to believe could, if left unattended, induce an accident or incident described in paragraph (a).

The following definitions are taken from the *Transportation Safety Board of Canada Regulations*.

“*Collision*” means an impact, other than an impact associated with normal operating circumstances, between aircraft or between an aircraft and another object or terrain.

“*Dangerous goods*” has the same meaning as in section 2 of the *Transportation of Dangerous Goods Act, 1992*.

“*Operation*” means the activities for which an aircraft is used from the time any person boards the aircraft with the intention of flight until they disembark.

“*Risk of collision*” means a situation in which an aircraft comes so close to being involved in a collision that a threat to the safety of any person, property or the environment exists.

“*Serious injury*” means:

- a) a fracture of any bone, except simple fractures of fingers, toes or the nose;
- b) lacerations that cause severe hemorrhage or nerve, muscle or tendon damage;
- c) an injury to an internal organ;

- d) second or third degree burns, or any burns affecting more than 5% of the body surface;
- e) a verified exposure to infectious substances or injurious radiation; or
- f) an injury that is likely to require hospitalization.

3.3 REPORTING AN AVIATION OCCURRENCE

The owner, operator, pilot-in-command, any crew member of the aircraft and any person providing air traffic services that have direct knowledge of an occurrence must report the following aviation occurrences to the Board if they result directly from the operation of an aircraft.

3.3.1 Accidents

In the case of an accident,

1. a person is killed or sustains a serious injury as a result of:
 - a) being on board the aircraft,
 - b) coming into direct contact with any part of the aircraft, including parts that have become detached from the aircraft, or
 - c) being directly exposed to jet blast, rotor down wash or propeller wash, the aircraft sustains structural failure or damage that adversely affects the aircraft’s structural strength, performance or flight characteristics and would normally require major repair or replacement of any affected component, except for:
 - d) engine failure or damage, when the damage is limited to the engine, its cowlings or accessories, or
 - e) damage limited to propellers, wing tips, antennae, tires, brakes, fairings or small dents or puncture holes in the aircraft’s skin, or
2. the aircraft is missing or inaccessible.

3.3.2 Mandatory Reportable Incidents

In the case of an incident involving an aircraft having a maximum certificated take-off weight greater than 2 250 kg, or of an aircraft being operated under an air operator certificate issued under Part VII of the *Canadian Aviation Regulations*:

1. an engine fails or is shut down as a precautionary measure,
2. a power train transmission gearbox malfunction occurs,
3. smoke is detected or a fire occurs on board,

4. difficulties in controlling the aircraft are encountered owing to any aircraft system malfunction, weather phenomena, wake turbulence, uncontrolled vibrations or operations outside the flight envelope,
 5. the aircraft fails to remain within the intended landing or take-off area, lands with all or part of the landing gear retracted or drags a wing tip, an engine pod or any other part of the aircraft,
 6. a crew member whose duties are directly related to the safe operation of the aircraft is unable to perform their duties as a result of a physical incapacitation which poses a threat to the safety of persons, property or the environment,
 7. depressurization of the aircraft occurs that requires an emergency descent,
 8. a fuel shortage occurs that requires a diversion or requires approach and landing priority at the destination of the aircraft,
 9. the aircraft is refuelled with the incorrect type of fuel or contaminated fuel,
 10. a collision, a risk of collision or a loss of separation occurs,
 11. a crew member declares an emergency or indicates an emergency that requires priority handling by air traffic services or the standing by of emergency response services,
 12. a slung load is released unintentionally or as a precautionary or emergency measure from the aircraft, or
 13. any dangerous goods are released in or from the aircraft.
8. a description of the occurrence and the extent of any resulting damage to the environment and to the aircraft and any other property;
 9. a list of any dangerous goods carried on board or released from the aircraft, including the shipping name or UN number and consignor and consignee information;
 10. if the aircraft is missing or inaccessible:
 11. the last known position of the aircraft by reference to an easily defined geographical point, or by latitude and longitude, including the date and time that the aircraft was at that position, and
 12. the actions taken or planned to locate or gain access to the aircraft;
 13. a description of any action taken or planned to protect persons, property and the environment;
 14. the name and title of the person making the report and the phone number and address at which they can be reached; and
 15. any information specific to the occurrence that the Board requires.

The person making the report must send to the Board as soon as possible and by the quickest means available, all the information required that is available at the time of the occurrence; and the remainder of that information as soon as it becomes available within 30 days after the occurrence.

3.3.3 Information to Report

The report must contain the following information:

1. the type, model, nationality and registration marks of the aircraft;
2. the name of the owner, operator, pilot-in-command and, if applicable, hirer of the aircraft;
3. the last point of departure and the intended destination of the aircraft, including the date and time of the departure;
4. the date and time of the occurrence;
5. the name of the person providing air traffic services related to the occurrence;
6. the number of crew members, passengers and other persons involved in the occurrence and the number of those who were killed or sustained serious injuries as a result of the occurrence;
7. the location of the occurrence by reference to an easily defined geographical point, or by latitude and longitude;

3.3.4 Other Occurrences

Any other incident indicative of a deficiency or discrepancy in the Canadian air transportation system may be reported in writing to the TSB. Sufficient details concerning the incident should be provided to enable the identification of action required to remedy the deficiency or discrepancy.

3.3.5 Contacting the Transportation Safety Board of Canada (TSB)

Aviation occurrences are to be reported to a regional TSB office, using the telephone numbers listed in GEN 3.6.

For Canadian-registered aircraft operating outside of Canada, in addition to the reporting required by the state of occurrence, a report shall be made to the TSB regional office nearest to the company's headquarters or, for private aircraft, nearest to the aircraft's home base.

3.4 KEEPING AND PRESERVATION OF EVIDENCE

Every person having possession of or control over evidence relating to a transportation occurrence must keep and preserve the evidence unless the Board provides otherwise. This is not to be construed as preventing any person from taking the necessary measures to ensure the safety of any person, property or the environment. Any person who takes these measures must, to the extent possible in the circumstances and before taking those measures, record the evidence by the best means available and advise the Board of their actions.

3.5 SECURITAS PROGRAM

The SECURITAS program provides a means for individuals to report incidents and potentially unsafe acts or conditions relating to the Canadian transportation system that would not normally be reported through other channels. It should be noted that this multi-modal, confidential safety reporting system replaces the Confidential Aviation Safety Reporting Program (CASRP).

Each report is assessed by SECURITAS analysts. When a reported concern is validated as a safety deficiency, the TSB normally forwards the information, often with suggested corrective action, to the appropriate regulatory authority, or in some cases, the transportation company, organization or agency. No information will be released that could reasonably be expected to reveal the reporter's identity without the reporter's written consent.

3.5.1 How to Report to SECURITAS

SECURITAS is primarily concerned with unsafe acts and conditions relating to commercial and public transportation systems. When contacting SECURITAS, ensure the following is included in your message:

- your name, address and phone number
- your profession and experience
- your involvement in the unsafe situation being reported
- where else you may have reported this unsafe situation or safety concern

- complete identification of the aircraft or related facility/equipment
- the name of the owner/operator of the equipment

Also, please describe the unsafe act or safety concern.

For example:

- How was the unsafe act/condition discovered?
- If you are describing an event, tell SECURITAS
 - what happened;
 - where it happened;
 - when it happened (the date and the local time); and
 - why you think it happened.
- What actions/inactions resulted, or could have resulted?
- How do you think the situation could be corrected?

3.5.2 What to Report to SECURITAS

These are some examples of the types of situations that could affect air transportation safety and that your report might help correct.

Unsafe conditions:

- chronic lack of repair of aircraft, poor maintenance practices
- unsafe runway or aerodrome conditions
- inadequate or poor air traffic services in a particular area
- poor reception of navigation signals, weak radio coverage, inadequate weather services
- errors in aeronautical publications: unsafe procedures published in manuals of instructions for pilots, cabin crew, ground crew, aircraft maintenance or air traffic services

Unsafe procedures and practices:

- routinely descending below minimum en route altitude or approach in IMC
- non-compliance with airworthiness directives, minimum equipment list
- pilots flying in excess of regulatory flight-time limits
- unsafe aircraft circuit procedures and/or communications



- air traffic control practices that could jeopardize the safety of flight, e.g. use of non-standard phraseology, compromising separation criteria, inadequate manning and supervision
- unsafe cabin baggage stowage procedures, unsafe passenger seating or cargo securing arrangements
- aircraft maintenance procedures not completed correctly but signed off
- shortcuts in following checklist procedures
- crew scheduling problems: inadequate crew composition, unqualified crew, inadequate crew rest
- scheduling personnel who are not professionally or medically qualified for the assigned duties
- the use of unapproved parts, time-expired equipment

3.5.3 Where to Submit a SECURITAS Report

To submit a report, contact SECURITAS at:

SECURITAS
 PO Box 1996, Station B
 Gatineau QC J8X 3Z2
 Tel.: 1-800-567-6865
 Fax: 819-994-8065
 E-mail: securitas@tsb-bst.gc.ca

3.6 OFFICES OF THE TRANSPORTATION SAFETY BOARD OF CANADA (TSB)

HEADQUARTERS:

Place du Centre, 4th Floor
 200 Promenade du Portage
 Gatineau QC K1A 1K8
 Toll-free (within Canada): 1-800-387-3557
 Toll: 819-994-3741
 Fax:
 Toll-free (within Canada): 1-833-644-5149
 Toll: 819-997-2239
 TDD: 819-953-7287
 E-mail: airops@tsb-bst.gc.ca

REGIONAL OFFICES (AIR)

