Transport Canada
Aeronautical Information Manual
(TC AIM)

GEN—GENERAL

MARCH 26, 2020
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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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.


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
Fax: 613-991-4071
E-mail: publications@tc.gc.ca

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### 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: CYHQYNXY

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### 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).

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### 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)

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### 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**

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

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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

![Chart showing the beginning of morning civil twilight on standard meridians of time zone.](chart.png)
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 “‡”, in the Aerodrome/Facility Directory, under the subheading REF (references).

Table 1.2—Time Zone Local Times

<table>
<thead>
<tr>
<th>Time Zone</th>
<th>To Obtain Local Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newfoundland</td>
<td>UTC minus 3 1/2 hours (2 1/2 DT)</td>
</tr>
<tr>
<td>Atlantic</td>
<td>UTC minus 4 hours (3 DT)</td>
</tr>
<tr>
<td>Eastern</td>
<td>UTC minus 5 hours (4 DT)</td>
</tr>
<tr>
<td>Central</td>
<td>UTC minus 6 hours (5 DT)</td>
</tr>
<tr>
<td>Mountain</td>
<td>UTC minus 7 hours (6 DT)</td>
</tr>
<tr>
<td>Pacific</td>
<td>UTC minus 8 hours (7 DT)</td>
</tr>
</tbody>
</table>
1.6 Nationality and Registration Marks
(See AIP Canada (ICAO) GEN 2.1.5)

1.7 V-Speeds

| V<sub>1</sub> | Critical engine failure recognition speed * |
| V<sub>s</sub> | Takeoff safety speed |
| V<sub>2min</sub> | Minimum takeoff safety speed |
| V<sub>f</sub> | Flap retraction speed |
| V<sub>3</sub> | Design safety speed |
| V<sub>a</sub> | Speed for maximum gust intensity |
| V<sub>b</sub> | Cruise speed |
| V<sub>d</sub> | Diving speed |
| V<sub>df</sub>/M<sub>df</sub> | Demonstrated flight diving speed |
| V<sub>r</sub> | Flap speed |
| V<sub>max</sub> | Maximum flap speed |
| V<sub>c</sub> | Maximum level flight speed at maximum continuous power |

V<sub>1</sub> | Landing gear extended speed |
V<sub>s</sub> | Maximum landing gear operation speed |
V<sub>m</sub> | Minimum control speed with critical engine inoperative |
V<sub>mo</sub>/M<sub>mo</sub> | Maximum operating limit speed |
V<sub>u</sub> | Minimum unstick speed |
V<sub>st</sub> | Maximum structural cruising speed ** |
V<sub>re</sub> | Never exceed speed |
V<sub>r</sub> | Rotation speed |
V<sub>ref</sub> | Landing reference speed |
V<sub>sd</sub> | Stalling speed or minimum steady controllable flight speed |
V<sub>sl</sub> | Stalling speed or minimum steady flight speed obtained in a specific configuration |
V<sub>sa</sub> | Stalling speed or minimum steady flight speed in the landing configuration |
V<sub>x</sub> | Speed for best angle of climb |
V<sub>y</sub> | 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<sub>no</sub> means normal operating limit speed.

1.7.1 Conversion Tables

Table 1.4—Conversion of Millibars to Inches of Mercury

<table>
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NOTE:
1 millibar (mb) = 1 hectopascal (hPa)
### Table 1.5—Celsius and Fahrenheit Degrees Temperature Scales

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### Table 1.6—Conversion Factors

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### 1.7.2 RVR Comparative Scale—Feet to Metres

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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 <MPS1@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.

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;

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.

3.3.4 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

• 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:............................................................819-997-2239
TDD: ......................................................819-953-7287
E-mail:...............................................airops@tsb-bst.gc.ca

REGIONAL OFFICES (AIR)

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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5.1 GLOSSARY OF AERONAUTICAL TERMS

“Ack nowledge”
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.

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 mile 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.

• 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

a) an ATC unit;

b) an FSS or FIC;

c) a community aerodrome radio station (CARS);

d) 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
e) 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.
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: initial approach

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.

classification: instrument approach

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 (CWS) 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.

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 MTCAs 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.
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 takeoff 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 18000 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 flown over.

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 1000 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.

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.

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.

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.
5.2 Abbreviations and Acronyms

AAE .................................................. above aerodrome elevation
AAIR ............................................... Annual Airworthiness Information Report
AAS .................................................. aerodrome advisory service
ABAS .............................................. aircraft-based augmentation system
AC ................................................... Advisory Circular
ACA ................................................ Arctic Control Area
ACARS .......................................... aircraft communications addressing and reporting system
ACAS .............................................. airborne collision avoidance system
ACC ............................................... area control centre
A-CDM ........................................... Airport Collaborative Decision Making
ACSC ............................................... aircraft critical surface contamination
AD .................................................... Airworthiness Directive
ADB .............................................. aviation document booklet
ADCUS .......................................... “Advise customs”
ADF ................................................ automatic direction finder
ADIZ ................................................... air defence identification zone
ADS ................................................ automatic dependent surveillance
ADS-B ............................................. automatic dependent surveillance - broadcast
ADS-C ............................................. automatic dependent surveillance - contract
ADS WPR ....................................... automatic dependent surveillance waypoint position report(ing)
AFCGS ............................................ automatic flight control guidance system
AFCS ................................................. automatic flight control system
AFM ................................................. aircraft flight manual
AFN ................................................ air traffic services facilities notification
AFS ................................................ aeronautical fixed service
AFTN .............................................. aeronautical fixed telecommunications network
AGL .................................................. above ground level
AGN .................................................. aircraft group number
AIC .................................................. aeronautical information circular
AIM ................................................ Aeronautical Information Management (NAV CANADA)
AIP ................................................. Aeronautical Information Publication
AIRAC ........................................... Aeronautical Information Regulation and Control
AIREP ............................................. air report
AIS .................................................. aeronautical information service
ALR ................................................ aircraft load rating
ALSF-2 .......................................... approach lighting with sequenced flashers–CAT II
ALT .................................................... altitude
AM ................................................... amplitude modulation
AMA ................................................ area minimum altitude
AME .............................................. aircraft maintenance engineer
AMIS .............................................. aircraft movement information service
AMSL .............................................. above mean sea level
ANS ............................................... air navigation system
ANSP ............................................. air navigation service provider
AOC ................................................ aircraft operator certificate
AOC ............................................... Aviation Operations Centre
AOE ................................................ airport of entry
AOM ................................................ airport operations manual
APAPI .......................................... abbreviated precision approach path indicator
APREQ .......................................... approval request
APRT .............................................. airport
APV ................................................ approach procedure with vertical guidance
ARCAL ........................................... aircraft radio control of aerodrome lighting
ARFF ............................................. Aircraft Rescue and Fire Fighting
ARP ................................................ aerodrome reference point
ASDA ............................................. accelerate-stop distance available
ASDE ............................................. airport surface detection equipment
ASL .................................................. above sea level
ATA ................................................ actual time of arrival
ATC ................................................... air traffic control
ATF ................................................ aerodrome traffic frequency
ATFM ............................................. air traffic flow management
ATIS ............................................... automatic terminal information service
ATM ................................................ air traffic management
ATN .............................................. aeronautical telecommunications network
ATPL ............................................. airline transport pilot licence
ATS ................................................ air traffic service
AU .................................................. approach UNICOM
AVASI .......................................... abbreviated visual approach slope indicator
AVGAS .......................................... aviation gasoline
AVOPS .......................................... Aviation Operations Centre