TSB—Pacific

Regional Office Administration, TSB-AIR
 4-3071 No 5 Road
 Richmond BC V6X 2T4
 Toll-free (within Canada): 1-800-387-3557
 Toll: 604-202-2400
 E-mail: airnotifications.vancouver@tsb-bst.gc.ca

TSB—Western

Regional Office Administration, TSB-AIR
 17803-106A Avenue
 Edmonton AB T5S 1V8
 Toll-free (within Canada): 1-800-387-3557
 E-mail: airnotifications.edmonton@tsb-bst.gc.ca

TSB—Central

Regional Office Administration, TSB-AIR
 335-550 Century Street
 Winnipeg MB R3H 0Y1
 Toll-free (within Canada): 1-800-387-3557
 Toll: 204-983-5991
 Fax: 204-983-8026
 E-mail: airnotifications.winnipeg@tsb-bst.gc.ca

TSB—Ontario

Regional Office Administration, TSB-AIR
 23 Wilmot Street East
 Richmond Hill ON L4B 1A3
 Toll-free (within Canada): 1-800-387-3557
 Toll: 905-771-7676
 E-mail: airnotifications.toronto@tsb-bst.gc.ca

TSB—Quebec (Dorval)

Regional Office Administration, TSB-AIR
 185 Dorval Avenue, Suite 403
 Dorval QC H9S 5J9
 Toll-free (within Canada): 1-800-387-3557
 Toll: 514-633-3246
 Fax: 514-633-2944
 E-mail: airnotifications.montreal@tsb-bst.gc.ca

TSB—Atlantic

Regional Office Administration, TSB-AIR
 150 Thorne Avenue
 Dartmouth NS B3B 1Z2
 Toll-free (within Canada): 1-800-387-3557
 Toll: 902-426-8563
 Fax: 902-426-5143
 E-mail: airnotifications.dartmouth@tsb-bst.gc.ca

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5.0 MISCELLANEOUS

5.1 GLOSSARY OF AERONAUTICAL TERMS

“Acknowledge”

An expression used in radiocommunication meaning “Let me know that you have received and understood this message.”

acts of unlawful interference

Acts or attempted acts such as to jeopardize the safety of civil aviation and air transport, i.e.:

- a) unlawful seizure of aircraft in flight;
- b) unlawful seizure of aircraft on the ground;
- c) hostage-taking on board aircraft or on aerodromes;
- d) forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility;
- e) introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes;
- f) communication of false information such as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility.

aerodrome

Any area of land, water (including the frozen surface thereof) or other supporting surface used, designed, prepared, equipped or set apart for use, either in whole or in part, for the arrival, departure, movement or servicing of aircraft. This includes any buildings, installations and equipment situated thereon or associated therewith.

aerodrome traffic frequency (ATF)

A very high frequency (VHF) designated to ensure that all radio-equipped aircraft operating at or in the vicinity of an aerodrome, or in a defined area where VFR traffic is high, are listening on a common frequency and following a common reporting procedure.

afterimage

A collection of light, dark, or coloured spots, perceived after exposure to bright light, that may be distracting and disruptive and may persist for several minutes.

- see also: **flash blindness, glare**

airborne collision avoidance system (ACAS)

An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

aircraft critical surface contamination (ACSC)

Presence of substances, including frost, ice and snow, on the critical surface of an aircraft that can have an adverse impact on the performance of an aircraft.

aircraft radio control of aerodrome lighting (ARCAL)

A system used by pilots to control some or all of the aerodrome lighting, aside from obstacle lights, via the aircraft VHF transmitter and the microphone on the appropriate frequency.

air defence identification zone (ADIZ)

An airspace of defined dimensions extending upwards from the surface of the earth within which certain rules for the security control of air traffic apply.

airport (APRT)

An aerodrome for which an airport certificate is in force.

airspace classification (see RAC 2.8).

The division of the Canadian Domestic Airspace (CDA) into seven classes, each identified by a single letter: A, B, C, D, E, F or G. The application of any classification to an airspace structure determines the operating rules, the level of ATC service provided within the structure and, in some instances, communications and equipment requirements. The horizontal and vertical limits of airspace are described in the *Designated Airspace Handbook* (DAH).

air traffic

All aircraft in flight or operating on the manoeuvring area of an aerodrome.

air traffic control clearance

An authorization issued by an ATC unit for an aircraft to proceed within controlled airspace in accordance with the conditions specified by that unit.

- also called: **air traffic clearance, ATC clearance and clearance**

air traffic control instruction

A directive issued by an ATC unit for ATC purposes.

air traffic control service

A service provided for the purposes of

- a) preventing collisions between
 - (i) aircraft;
 - (ii) aircraft and obstacles; and
 - (iii) aircraft and vehicles on the manoeuvring area; and
- b) expediting and maintaining an orderly flow of air traffic.

- also called: **ATC service**

air traffic control unit

As the circumstances require, this may be

- a) an area control centre (ACC) established to provide ATC service to aircraft; or
- b) an airport control tower unit established to provide ATC service to airport traffic.
 - also called: **ATC unit**

alternate aerodrome

An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or land at the aerodrome of intended landing. Alternate aerodromes include the following:

- a) takeoff alternate aerodrome
- b) en-route alternate aerodrome
- c) destination alternate aerodrome

NOTE:

The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.

apron

That part of an aerodrome, other than the manoeuvring area, intended to accommodate the loading and unloading of passengers and cargo; the refuelling, servicing, maintenance and parking of aircraft; and any movement of aircraft, vehicles and pedestrians engaged in services for such purposes.

- also called: **flight line, ramp and tarmac**

arc

The track over the ground of an aircraft flying at a constant distance from a NAVAID by reference to distance measuring equipment (DME).

Arctic Control Area (ACA) (see RAC Figure 2.3)

A controlled airspace within the Northern Domestic Airspace (NDA) at FL 270 and above.

area minimum altitude (AMA)

The lowest altitude that may be used under instrument meteorological conditions (IMC) that will provide a minimum vertical clearance of 1000 ft or, in a designated mountainous region, 2000 ft, rounded up to the next 100-ft increment, under conditions of standard temperature and pressure, above all obstacles located in the area specified.

NOTE

This term replaced the term geographic area safe altitude (GASA) on April 18, 2002.

area navigation (RNAV)

A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based NAVAIDs or within the limits of the capability of self-contained aids, or a combination of these.

automatic dependent surveillance-broadcast (ADS-B)

A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

ballistic parachute system

An aircraft parachute system that extracts/propels the parachute via an ignitable propellant (e.g. rocket motor or explosive charge).

barometric vertical navigation (baro-VNAV)

A function of certain RNAV systems that presents to the pilot computed vertical guidance referenced to a specified vertical path, based on barometric altitude information and typically computed as a geometric path between two waypoints or an angle based on a single waypoint.

- also called: lateral navigation/vertical navigation (LNAV/VNAV)

broadcast (BCST)

A transmission of information relating to air navigation that is not addressed to a specific station or stations.

Canadian Domestic Airspace (CDA)

As geographically delineated in the *Designated Airspace Handbook* (DAH), all airspace over the Canadian land mass, the Canadian Arctic and the Canadian archipelago, and over areas of the high seas.

ceiling

The lesser of:

- a) the height above ground or water of the base of the lowest layer of cloud covering more than half the sky; or
- b) the vertical visibility in a surface-based layer which completely obscures the sky.

clearance limit

The point to which an aircraft is granted an ATC clearance.

“Cleared for the option”

- a) For an arriving aircraft: An expression used to indicate ATC authorization for an aircraft to make a touch-and-go, low approach, missed approach (MA), stop-and-go, or full-stop landing, at the discretion of the pilot.
- b) For a departing aircraft: An expression used to indicate ATC authorization for an aircraft to execute manoeuvres other than a normal takeoff (e.g. an aborted takeoff). After such

a manoeuvre, the pilot is expected to exit the runway by the most expeditious way rather than backtrack the runway.

composite flight plan

A flight plan (FP) that specifies VFR operation for one portion of flight and IFR for another portion.

contact approach

An approach wherein an aircraft on an IFR flight plan (FP), having an ATC authorization and operating clear of clouds with at least 1 mi. flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the instrument approach procedure (IAP) and proceed to the destination airport by visual reference to the surface of the earth.

continuous descent final approach (CDFA)

A technique, consistent with stabilized approach procedures, for flying the final approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the FAF altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre should begin for the type of aircraft flown.

- also called: constant descent final approach

control area extension (CAE)

A controlled airspace of defined dimensions within the low-level airspace (LLA), extending upwards from 2 200 ft AGL unless otherwise specified.

controlled airspace

An airspace of defined dimensions within which ATC service is provided.

controlled flight into terrain (CFIT)

An occurrence in which an aircraft, under the control of the crew, is flown into terrain, water or an obstacle with no prior awareness on the part of the crew of the impending disaster.

controlled VFR flight (CVFR)

A flight conducted under VFR within Class B airspace and in accordance with an ATC clearance.

control zone (CZ)

A controlled airspace of defined dimensions extending upwards from the surface of the earth up to and including 3 000 ft AAE unless otherwise specified.

critical surface

Any stabilizing surface of an aircraft, including the wings, control surfaces, rotors, propellers, horizontal stabilizers, vertical stabilizers and, in the case of an aircraft that has rear-mounted engines, the upper surface of its fuselage.

cruise climb

A cruising technique resulting in a net increase in altitude as the aircraft mass decreases. A clearance or instruction to carry out a cruise climb allows the pilot the option of climbing at any given rate, as well as the option of levelling off at any intermediate altitude.

cruising altitude

The altitude, as shown by a constant altimeter indication in relation to a fixed and defined datum, maintained during a flight or portion thereof.

daylight

The period of time during any day that begins with the morning civil twilight and ends with the evening civil twilight.

dead reckoning navigation (DR)

The estimating or determining of position by advancing an earlier known position by the application of direction, time and speed data.

decision altitude (DA)

A specified altitude in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach to land has not been established.