AWOS .......................................... automated weather observation system
AWWS .......................................... Aviation Weather Web Site
BARO-NAV ..................................... barometric vertical navigation
BCST ................................................ broadcast
BOTA .............................................. Brest oceanic transition area
BPL .................................................. balloon pilot licence
BVLOS ......................................... beyond visual line-of-sight
C ..................................................... Celsius
CADORS ....................................... Civil Aviation Daily Occurrence Reporting System
CAE .............................................. control area extension
CAME .......................................... Civil Aviation Medical Examiner
CAP ............................................... Canada Air Pilot
CARS ............................................. Canadian Aviation Regulations
CARAC ......................................... Canadian Aviation Regulation Advisory Council
CARC ............................................. Civil Aviation Regulatory Committee
CARS ........................................... community aerodrome radio station
CASARA ...................................... Civil Air Search and Rescue Association
CAT ................................................ clear air turbulence
CAT I, II, III ..................................... Category I, II, III
CAYOK .......................................... ceiling and visibility OK
CDA ............................................... Canadian Domestic Airspace
CDP ................................................ departure clearance (data link)
CDFA ............................................. constant descent final approach
CDI .................................................. course deviation indicator
CFB ................................................ Canadian Forces base
CFS ............................................... Canada Flight Supplement
CFIT ............................................... controlled flight into terrain
CG ................................................... centre of gravity
CLD ................................................ departure clearance message (data link)
CLDN ............................................ Canadian Lightning Detection Network
CMA .............................................. Central Monitoring Agency
CMAC .......................................... Canadian meteorological aviation centre
CMC ............................................. Canadian Meteorological Centre
CMNPS ........................................ Canadian minimum navigation performance specifications
CMNPSA ...................................... Canadian minimum navigation performance specifications airspace
CMU ............................................. communications management unit (data link)
CNS .............................................. communications, navigation, surveillance
CNOP ................ Canadian NOTAM Operating Procedures
CPDLC ................ controller-pilot data link communications
C of A ................ certificate of airworthiness
C of R ................ certificate of registration
CPL ................ commercial pilot licence
C.R.C ................ Consolidated Regulations of Canada
CRFI ................ Canadian Runway Friction Index
CTA ................ control area
CTAISB .... Canadian Transportation Accident Investigation and Safety Board
CVFR ................ controlled VFR
CWAS .............. Canada Water Aerodrome Supplement
CZ ................ control zone
DA ................ decision altitude
DADS ............. digital altimeter display system
DAH .......... Designated Airspace Handbook (TP 1820E)
D-ATIS .......... data link ATIS
DCL ................ departure clearance (data link)
DCPC .......... direct controller-pilot communications
DF ................ direction finder
DH ................ decision height
DME ........ distance measuring equipment
DND .......... Department of National Defence
DR ................ dead reckoning navigation
DRCO ........ dial-up remote communications outlet
DT ................ daylight saving time
DTW ................ downwind termination waypoint
DVFR .......... defence visual flight rules
D-VOLMET ...... data link VOLMET
E .................... east
EAD ................ European AIS Database
EASA .......... European Aviation Safety Agency
EAT ........ expected approach time
ECAC .......... European Civil Aviation Conference
ECCC .......... Environment and Climate Change Canada
EET ........ estimated elapsed time
EFC ........ expected further clearance time
ELT .......... emergency locator transmitter
EMAS ........ engineered material arresting system
EMI .......... electromagnetic interference
ERS .......... Emergency Response Service
ESCAT Plan .... Emergency Security Control of Air Traffic Plan
EST ................ Eastern Standard Time
EST (NOTAM) ..... estimated time (NOTAM)
ETA ........ estimated time of arrival
ETD .......... estimated time of departure
ETE ........ estimated time en route
EWH ........ eye-to-wheel height
FAA ............... Federal Aviation Administration (USA)
FACF ........ final approach course fix
FAF ........ final approach fix
FANS ........ future air navigation systems
FARS ............. Federal Aviation Regulations (USA)
FATO ........ final approach and take-off area
FAWP .......... final approach waypoint
FD ................ upper level wind and temperature forecast
FDE ........ fault detection and exclusion
FE ................ flight engineer
FIC ........ flight information centre
FIR ........ flight information region
FISE .......... flight information service en route
FL ................ flight level
FLAS .......... flight level allocation scheme
FM ................ frequency modulation
FMS ........ flight management system
FP ........ flight plan
fpm ................ flash per minute
FPUI .......... flight plan unique identifier
FPV ........ first-person view
FRT ................ fixed radius transition
FSM ........ flight system management (data link)
FSS .......... flight service station
FSTD .......... flight simulation training device
FTE ........ flight technical error
GBAS .......... ground-based augmentation system
GEO .......... geostationary earth orbit (or geosynchronous equatorial orbit)
GES ........ ground earth station
GFA ........ graphic area forecast
GHz ........ gigahertz
GLONASS ....... global orbiting navigation satellite system
GMU ........ GPS monitoring unit
GNSS .......... global navigation satellite system
GOTA .......... Gander oceanic transition area
GP ........ glide path
GPL .......... glider pilot licence
GPS ........ global positioning system
GPWS .......... ground proximity warning system
GS ........ glide slope
GYP .......... gyroplane pilot permit
HA ........ height above aerodrome
HAT ........ height above touchdown
HDG ........ heading
HF ................ high frequency
HFDL .......... HF data link
Hg ................ mercury
HIAL .......... high intensity approach lighting
HIRO .......... high-intensity runway operations
HLA ........ high-level airspace
HMU ........ height monitoring unit
hPa ........ hectopascal
HPL .......... horizontal protection limit
hr ........ hour
HSI ........ horizontal indicator
Hz ........ hertz
IAF ........ initial approach fix
IAP .......... instrument approach procedure
IAS .......... indicated airspeed
IAWP .......... initial approach waypoint
ICAO .......... International Civil Aviation Organization
IF ........ intermediate fix
IFF .......... identification, friend or foe
IFR .......... instrument flight rules
IFSS .......... international flight service station
O/C ............................................... observer-communicator
OCA ............................................. oceanic control area
OCL ............................................. obstacle clearance limit
OCL ............................................. oceanic clearance (data link)
OCS ............................................. obstacle clearance surface
ODALS ...................................... omnidirectional approach lighting system
ODL ............................................. opposite direction level
ODP ............................................. obstacle departure procedure
OEP ............................................. oceanic entry/exit point
OFZ ............................................. obstacle free zone
OIDS ......................................... operational information display system
OKTA ......................................... one-eighth
OLS ............................................. obstacle limitation surface
OPS ............................................. obstacle protection surface
OTS ............................................. organized track system
OTT ............................................. over-the-top
PAC ............................................. Pacific
PAL ............................................. peripheral station
PAPI .......................................... precision approach path indicator
PAR ............................................. precision approach radar
PAS ............................................. private advisory station
PBN ............................................. performance-based navigation
PCN .......................................... pavement classification number (ICAO)
PDC ........................................... pre-departure clearance (data link)
PDE ............................................. path definition error
PIC ............................................. pilot-in-command
PIREP ....................................... pilot weather report
PLR ........................................... pavement load rating
PN ............................................. prior notice required
PPC ........................................... pilot proficiency check
PPL ........................................... private pilot licence
PPR ........................................... prior permission required
PPS ........................................... present position symbol
PRM ........................................... preferred routes message
PRN ........................................... pseudorandom noise
PSI ............................................ pounds per square inch
PSR ............................................ primary surveillance radar
PSTN ......................................... public switched telephone network
PT ............................................. procedure turn
PWS .......................................... predictive wind shear system
R .................................................. radial
R .................................................. radius
RA ............................................. resolution advisory
RAAS ........................................ remote aerodrome advisory service
RAIM ......................................... receiver autonomous integrity monitoring
RAMO ........................................ regional aviation medical officer
RASS ......................................... remote altimeter setting source
Re ............................................. radius of containment
RCAP ........................................ Restricted Canada Air Pilot
RCD ............................................ departure clearance request (data link)
RCMP ........................................ Royal Canadian Mounted Police
RCO ........................................... remote communications outlet
REDL ........................................ runway edge lights
RENL ........................................ runway end lights
RESA ........................................ runway end safety area
RETIIL ...................................... rapid-exit taxiway indicator lights
RF ............................................... radius to fix
RLOS ........................................ radio line-of-sight
RMI ............................................ radio magnetic indicator
RNAV ........................................ area navigation
RNP ............................................ required navigation performance
RNP APCH .................................. required navigation performance approach
RNP AR APCH ................................ required navigation performance authorization required approach
RPAP .......................................... remotely piloted aircraft
RPAS ........................................ remotely piloted aircraft system
RPP ............................................. recreational pilot permit
RRTU ......................................... radio re-transmit unit
RSC ........................................... runway surface condition
RTF ............................................ radiotelephony frequency
RTIL ........................................ runway threshold identification lights