NOTE:

Decision altitude (DA) is referenced to mean sea level (MSL) and decision height (DH) is referenced to the threshold elevation.

decision height (DH)

A specified height in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach to land has not been established.

NOTE:

Decision height (DH) is referenced to the threshold elevation and decision altitude (DA) is referenced to mean sea level (MSL).

defence visual flight rules (DVFR)

Rules applicable to flights within an air defence identification zone (ADIZ) conducted under VFR.

directed bright light source

Any directed light source that may create a hazard to aviation safety or cause damage to an aircraft or injury to persons on board.

NOTE:

Directed bright light sources include lasers, searchlights, spotlights, and image projectors.

downwind termination waypoint (DTW)

The waypoint located downwind to the landing runway abeam the final approach course fix (FACF) where an open RNAV STAR terminates.

engineered material arresting system (EMAS)

A soft ground arrestor system, located beyond the end of the runway and centred on the extended runway centreline, that deforms under the weight of an aircraft, bringing it to a safe stop in the event of an overrun without structural damage to the aircraft or injury to its occupants.

NOTE:

EMAS beds are made up of a grouping of blocks of crushable cellular concrete that will reliably deform under the weight of an aircraft.

evening civil twilight

Relative to the standard meridians of the time zones, the period of time that begins at sunset and ends at the time specified by the Institute of National Measurement Standards of the National Research Council of Canada.

NOTE:

Evening civil twilight ends in the evening when the centre of the sun's disc is 6° below the horizon.

expected approach time (EAT)

The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for landing.

expected further clearance time (EFC)

The time at which it is expected that further clearance will be issued to an aircraft.

expedite (to)

An expression used by ATC when prompt compliance is required to avoid the development of an imminent situation.

final approach area

The area within which the final approach portion of an instrument approach procedure (IAP) is carried out.

final approach course fix (FACF)

A fix and/or waypoint located on the final approach course of an instrument approach procedure (IAP)

- a) prior to the point of glide path (GP) intercept on a precision approach procedure;
- b) prior to the final approach fix (FAF) on a non-precision approach procedure that has a designated FAF;
- c) prior to any stepdown fixes on a non-precision approach procedure with designated fixes but no FAF; or
- d) at a point that would permit a normal landing approach on a non-precision approach procedure with no FAF or stepdown fixes.

final approach fix (FAF)

The fix of a non-precision instrument approach procedure (IAP) where the final approach segment commences.

final approach segment

That part of an instrument approach procedure (IAP) from the time that the aircraft

- a) completes the last procedure turn or base turn, where one is specified;
- b) intercepts the last track specified for the procedure;
- c) (for non-precision approaches) crosses the final approach fix (FAF), final approach waypoint (FAWP) or final approach point (FAP); or
- d) (for precision approaches) crosses the point where the vertical path or glide path intercepts the intermediate approach segment altitude until the aircraft reaches the missed approach point (MAP).

- also called: **final approach**

flash blindness

The temporary or permanent inability to see caused by bright light entering the eye and persisting after the illumination has ceased.

- see also: **afterimage, glare**

flight information centre (FIC)

A centralized ATS unit that provides services pertinent to pre-flight and the en-route phase of flight.

flight information region (FIR) (see RAC Figure 2.2)

An airspace of defined dimensions extending upwards from the surface of the earth within which flight information service (FIS) and alerting service are provided.

flight information service en route (FISE)

The provision and receipt by a FIC of information pertinent to the en route phase of flight.

flight level (FL)

The altitude expressed in hundreds of feet indicated on an altimeter set to 29.92 in. of mercury or 1013.2 mb.

flight management system (FMS)

An aircraft computer system that uses a large database to allow routes to be programmed and fed into the system by means of data loader. The system is constantly updated with regard to position accuracy by reference to conventional NAVAIDS.

flight service station (FSS)

An ATS unit that provides services pertinent to the arrival and departure phases of flight at uncontrolled aerodromes and for transit through a mandatory frequency (MF) area.

flight technical error (FTE)

The difference between estimated position and defined path. It relates to the ability of an air crew or autopilot to fly along a defined path. Any display errors, such as a CDI centering error, may cause FTE. FTE is usually the largest error component of the total system error (TSE).

flight visibility

The average range of forward visibility at any given time from the cockpit of an aircraft in flight.

flow control

Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome, so as to ensure the most effective utilization of the airspace.

fuel dumping

The intentional airborne release of usable fuel, excluding the dropping of fuel tanks.

- also called: fuel jettisoning

fuel remaining

The amount of fuel remaining on board until actual fuel exhaustion.

glare

A temporary disruption in vision caused by a bright light within an individual's field of vision and lasting only as long as the light is present within that field of vision.

NOTE:

Visible laser light can produce glare and interfere with vision even at low energies, including levels well below that which produce eye damage.

- see also: **afterimage, flash blindness**

“Go around”

An expression used in radiocommunications to instruct a pilot to abandon an approach or landing.

ground visibility

In respect of an aerodrome, the visibility at that aerodrome as contained in a weather observation reported by

- an ATC unit;
- an FSS or FIC;
- a community aerodrome radio station (CARS);
- an automated weather observation system (AWOS) used by the Department of Transport, the Department of National Defence or the Atmospheric Environment Service for the purpose of making aviation weather observations; or
- a radio station that is ground-based and operated by an air operator.

hang glider

A motorless heavier-than-air aircraft deriving its lift from surfaces that remain fixed in flight, designed to carry not more than two persons and having a launch weight of 45 kg (99.2 lb) or less.

“Have numbers”

An expression used by pilots to indicate that they have received runway, wind and altimeter information only.

heading (HDG)

The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from north (true, magnetic, compass or grid north).

height above aerodrome (HAA)

The height in feet of the minimum descent altitude (MDA) above the published aerodrome elevation.

height above touchdown zone elevation

The height in feet of the decision height (DH) or the minimum descent altitude (MDA) above the touchdown zone elevation (TDZE).

- also called: **height above touchdown (HAT) and height above touchdown zone**

high-intensity runway operations (HIRO)

Operations, used at some airports, that consist of optimizing separation of aircraft on final approach in order to minimize runway occupancy time (ROT) for both arriving and departing aircraft so as to increase runway capacity.

high-level air route

In high-level airspace (HLA), a prescribed track between specified fixes.

NOTE:

On aeronautical charts, high-level air routes are indicated by letters such as “T” or “NAT.”

high-level airspace (HLA)

All airspace within the Canadian Domestic Airspace (CDA) at or above 18 000 ft ASL.

high-level airway

In controlled high-level airspace (HLA), a prescribed track between specified fixes.

NOTE:

On aeronautical charts, high-level airways are indicated by the letter “J” (e.g. J500).

initial approach segment

That part of an instrument approach procedure (IAP) between the initial approach fix (IAF) or waypoint and the intermediate approach fix (IF) or waypoint during which the aircraft departs the en route phase of flight and manoeuvres to enter the intermediate segment.

- also called: **initial approach**

instrument approach procedure (IAP)

A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix (IAF), or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.

- also called: **instrument approach**

instrument meteorological conditions (IMC)

Meteorological conditions less than the minima specified in Subpart 602 of the *Canadian Aviation Regulations* (CARs) for visual meteorological conditions (VMC), expressed in terms of visibility and distance from cloud.

intermediate approach segment

That part of an instrument approach procedure (IAP) between the intermediate approach fix (IF) or waypoint and the final approach fix (FAF), waypoint or point, or between the end of a track reversal, racetrack or dead-reckoning track procedure and the FAF, waypoint or point, as appropriate. It is in this part of the procedure that aircraft configuration, speed and positioning adjustments are made for entry into the final approach segment.

- also called: **intermediate approach**

intersection (INTXN)

As the circumstances require, this may be

- a point on the surface of the earth over which two or more position lines intersect. The position lines may be true bearings from non-directional beacons (NDB) (magnetic bearings shown on chart for pilot usage); radials from VHF/UHF NAVAIDs; centrelines of airways, fixed RNAV routes or air routes; localizers; or DME distances; or
- the point where two runways, a runway and a taxiway, or two taxiways cross or meet.

Land and Hold Short Operations (LAHSO)

Operations that include simultaneous takeoffs and landings and/or simultaneous landings when a landing aircraft is able and is instructed by the controller to hold short of the intersecting runway/taxiway or designated hold-short point.

NOTE:

This term replaces the term *Simultaneous Intersecting Runway Operations* (SIRO)

laser

(or light amplification by stimulated emission of radiation)

A device that produces an intense, directional, coherent beam of light.

low approach

An approach over an airport or runway following an instrument approach procedure (IAP) or VFR approach, including the overshoot manoeuvre, where the pilot intentionally does not make contact with the runway.

low-level air route

Within low-level uncontrolled airspace, a route extending upwards from the surface of the earth and for which ATC service is not provided.

low-level airspace (LLA)

All airspace within the Canadian Domestic Airspace (CDA) below 18 000 ft ASL.

low-level airway

Within controlled low-level airspace (LLA), a route extending upwards from 2 200 ft above the surface of the earth and for which ATC service is provided.

low-visibility operations plan (LVOP)

A plan that calls for specific procedures established by the aerodrome operator and/or ATS when aerodrome visibility is below RVR 1 200 (¼ SM).

L-routes

L-routes are low-level uncontrolled fixed RNAV routes depicted on En Route Low Altitude charts using green dashed lines and require GNSS RNAV systems for use. The MOCA provides obstacle protection for only 6 NM either side of the track centreline and does not splay.

mandatory frequency (MF)

A very high frequency (VHF) specified in the *Canada Air Pilot* (CAP), the *Canada Flight Supplement* (CFS) or the *Canada Water Aerodrome Supplement* (CWAS) for the use of radio-equipped aircraft operating within a mandatory frequency (MF) area.

manoeuvring area

The part of an aerodrome, other than an apron, that is intended to be used for the takeoff and landing of aircraft and for the movement of aircraft associated with takeoff and landing.

MEDEVAC

A term used to request ATS priority handling for a medical evacuation flight based on a medical emergency in the transport of patients, organ donors, organs or other urgently needed life-saving medical material.

NOTE:

This term is used on flight plans (FP) and in radiotelephony communications if a pilot determines that a priority is required and is suffixed to the aircraft identification.

military operations area (MOA)

An airspace of defined dimensions established to segregate certain military activities from IFR traffic and to identify, for

VFR traffic, where these activities are conducted.

military terminal control area (MTCA)

A controlled airspace of defined dimensions normally established in the vicinity of a military aerodrome and within which special procedures and exemptions exist for military aircraft. The terminology (Class B, C, D or E equivalent) used for the designations of MTCA describes the equivalent level of service and operating rules for civilian aircraft operating within the MTCA and under military control.

minimum descent altitude (MDA)

The altitude above sea level (ASL) specified in the *Canada Air Pilot (CAP)* or the route and approach inventory for a non-precision approach, below which descent shall not be made until the required visual reference to continue the approach to land has been established.

minimum en route altitude (MEA)

The altitude above sea level (ASL) between specified fixes on airways or air routes that assures acceptable navigational signal coverage and that meets the IFR obstacle clearance requirements.

NOTE:

This altitude is published on aeronautical charts.

minimum fuel

An expression used to inform ATC that an aircraft's fuel supply has reached a state that is sufficient to reach destination, provided that unexpected delays are not encountered.

minimum IFR altitude

The lowest IFR altitude established for use in a specific airspace. Depending on the airspace concerned, the minimum IFR altitude may be a minimum obstacle clearance altitude (MOCA), a minimum en route altitude (MEA), a minimum sector altitude (MSA), a minimum vectoring altitude (MVA), a safe altitude 100 NM, an area minimum altitude (AMA), a transition altitude or a missed approach altitude. The minimum IFR altitude provides obstacle clearance but may or may not be within controlled airspace.

minimum obstacle clearance altitude (MOCA)

The altitude above sea level (ASL) between specified fixes on airways or air routes that meets the IFR obstacle clearance requirements for the route segment in question.

NOTE:

This altitude is published on aeronautical charts.

minimum reception altitude (MRA)

When applied to a specific VHF/UHF intersection, the lowest altitude above sea level (ASL) at which acceptable navigational signal coverage is received to determine the intersection.

minimum sector altitude (MSA)

The lowest altitude that will provide a minimum clearance of 1000 ft, under conditions of standard temperature and pressure

above all objects located in an area contained within a sector of a circle with a 25 NM radius centred on a radio aid to navigation or a specified point.

minimum vectoring altitude (MVA)

The lowest altitude for vectoring aircraft by ATC that meets obstacle clearance and radio coverage requirements in the airspace specified.

missed approach point (MAP)

The point on the final approach course that signifies the termination of the final approach and the commencement of the missed approach segment. It may be

- a) the intersection of an electronic glide path (GP) with a decision height (DH);
- b) a NAVAID located on the aerodrome;
- c) a suitable fix (e.g. distance measuring equipment [DME]); or
- d) a specified distance beyond the NAVAID or final approach fix (FAF), not to exceed the distance from that NAVAID or fix to the nearest boundary of the aerodrome.

missed approach segment

That part of an instrument approach procedure (IAP) between the missed approach point (MAP), the missed approach waypoint (MAWP), or the point of arrival at decision height (DH), and the specified missed approach NAVAID, intersection, fix or waypoint, as appropriate, at the minimum IFR altitude. It is in this part of the approach procedure that the aircraft climbs and returns to the en route structure or is positioned for holding or a subsequent approach. The route of flight and altitudes are depicted on instrument approach charts.

- also called: **missed approach**

morning civil twilight

Relative to the standard meridians of the time zones, the period of time that begins at the time specified by the Institute for National Measurement Standards of the National Research Council of Canada and ends at sunrise.

NOTE:

Morning civil twilight begins in the morning when the centre of the sun's disc is 6° below the horizon.

mountainous region (see RAC Figure 2.10)

An area of defined lateral dimensions above which special rules concerning minimum en route altitudes (MEA) apply.

movement area

The part of an aerodrome that is intended to be used for the surface movement of aircraft and that includes the manoeuvring area and aprons.

multiple-touch and-gos

A procedure in which an aircraft makes more than one touch-and-go during a single pass along a runway.

- see also: **touch-and-go**

navigation aid (NAVAID)

Any visual or electronic device, airborne or on the surface of the earth, that provides point-to-point guidance information or position data to aircraft in flight.

- also called: **navigational aid**

navigation system error (NSE)

The difference between true and estimated position. The NSE is defined during navigation system certification.

night

The period of time during any day that starts at the end of evening civil twilight and ends at the start of morning civil twilight.

non-precision approach procedure

An instrument approach procedure (IAP) in which only electronic azimuth information is provided. No electronic glide path (GP) information is provided and obstacle assessment in the final segment is based on minimum descent altitude (MDA).

non-RVSM aircraft

An aircraft that does not meet reduced vertical separation minimum (RVSM) requirements for certification and/or for operator approval.

Northern Control Area (NCA) (see RAC Figure 2.3)

A controlled airspace within the Northern Domestic Airspace (NDA) at FL 230 and above.

Northern Domestic Airspace (NDA) (see RAC Figure 2.1)

As geographically delineated in the *Designated Airspace Handbook* (DAH), a subdivision of Canadian Domestic Airspace (CDA) commencing at the North Pole and extending southward to the northern limit of the Southern Domestic Airspace (SDA).

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.

obstacle (OBST)

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.

- also called: **obstruction**

obstacle free zone (OFZ)

The airspace above the inner approach surface, inner transitional surfaces, and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes.

obstruction

- also called: **obstacle**

pavement classification number (PCN)

Numbers expressing, in ICAO terminology, the bearing strength of a pavement for unrestricted operations in a similar fashion to Transport Canada's pavement load rating (PLR).

path definition error (PDE)

The difference between desired and defined paths which reflects errors in the navigation database, computational errors in the RNAV system and display errors. PDE is usually very small and often assumed to be negligible.

performance-based navigation (PBN)

Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

NOTE:

Performance requirements are expressed in navigation specifications in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation.

pilot briefing

The provision of, or consultation on, meteorological and aeronautical information to assist pilots in pre-flight planning.

- also called: **pre-flight pilot briefing**

precision approach radar (PAR)

A high-definition, short-range radar used as an approach aid. This system provides the controller with altitude, azimuth and range information of high accuracy for the purpose of assisting the pilot in executing an approach and landing. This form of navigation assistance is termed "precision radar approach".

pre-departure clearance (PDC)

An initial IFR clearance delivered electronically via air-ground data link (AGDL) to airline companies with an on-site computer capable of interfacing with ATC and the data link service provider.

NOTE:

Following initial delivery of the clearance to the air operator, the latter may subsequently relay the clearance by non-electronic means to the flight crew if the aircraft is not suitably equipped.

preferential runway

One or more runways designated and published by the airport operator whose selection directs aircraft away from noise-

sensitive areas during the initial departure and final approach phases of flight. Designation of preferential runways may be governed by time restrictions, weather, runway conditions, airport layout, aircraft routings or capacity maximization.

procedure turn (PT)

A manoeuvre in which a turn is made away from a designated track followed by a turn in the opposite direction to permit the aircraft to intercept and proceed along the reciprocal of the designated track.

procedure turn inbound

The point of a procedure turn manoeuvre where course reversal has been completed and an aircraft is established inbound on the intermediate approach or final approach course. A report of “procedure turn inbound” is normally used by ATC as a position report for separation purposes.

progressive taxi

Precise taxi instructions given to a pilot unfamiliar with the aerodrome or issued in stages as the aircraft proceeds along the taxi route.

Q-routes

Q-routes are high-level fixed RNAV routes depicted on En Route High Altitude charts using black dashed lines and require an RNAV system with performance capabilities currently only met by GNSS or distance measuring equipment/inertial reference unit (DME/DME/IRU) systems. DME/DME/IRU navigation may be limited in some parts of Canada owing to navigational facility coverage. In such cases, the routes will be annotated as “GNSS only” on the chart.

radar identification

The process of ascertaining that a particular target is the radar echo from a specific aircraft.

“Radar identified”

An expression used by ATC to inform the pilot of an aircraft when radar identification is established.

RADAR REQUIRED

Annotation used on an instrument approach chart to indicate that the procedure turn may have been eliminated and that the initial approach portion of the procedure is being provided by ATC vectors. Without ATC vectoring, the instrument approach procedure (IAP) may not have a published initial approach.

radial (R)

A magnetic bearing from a VHF omnidirectional range (VOR), tactical air navigation aid (TACAN), or VORTAC facility, except for facilities in the Northern Domestic Airspace (NDA), which may be oriented on true or grid north.

reduced vertical separation minimum (RVSM)

The application of 1 000-ft vertical separation at and above FL 290 between aircraft approved to operate in reduced vertical separation minimum airspace.

reduced-visibility operations plan (RVOP)

A plan that calls for specific procedures established by the aerodrome operator and/or ATC when aerodrome visibility is below RVR 2 600 (½ SM) down to and including RVR 1 200 (¼ SM).

remotely piloted aircraft (RPA)

A navigable aircraft, other than a balloon, rocket or kite, that is operated by a pilot who is not on board.

remotely piloted aircraft system (RPAS)

A set of configurable elements consisting of a remotely piloted aircraft, its control station, the command and control links and any other system elements required during flight operation.

required navigation performance (RNP)

A statement of the navigation performance accuracy necessary for operation within a defined airspace.

required visual reference

In respect of an aircraft on an approach to a runway, the section of the approach area of the runway or the visual aids that, when viewed by the pilot of the aircraft, enable the pilot to make an assessment of the aircraft position and the rate of change of position relative to the nominal flight path in order to continue the approach and complete the landing.

resolution advisory (RA)

An advisory issued by airborne collision avoidance system (ACAS)/traffic alert and collision avoidance system (TCAS) to alert pilots to potential conflicting air traffic and provide them with a suggested flight-path change in the vertical plane to reduce the possibility of collision.

restricted airspace

An airspace of defined dimensions above land areas or territorial waters within which the flight of aircraft is restricted in accordance with certain specified conditions.

- also called: **restricted area**

“Resume normal speed”

An expression used by ATC to advise a pilot that previously issued speed restrictions are cancelled, but that published speed restrictions are still applicable, unless otherwise stated by ATC.

runway edge lights (REDL)

Aeronautical ground lights located along the edges of the runway.

runway end safety area (RESA)

An area that extends from the end of the runway strip, primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.

runway heading

The magnetic or true direction that corresponds with the runway centreline rather than the painted runway numbers.

runway incursion

Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft.

runway in use

Any runway currently being used for takeoff or landing. When multiple runways are used, they are all considered runways in use.

runway lights

Aeronautical ground lights located on a runway, indicating its direction or boundaries, and including but not limited to runway centreline lights, runway edge lights, runway end lights, threshold lights and touchdown zone lights.

runway strip

A defined area, which includes the runway and stopway where provided, intended to protect aircraft flying over it during take-off or landing operations.

RVSM Aircraft

An aircraft that meets reduced vertical separation minimum (RVSM) requirements for certification and for operator approval.

safe altitude 100 NM

The lowest altitude that may be used under instrument meteorological conditions (IMC) that will provide a minimum vertical clearance of 1000 ft or, in a designated mountainous region, 1500 or 2000 ft, as appropriate, rounded up to the next 100-ft increment, under conditions of standard temperature and pressure, above all obstacles located in an area contained within a radius of 100 NM of the aerodrome geometric centre.

secondary surveillance radar (SSR)

A radar system that requires complementary aircraft equipment (transponder). The transponder generates a coded reply signal in response to transmissions from the ground station (interrogator). Since this system relies on transponder-generated signals rather than signals reflected from the aircraft, as in primary surveillance radar, it offers significant operational advantages such as increased range and positive identification.

shuttle procedure

A manoeuvre involving a descent or climb in a pattern resembling a holding pattern.

Southern Control Area (SCA) (see RAC Figure 2.3)

A controlled airspace within the Southern Domestic Airspace (SDA) at 18 000 ft ASL and above.

Southern Domestic Airspace (SDA) (see RAC Figure 2.1)

As geographically delineated in the *Designated Airspace Handbook* (DAH), all airspace within the Canadian Domestic Airspace (CDA) commencing at the Canada-United States border and extending northward to the southern limit of the Northern Domestic Airspace (NDA).

“Squawk ident”

A request for a pilot to activate the aircraft transponder identification feature.

standard instrument departure (SID)

A preplanned IFR departure procedure requiring ATC clearance and published for pilot/controller use to provide obstacle clearance and a transition from an aerodrome to the appropriate en route structure.

NOTE:

IDs are published in the *Canada Air Pilot* (CAP) for pilot and controller use. SIDs may be either:

- a) pilot navigation SIDs: SIDs where the pilot is required to use the applicable SID chart as reference for navigation to the en route phase; or
- b) vector SIDs: SIDs established where ATC will provide radar navigational guidance to a filed or assigned route, or to a fix depicted on the applicable SID chart. Pilots are expected to use the SID chart as a reference for navigation until the vector is commenced.

standard terminal arrival (STAR)

An IFR ATC arrival procedure published in the *Canada Air Pilot* (CAP) for pilot and controller use.

stepdown fix

A fix permitting additional descent within a segment of an instrument approach procedure (IAP) by identifying the point at which a controlling obstacle has been safely overflown.

stop-and-go

A procedure in which an aircraft lands, makes a complete stop on the runway, and then commences a takeoff from that point.

straight-in approach

- a) A VFR approach in which the aircraft enters the aerodrome traffic circuit on the final leg without having executed any other part of the circuit.
- b) An IFR approach in which the aircraft begins the final approach without first having executed a procedure turn (PT).

terminal arrival area (TAA)

An area, bounded by tracks and distances to identified waypoints, depicted on select GNSS approach charts indicating altitudes that provide a minimum clearance of 1 000 ft above all obstacles.

terminal control area (TCA)

A controlled airspace of defined dimensions that is normally established in the vicinity of one or more major aerodromes and within which ATC service is provided based on the airspace classification.

threshold

The beginning of the portion of the runway usable for landing.

threshold crossing height (TCH)

The height of the glide path (GP) above the runway threshold.

total system error (TSE)

The difference between true position and desired position. This error is equal to the sum of the vectors of the PDE, FTE, and NSE.

touch-and-go

A procedure in which an aircraft lands and then takes off without stopping.

touchdown zone (TDZ)

The first 3 000 ft of the runway or the first third of the runway, whichever is less, measured from the threshold in the direction of landing.

touchdown zone elevation (TDZE)

The highest centreline elevation in the touchdown zone.

track

The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from true, magnetic or grid north.

traffic advisory (TA)

An advisory issued by airborne collision avoidance system (ACAS)/traffic alert and collision avoidance system (TCAS) to alert pilots to other air traffic that may be in such proximity to the position or intended route of flight of their aircraft as to warrant their attention.

transition

- a) The general term that describes the change from one phase of flight or flight conditions to another, e.g. transition from en route flight to the approach or transition from instrument flight to visual flight.
- b) A published procedure used to connect the basic standard instrument departure (SID) to one or more en route airways or to connect one or more en route airways to the basic standard terminal arrival (STAR). More than one transition may be published in the associated SID or STAR.

- also called: **feeder route**

T-routes

T-routes are low-level controlled fixed RNAV routes depicted on En Route Low Altitude charts using black dashed lines and require GNSS RNAV systems for use. The airspace associated with T-routes extends upward from 2 200 ft AGL, 10 NM either side of the centreline, and does not splay. The MOCA provides obstacle protection for only 6 NM either side of the track centreline and does not splay.

unmanned air vehicle (UAV)

A power-driven aircraft, other than a model aircraft, that is designed to fly without a human operator on board.

vector

A heading given by a controller to a pilot on the basis of radar-derived information to provide navigational guidance.

- also called: **radar vectoring**

visual approach

An approach wherein an aircraft on an IFR flight plan (FP), operating in visual meteorological conditions (VMC) under the control of ATC and having ATC authorization, may proceed to the airport of destination.

visual meteorological conditions (VMC)

Meteorological conditions, expressed in terms of visibility and distance from cloud, equal to or greater than the minima specified in CAR 602.

visual separation

A means used by controllers to separate aircraft operating in visual meteorological conditions (VMC).

- a) VFR—The controller, having determined that a potential conflict exists, issues clearances, instructions and/or information as necessary to aid aircraft in establishing visual contact with each other or to assist aircraft in avoiding other aircraft.
- b) IFR or CVFR—Following a pilot's report that the traffic is in sight, the controller issues the clearance and instructs the pilot to provide his or her own separation by manoeuvring the aircraft as necessary to avoid or follow the traffic.

waypoint (WP)

A specified geographical location, defined by longitude and latitude, that is used in the definition of routes and terminal segments and for progress-reporting purposes.

“When ready...”

Authorization for an aircraft to comply with a clearance or instruction at some point in the future when convenient.

wind shear (WS)

A change in wind speed and/or wind direction in a short distance. It can exist in a horizontal or vertical direction and occasionally in both.

5.2 ABBREVIATIONS AND ACRONYMS

AAE	above aerodrome elevation	ARFF	Aircraft Rescue and Fire Fighting
AAIR	Annual Airworthiness Information Report	ARP	aerodrome reference point
AAS	aerodrome advisory service	ASDA	accelerate-stop distance available
ABAS	aircraft-based augmentation system	ASDE	airport surface detection equipment
AC	Advisory Circular	ASL	above sea level
ACA	Arctic Control Area	ATA	actual time of arrival
ACARS	aircraft communications addressing and reporting system	ATC	air traffic control
ACAS	airborne collision avoidance system	ATF	aerodrome traffic frequency
ACC	area control centre	ATFM	air traffic flow management
A-CDM	Airport Collaborative Decision Making	ATIS	automatic terminal information service
ACSC	aircraft critical surface contamination	ATM	air traffic management
AD	Airworthiness Directive	ATN	aeronautical telecommunications network
ADB	aviation document booklet	ATPL	airline transport pilot licence
ADCUS	“Advise customs”	ATS	air traffic service
ADF	automatic direction finder	AU	approach UNICOM
ADIZ	air defence identification zone	AVASI	abbreviated visual approach slope indicator
ADS	automatic dependence surveillance	AVGAS	aviation gasoline
ADS-B	automatic dependent surveillance - broadcast	AVOPS	Aviation Operations Centre
ADS-C	automatic dependent surveillance - contract	AWOS	automated weather observation system
ADS WPR	automatic dependent surveillance waypoint position report(ing)	AWWS	Aviation Weather Web Site
AFCGS	automatic flight control guidance system	baro-VNAV	barometric vertical navigation
AFCS	automatic flight control system	BCST	broadcast
AFM	aircraft flight manual	BOTA	Brest oceanic transition area
AFN	air traffic services facilities notification	BPL	balloon pilot licence
AFS	aeronautical fixed service	BVLOS	beyond visual line-of-sight
AFTN	aeronautical fixed telecommunications network	C	Celsius
AGL	above ground level	CADORS	Civil Aviation Daily Occurrence Reporting System
AGN	aircraft group number	CAE	control area extension
AIC	aeronautical information circular	CAME	Civil Aviation Medical Examiner
AIM	Aeronautical Information Management (NAV CANADA)	CAP	Canada Air Pilot
AIP	Aeronautical Information Publication	CARS	Canadian Aviation Regulations
AIRAC	Aeronautical Information Regulation and Control	CARAC	Canadian Aviation Regulation Advisory Council
AIREP	air report	CARC	Civil Aviation Regulatory Committee
AIS	aeronautical information service	CARS	community aerodrome radio station
ALR	aircraft load rating	CASARA	Civil Air Search and Rescue Association
ALSF-2	approach lighting with sequenced flashers—CAT II	CAT	clear air turbulence
ALT	altitude	CAT I, II, III	Category I, II, III
AM	amplitude modulation	CAVOK	ceiling and visibility OK
AMA	area minimum altitude	CDA	Canadian Domestic Airspace
AME	aircraft maintenance engineer	CDA	departure clearance readback (data link)
AMIS	aircraft movement information service	CDFA	constant descent final approach
AMSL	above mean sea level	CDI	course deviation indicator
ANS	air navigation system	CFB	Canadian Forces base
ANSP	air navigation service provider	CFS	Canada Flight Supplement
AOC	air operator certificate	CFIT	controlled flight into terrain
AOC	Aviation Operations Centre	CG	centre of gravity
AOE	airport of entry	CLD	departure clearance message (data link)
AOM	airport operations manual	CLDN	Canadian Lightning Detection Network
APAPI	abbreviated precision approach path indicator	CMA	Central Monitoring Agency
APREQ	approval request	CMAC	Canadian meteorological aviation centre
APRT	airport	CMC	Canadian Meteorological Centre
APV	approach procedure with vertical guidance	CMNPS	Canadian minimum navigation performance specifications
ARCAL	aircraft radio control of aerodrome lighting	CMNPSA	Canadian minimum navigation performance specifications airspace
		CMU	communications management unit (data link)
		CNS	communications, navigation, surveillance

CNOP.....	Canadian NOTAM Operating Procedures	FE	flight engineer
CPDLC	controller-pilot data link communications	FIC	flight information centre
C of A	certificate of airworthiness	FIR	flight information region
C of R.....	certificate of registration	FISE.....	flight information service en route
CPL	commercial pilot licence	FL	flight level
C.R.C.	Consolidated Regulations of Canada	FLAS	flight level allocation scheme
CRFI	Canadian Runway Friction Index	FM	frequency modulation
CTA	control area	FMS	flight management system
CTAISB	Canadian Transportation Accident Investigation and Safety Board	FP	flight plan
CVFR.....	controlled VFR	fpm	flash per minute
CWAS	Canada Water Aerodrome Supplement	FPUI	flight plan unique identifier
CZ	control zone	FPV	first-person view
DA	decision altitude	FRT	fixed radius transition
DADS	digital altimeter display system	FSM	flight system management (data link)
DAH.....	Designated Airspace Handbook (TP 1820E)	FSS	flight service station
D-ATIS	data link ATIS	FSTD	flight simulation training device
DCL	departure clearance (data link)	FTE	flight technical error
DCPC.....	direct controller-pilot communications	GBAS.....	ground-based augmentation system
DF	direction finder	GEO	geostationary earth orbit (or geosynchronous equatorial orbit)
DH	decision height	GEO	geosynchronous earth orbit
DME	distance measuring equipment	GES	ground earth station
DND	Department of National Defence	GFA	graphic area forecast
DR	dead reckoning navigation	GHz	gigahertz
DRCO	dial-up remote communications outlet	GLONASS.....	global orbiting navigation satellite system
DT	daylight saving time	GMU.....	GPS monitoring unit
DTW.....	downwind termination waypoint	GNSS.....	global navigation satellite system
DVFR.....	defence visual flight rules	GOTA	Gander oceanic transition area
D-VOLMET.....	data link VOLMET	GP	glide path
E	east	GPL	glider pilot licence
EAD	European AIS Database	GPS	global positioning system
EASA.....	European Aviation Safety Agency	GPWS	ground proximity warning system
EAT	expected approach time	GS	glide slope
ECAC.....	European Civil Aviation Conference	GYP	gyroplane pilot permit
ECCC.....	Environment and Climate Change Canada	HAA	height above aerodrome
EET	estimated elapsed time	HAT	height above touchdown
EFC	expected further clearance time	HDG	heading
ELT	emergency locator transmitter	HF	high frequency
EMAS.....	engineered material arresting system	HFDL.....	HF data link
EMI	electromagnetic interference	Hg	mercury
ERS	Emergency Response Service	HAL	high intensity approach lighting
ESCAT Plan.....	Emergency Security Control of Air Traffic Plan	HIRO	high-intensity runway operations
EST	Eastern Standard Time	HLA.....	high-level airspace
EST (NOTAM).....	estimated time (NOTAM)	HMU.....	height monitoring unit
ETA	estimated time of arrival	hPa	hectopascal
ETD	estimated time of departure	HPL	horizontal protection limit
ETE	estimated time en route	hr	hour
EWH.....	eye-to-wheel height	HSI	horizontal situation indicator
FAA	Federal Aviation Administration (USA)	Hz	hertz
FACF.....	final approach course fix	IAF	initial approach fix
FAF	final approach fix	IAP	instrument approach procedure
FANS	future air navigation systems	IAS	indicated airspeed
FARs.....	Federal Aviation Regulations (USA)	IAWP.....	initial approach waypoint
FATO.....	final approach and take-off area	ICAO.....	International Civil Aviation Organization
FAWP.....	final approach waypoint	IF	intermediate fix
FD	upper level wind and temperature forecast	IFF	identification, friend or foe
FDE	fault detection and exclusion	IFR	instrument flight rules
		IFSS.....	international flight service station

IFT	instrument flight test	METAR	aerodrome routine meteorological report
ILS	instrument landing system	MF	mandatory frequency
IMC	instrument meteorological conditions	MF	medium frequency
INF	inland navigation fix	MFAU	Military Flight Advisory Unit
INS	inertial navigation system	MHA	minimum holding altitude
INTXN	intersection	MHz	megahertz
IRS	inertial reference system	MLAT	multilateration
IRU	inertial reference unit	MLS	microwave landing system
ISA	International Standard Atmosphere	MM	middle marker
IWP	intermediate approach waypoint	MNPS	minimum navigation performance specifications
J or JET	high-level airway	MNPSA	minimum navigation performance specifications airspace
JRCC	joint rescue co-ordination centre	MOA	military operations area
kg	kilogram	MOC	minimum obstacle clearance
kHz	kilohertz	MOCA	minimum obstacle clearance altitude
KIAS	knots indicated airspeed	MPa	megapascal
kN	kilonewton	mph	miles per hour
kt	knot	MRA	minimum reception altitude
LAAS	local-area augmentation system	MRB	magnetic reference bearing
LAHSO	Land and Hold Short Operations	MSA	minimum sector altitude
lb	pound	MSL	Mean Sea Level
LDA	landing distance available	MTCA	military terminal control area
LED	light-emitting diode	MTOW	maximum take-off weight
LEO	low earth orbit	MTSAT	multifunctional transport satellite
LF	low frequency	MU	management unit (data link)
LIAL	low intensity approach lighting	MVA	minimum vectoring altitude
LIDAR	light detection and ranging	MVFR	marginal visual flight rules
LLA	low-level airspace	MWO	meteorological watch office
LOC	localizer	N	north
LNAV	lateral navigation	NAARMO	North American Approvals Registry and Monitoring Organization
LP	localizer performance without vertical guidance	NACp	navigation accuracy category—position
LPV	localizer performance with vertical guidance	NADP	noise abatement departure procedure
LRNS	long range navigation system	NAR	North American route
LVOP	low visibility operations plan	NASA	National Aeronautics and Space Administration (USA)
LWIS	limited weather information system	NAT	North Atlantic
MA	missed approach	NAT HLA	North Atlantic high-level airspace
MALS	medium intensity approach lighting system	NATO	North Atlantic Treaty Organization
MALSF	medium intensity approach lighting system with sequenced flashing lights	NAVAID	navigation aid
MALSR	medium intensity approach lighting system with runway alignment indicator lights	NCA	Northern Control Area
MANAB	<i>Manual of Word Abbreviations</i>	NCATS	National Civil Air Transportation System
MANAIR	<i>Manual of Standards and Procedures for Aviation Weather Forecasts</i>	NDA	Northern Domestic Airspace
MANOBS	<i>Manual of Surface Weather Observations</i>	NDB	non-directional beacon
MANOT	missing aircraft notice	NIC	navigation integrity category
MAP	missed approach point	NM	nautical mile
MASPS	minimum aircraft system performance specification	NOHD	Nominal Ocular Hazard Distance
MAWP	missed approach waypoint	NO PT	no procedure turn
mb	millibar	NORDO	no radio
MCDU	multipurpose control and display unit	NPA	non-precision approach
MCTOW	maximum certificated takeoff weight	NRP	North American Route Program
MDA	minimum descent altitude	NSE	navigation system error
MEA	minimum en route altitude	NUCp	navigation uncertainty category—position
MEDEVAC	medical evacuation flight	NVIS	night vision imaging system
MEHT	minimum eye height over threshold	NWP	numerical weather prediction
MEL	minimum equipment list	OAC	oceanic area control centre
MEO	medium earth orbit	OAT	outside air temperature
		OBST	obstacle

O/C	observer-communicator	RMI	radio magnetic indicator
OCA	oceanic control area	RNAV	area navigation
OCL	obstacle clearance limit	RNP	required navigation performance
OCL	oceanic clearance (data link)	RNP APCH	required navigation performance approach
OCS	obstacle clearance surface	RNP AR APCH	required navigation performance authorization required approach
ODALS	omnidirectional approach lighting system	RNPC	required navigation performance capability
ODL	opposite direction level	RONLY	receiver only
ODP	obstacle departure procedure	RPA	remotely piloted aircraft
OEP	oceanic entry/exit point	RPAS	remotely piloted aircraft system
OFZ	obstacle free zone	RPP	recreational pilot permit
OIDS	operational information display system	RRTU	radio re-transmit unit
OKTA	one-eighth	RSC	runway surface condition
OLS	obstacle limitation surface	RTF	radiotelephony frequency
OPS	obstacle protection surface	RTIL	runway threshold identification lights
OTS	organized track system	RVOP	reduced visibility operations plan
OTT	over-the-top	RVR	runway visual range
PAC	Pacific	RVSM	reduced vertical separation minimum
PAL	peripheral station	RWS	reactive wind shear system
PAPI	precision approach path indicator	S	south
PAR	precision approach radar	SA	selective availability
PAS	private advisory station	SAR	search and rescue
PBN	performance-based navigation	SATCOM	satellite communications
PCN	pavement classification number (ICAO)	SATVOICE	satellite voice communications
PDC	pre-departure clearance (data link)	SBAS	satellite-based augmentation system
PDE	path definition error	SCA	Southern Control Area
PIC	pilot-in-command	SCDA	stabilized constant descent angle
PIREP	pilot weather report	SDA	Southern Domestic Airspace
PLR	pavement load rating	SELCAL	selective calling system
PN	prior notice required	SFOC	special flight operations certificate
PPC	pilot proficiency check	SID	standard instrument departure
PPL	private pilot licence	SIF	selective identification feature
PPR	prior permission required	SIGMET	significant meteorological information
PPS	present position symbol	SIL	source integrity level
PRM	preferred routes message	SLOP	strategic lateral offset procedure
PRN	pseudorandom noise	SM	statute mile
PSI	pounds per square inch	SNR	signal-to-noise ratio
PSR	primary surveillance radar	SOPs	standard operating procedures
PSTN	public switched telephone network	SOTA	Shannon oceanic transition area
PT	procedure turn	SPECI	aerodrome special meteorological report
PWS	predictive wind shear system	SPEC VIS	specified takeoff minimum visibility
R	radial	SPI	special position indicator
R	radius	SPP	student pilot permit
RA	resolution advisory	SSALR	simplified short approach lighting system with runway alignment indicator lights
RAAS	remote aerodrome advisory service	SSALS	simplified short approach lighting system
RAIM	receiver autonomous integrity monitoring	SSB	single sideband
RAMO	regional aviation medical officer	SSR	secondary surveillance radar
RASS	remote altimeter setting source	STAR	standard terminal arrival
Rc	radius of containment	STOL aircraft	short takeoff and landing aircraft
RCAP	<i>Restricted Canada Air Pilot</i>	SVFR	special VFR flight
RCD	departure clearance request (data link)	SVM	service volume model
RCMP	Royal Canadian Mounted Police	SVN	satellite vehicle number
RCO	remote communications outlet	T	true
REDL	runway edge lights	TA	traffic advisory
RENL	runway end lights	TAA	terminal arrival area
RESA	runway end safety area	TAC	terminal area chart
RETIL	rapid-exit taxiway indicator lights	TACAN	tactical air navigation aid
RF	radius to fix		
RLOS	radio line-of-sight		

TAF	aerodrome forecast	VDL	VHF digital link
TAS	true airspeed	VDR	VHF data radio
TATC	Transportation Appeal Tribunal of Canada	VFR	visual flight rules
TAWS	terrain awareness and warning system	VGSS	voice generator sub-system
TC	Transport Canada	VHF	very high frequency
TC AIM	<i>Transport Canada Aeronautical Information Manual</i>	VLF	very low frequency
TCCA	Transport Canada Civil Aviation	VLOS	visual line-of-sight
TCA	terminal control area	VMC	visual meteorological conditions
TCAS I/II	traffic alert and collision avoidance system	VNAP	vertical noise abatement procedure
TCH	threshold crossing height	VNAV	vertical navigation
TCU	terminal control unit	VNC	VFR navigation chart
TDOA	time difference of arrival	VOLMET	in-flight meteorological information
TDZ	touchdown zone	VOR	VHF omnidirectional range
TDZE	touchdown zone elevation	VORTAC	combination of VOR and TACAN
TDZL	touchdown zone lighting	VPA	vertical path angle
TLOF	touchdown and lift-off area	VTA	VFR terminal area chart
TMI	track message identification	VTOL aircraft	vertical takeoff and landing aircraft
TOD	top of descent	W	west
TODA	take-off distance available	WAAS	wide area augmentation system
TORA	take-off run available	WAFAC	world area forecast centre
TP	Transport Canada publication	WAFS	world area forecast system
TRA	tower radar area	WMO	World Meteorological Organization
TRB	true reference bearings	WP	waypoint
TRP	tower radar plan	WPR	waypoint position report(ing)
TSB	Transportation Safety Board of Canada	WS	wind shear
TSE	total system error	zulu (Z)	Coordinated Universal Time
TSO	Technical Standard Order		
TSR	terminal surveillance radar		
TWR	control tower		
UAS	unmanned aircraft system		
UAV	unmanned air vehicle		
ULP	ultralight pilot permit		
UHF	ultrahigh frequency		
UNICOM	universal communications		
USB	upper sideband		
UTC	Coordinated Universal Time		
VAA	volcanic ash advisory		
VAAC	volcanic ash advisory centre		
VAGS	Visual Alignment Guidance System		
VAS	vehicle advisory service		
VASI	visual approach slope indicator		
VASIS	visual approach slope indicator system (generic term)		
VCOA	visual climb over the airport		
VCS	vehicle control service		
VDF	VHF direction finder		
VDI	vertical deviation indicator		

NOTES:

1. The Supplements contain additional abbreviations applicable to aeronautical charts and publications.
2. Abbreviations typical of meteorology are contained in MET 14.0.

5.3 LEGISLATION INDEX

is not required for aircraft operations.

This index provides a cross-reference between the CARs and corresponding TC AIM pages where relevant information can be found. Some administrative or enabling legislation has been omitted where it has been determined that knowledge of the rule

The CARs section numbers contained throughout the text are those of the *Consolidated Regulations of Canada* (CRC), Chapter 2, as contained in the CARs.

Table 5.1—Relevant Cross-References Between CARs and TC AIM

CARs Subpart No.	CAR Name	TC AIM Paragraph No.
Part I	General Provisions	
103	Administration and Compliance	LRA 6.4, 6.5
Part II	Aircraft Identification and Registration and Operation of a Leased Aircraft by a Non-registered Owner	LRA 4.1, 4.6, 4.7
201	Identification of Aircraft and Other Aeronautical Products	LRA 4.2
202	Aircraft Marking and Registration	LRA 4.3, 4.7, 5.7.2
Part III	Aerodromes, Airports and Heliports	
301	Aerodromes	AGA 2.1, 7.3
302	Airports	AGA 2.3.6
Part IV	Personnel Licensing and Training	
403	Aircraft Maintenance Engineer Licences and Ratings	LRA 5.4.2
406	Flight Training Units	LRA 5.6.1
421	Flight Crew Permits, Licences and Ratings	LRA 1.1, 1.5, 1.6, 1.7, 1.12, 1.14.4
424	Medical Requirements	LRA 1.1, 1.9, 2.1.1, 2.2
Part V	Airworthiness	
501	Annual Airworthiness Information Report	LRA 5.5
507	Flight Authority and Certificate of Noise Compliance	LRA 5.1, 5.3.1, 5.3.3, 5.3.4, 5.3.5
521	Approval of the Type Design or a Change to the Type Design of an Aeronautical Product	LRA 5.2.2
521 Division IX	Service Difficulty Reporting	LRA 5.6.5
571	Aircraft Maintenance Requirements	LRA 5.4.1, 5.6.3, 5.6.4
Part VI	General Operating and Flight Rules	RAC 3.1
601	Airspace	RAC 2.8, 2.8.6, 2.9.2

CARs Subpart No.	CAR Name	TC AIM Paragraph No.
602	Operating and Flight Rules	COM 1.3, 9.7, MET 1.1.9, RAC 1.7, 1.9, 1.10, 2.3.1, 2.5.2, 2.7.3, 2.7.4, 2.9.3, 2.10, 2.11, 2.12, 2.13, 3.1, 3.6.1, 3.6.2, 3.7.1, 3.7.2, 3.9, 3.12, 3.12.1, 3.13, 3.14, 4.1, 4.1.2, 4.2.5, 4.3, 4.4.8, 4.5.2, 4.5.4, 4.5.7, 5.4, 5.5, 6.1, 8.1, 8.3, 8.4, 8.5, 9.6.1, 9.7.3, 9.11, 9.12, 9.18.1, 9.19.1, 9.19.2.1, 9.19.2.2, 9.19.2.3, 9.19.2.5, 9.19.2.6, 9.19.3, 10.7, 10.9, RAC Annex 2.0, NAT 1.1.1, 1.2, SAR 3.9, 4.7, 4.8.2, AIR 2.11.3, 2.17.3, 4.4.2, 4.8, 4.9, 4.13, 4.15, 4.15.3
603	Special Flight Operations	RAC 1.10, 2.5.2, AIR 4.7.1, 4.8
604	Private Operator Passenger Transportation	COM 5.4, 9.2, RAC 9.18, LRA 5.6.1
605	Aircraft Requirements	COM 8.2, RAC 2.7.4, RAC Annex 2.0, SAR 3.1, 3.3, 3.9, LRA 5.3.1, 5.4.1, 5.6.1, 5.6.2, 5.6.4, 5.7.1, 5.7.3
625	Aircraft Equipment and Maintenance Standard	LRA 5.4.1, 5.4.2, 5.6.2, 5.7.1
Part VII	Commercial Air Services	RAC 9.18, 9.19
703	Air Taxi Operations	COM 9.2, RAC 3.5.1, 3.5.7, AIR 4.4.2
704	Commuter Operations	COM 9.2, AIR 4.4.2
705	Airline Operations	COM 9.2, AIR 4.4.2
706	Aircraft Maintenance Requirements for Air Operators	LRA 5.6.1
Part VIII	Air Navigation Services	GEN 1.3.1, RAC 2.1, NAT 1.1.2

5.4 CANADIAN AVIATION REGULATION ADVISORY COUNCIL (CARAC)

CARAC's main governing principle is to maintain or improve upon Canada's high level of aviation safety.

5.4.1 General

This part outlines the TCCA regulatory consultation process. The TCCA advisory council is known as CARAC. The Director General, Civil Aviation is the sponsor of CARAC. The Council was established on July 1, 1993.

New proposals, including public interest issues, are judged on the safety and efficiency that would result from their implementation. Proposals are also assessed at an early stage to determine where the development and approval processes can be streamlined and where resources should be focused.

5.4.2 Governing Principles

The *Cabinet Directive on Regulatory Management* published by the Treasury Board of Canada requires TC (and other federal departments) to engage at all stages of the rulemaking process. TCCA engages stakeholders on regulatory initiatives through CARAC, and as such, CARAC is an important part of TC's rulemaking consultation process.

5.4.3 Objective

CARAC's prime objective of assessing and recommending potential regulatory changes through cooperative rulemaking activities is accomplished through:

- a) communicating and seeking industry input on TCCA's rulemaking and strategic priorities;

- b) identifying critical or contentious issues that indicate a need to examine and revise, where necessary, existing regulations, policies, standards or procedures to maintain or improve aviation safety in Canada;
- c) soliciting and identifying aviation industry needs for full consideration through direct involvement and consultation;
- d) developing and maintaining administrative tools in order to engage the aviation industry at various stages of the rulemaking process;
- e) eliminating, wherever possible, constraints to system safety and allowing for efficiency through regulations and standards to reduce complexity and increase the productivity of the overall aviation safety system;
- f) minimizing the regulatory burden where safety is not compromised;
- g) maximizing, to the extent practicable, the compatibility of the Canadian regulatory system with that of other regulatory authorities (e.g. ICAO standards and recommended practices, FAA, EASA) where safety or efficiency benefits can be derived; and
- h) transmitting comprehensive and accurate information to the aviation industry in a timely manner.

5.4.4 Organizational Structure

CARAC is a joint undertaking of government and the aviation community for formal consultations with aviation stakeholders on all aspects of rulemaking activities. The participation of a large number of organizations and individuals is sought to represent the overall viewpoint of the aviation community. Participants include management and labour organizations that represent air operators, manufacturers, and professional associations.

5.4.4.1 Focus Group

A focus group reviews technical or safety policy issues; provides technical expertise; conducts risk assessments; and develops possible solutions and recommendations within the scope of a defined terms of reference. Focus group members are comprised of selected subject matter experts from the industry and TC. A focus group is established based on the results of a preliminary issue and consultation assessment.

5.4.4.2 Special Technical Committee

A special technical committee provides advice and recommendations to TCCA's management team on regulatory issues and formal regulatory proposals. A special technical committee discusses policy objectives and supportive documentation. Membership is comprised of representatives from the aviation community, other interested parties and TC. A special technical committee can be established based on the

results of a preliminary issue and consultation assessment.

5.4.4.3 Canadian Aviation Regulation Advisory Council (CARAC) Plenary

The CARAC plenary provides an open forum for the aviation industry and TC to exchange on the content and execution of TCCA's rulemaking and strategic priorities in light of the operational and emerging technological needs of the aviation industry.

5.4.4.4 Transport Canada Civil Aviation (TCCA) Management Team

The TCCA management team has the responsibility to identify and prioritize regulatory issues and to consider, approve and direct the implementation of recommendations made by CARAC focus groups and special technical committees, as applicable.

The Director, Standards or the Director, Policy and Regulatory Services assesses proposals and supportive documentation before they are submitted to a focus group or special technical committee. The relevant director appoints the focus group leader and chairs the special technical committee meetings. They are responsible for reporting the outcome of a focus group or special technical committee meeting to the TCCA management team. The Director, Policy and Regulatory Services is responsible for managing the CARAC process and for ensuring that the aviation industry representatives are sufficiently diverse in order to gather a range of views and expertise.

5.4.4.5 Secretariat

The Secretariat establishes, implements and maintains all systems required to allow CARAC to properly function. The Secretariat is managed by Policy and Regulatory Services and serves as the focal point for consultations on civil aviation regulatory development issues within TC.

5.4.5 Project Resources

Apart from the full-time Secretariat, resource support is solicited from within TCCA and the aviation community, as required. Costs incurred by stakeholder organizations participating in a CARAC focus group, special technical committee or plenary are expected to be borne by those organizations. The CARAC Secretariat will provide, where available, meeting facilities and administrative support, such as decision records.

5.4.6 Communication

Comprehensive and timely communications are given top priority. The appropriate and timely participation of representatives from the aviation community and from within TC in the CARAC process is key to an effective consultation process with the aviation community.

The CARAC Activity Reporting System, accessible at <http://www.wapps.tc.gc.ca/Saf-Sec-Sur/2/NPA-APM/crs.aspx>, provides

supportive documentation on any given issue that aviation stakeholders were consulted on. These documents include preliminary issue and consultation assessments, notice of proposed amendments, focus group reports, decision records and documents presented at the plenary.

5.4.7 Information

The information presented in this part is in the process of being published in greater detail in a revised *CARAC Management Charter and Procedures*. Those interested in becoming CARAC members or wishing to obtain more information about CARAC may contact the CARAC Secretariat by mail, telephone or e-mail at:

Transport Canada (AARBH)
 CARAC Secretariat
 330 Sparks Street
 Ottawa ON K1A 0N8

Tel.:613-990-1847
 E-mail:carrac@tc.gc.ca

Tel. (toll-free): 1-877-992-6853
 Tel.: 613-992-6853
 Fax (toll-free): 1-866-993-7768
 Fax: 613-993-7768

<http://www.wapps.tc.gc.ca/saf-sec-sur/2/IR-RI/av_i_r.aspx?lang=eng>.

6.0 AVIATION OPERATIONS CENTRE (AOC)

6.1 AVIATION OPERATIONS CENTRE (AOC)— CIVIL AVIATION ACCIDENT, OCCURRENCE AND INCIDENT REPORTING

The Aviation Operations Centre (AOC) monitors the national civil air transportation system (NCATS) 24 hours a day, seven days a week and responds to NCATS emergencies that require the attention or coordination of concerned functional branches, including regional offices and other departments or agencies. The AOC is the initial point of contact for all aviation-related occurrences. It receives reports on accidents, occurrences and any incidents that occur within the NCATS from various sources, including NAV CANADA, airport authorities, Public Safety Canada, law enforcement agencies, other government departments, foreign governments, and the general public. These reports are continuously monitored and then distributed to the appropriate functional areas of Transport Canada Civil Aviation (TCCA) for review, trend analysis, investigation (if necessary), and final inclusion in the Civil Aviation Daily Occurrence Reporting System (CADORS).

Reports requiring a regional, modal, multi-modal, inter-departmental, or an outside agency’s attention are immediately forwarded to that agency for further action. For more information about the AOC, please see *AIP Canada (ICAO) ENR 1.14* available on the NAV CANADA Web site.

To report an aircraft accident, occurrence or incident, contact the AOC 24 hours a day, seven days a week at:

7.0 CIVIL AVIATION ISSUES REPORTING SYSTEM (CAIRS)

As of March 31, 2016, the Civil Aviation Issues Reporting System (CAIRS) is no longer in operation.

The aviation community and the public can report issues, concerns and hazards to the Civil Aviation Communications Centre.

In an effort to maintain confidentiality, steps have been taken by the communications centre to handle confidential enquiries; however, incoming submissions must be **clearly** marked, in title and body, as confidential.

Please send all enquiries to the Civil Aviation Communications Centre:

Civil Aviation Communications Centre (AARC)
 Transport Canada
 Place de Ville, Tower C, 5th floor
 330 Sparks Street
 Ottawa ON K1A 0N8

Tel.: 1-800-305-2059
 Fax: 613-957-4208
 E-mail: services@tc.gc.ca