RVOP ........................................ reduced visibility operations plan
RVR ............................................ runway visual range
RVSM ....................................... reduced vertical separation minimum
RWS .......................................... reactive wind shear system
S ................................................. south
SA ............................................. selective availability
SAR ........................................... search and rescue
SATCOM ................................... satellite communications
SATVOICE ................................... satellite voice communications
SBAS ....................................... satellite-based augmentation system
SCA ........................................... Southern Control Area
SCDA ....................................... stabilized constant descent angle
SDA ........................................... Southern Domestic Airspace
SELCAL ..................................... selective calling system
SFOC ....................................... special flight operations certificate
SID ........................................... standard instrument departure
SIF ............................................ selective identification feature
SIGMET ..................................... significant meteorological information
SIL ........................................... source integrity level
SLOP ......................................... strategic lateral offset procedure
SNR ........................................... signal-to-noise ratio
SOPs ......................................... standard operating procedures
SOTA ......................................... Shannon oceanic transition area
SPEC ....................................... aerodrome special meteorological report
SPEC VIS .................................. specified takeoff minimum visibility
SPI ........................................... special position indicator
SPP ........................................... student pilot permit
SSALR ....................................... simplified short approach lighting system with runway alignment indicator lights
SSALS ....................................... simplified short approach lighting system
SSB ........................................... single sideband
SSR ........................................... secondary surveillance radar
STAIR ....................................... standard terminal arrival
STOL aircraft ......................... short takeoff and landing aircraft
SVFR ........................................ special VFR flight
SVM ........................................... service volume model
SVN ........................................... satellite vehicle number
T ................................................ true
TA ............................................. traffic advisory
TAA ........................................... terminal arrival area
TAC ........................................... terminal area chart
TACAN ..................................... tactical air navigation aid
TAF ........................................ aerodrome forecast  
TAS ........................................ true airspeed  
TATC ..................................... Transportation Appeal Tribunal of Canada  
TAWS .................................. terrain awareness and warning system  
TC ......................................... Transport Canada  
TC AIM ................................. Transport Canada Aeronautical Information Manual  
TCCA .................................. Transport Canada Civil Aviation  
TCA ........................................ terminal control area  
TCAS I/II .............................. traffic alert and collision avoidance system  
TCH ....................................... threshold crossing height  
TCU ....................................... terminal control unit  
TDOA ................................... time difference of arrival  
TDZ ....................................... touchdown zone  
TDZE ................................... touchdown zone elevation  
TDZL .................................... touchdown zone lighting  
TLOF .................................... touchdown and lift-off area  
TMI ...................................... track message identification  
TOD ....................................... top of descent  
TODA ..................................... take-off distance available  
TORA .................................... take-off run available  
TP ......................................... Transport Canada publication  
TRA ....................................... tower radar area  
TRB ...................................... true reference bearings  
TRP ....................................... tower radar plan  
TSB ....................................... Transportation Safety Board of Canada  
TSE ....................................... total system error  
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  
(Veneric term)  
VCOA .................................. visual climb over the airport  
VCS ...................................... vehicle control service  
VDF ...................................... VHF direction finder  
VDI ...................................... vertical deviation indicator  
VDL ...................................... VHF digital link  
VDR ...................................... VHF data radio  
VFR ....................................... visual flight rules  
VGSS .................................. voice generator sub-system  
VHF ...................................... very high frequency  
VLF ...................................... very low frequency  
VLOS .................................. visual line-of-sight  
VMC ..................................... visual meteorological conditions  
VNA ...................................... vertical noise abatement procedure  
VNAV .................................... vertical navigation  
VNC ...................................... VFR navigation chart  
VOLMET .............................. in-flight meteorological information  
VOR ...................................... VHF omnidirectional range  
VORTAC ................................ combination of VOR and TACAN  
VPA ...................................... vertical path angle  
VTA ....................................... VFR terminal area chart  
VTOL aircraft ........................ vertical takeoff and landing aircraft  
W ......................................... west  
WAAS .................................. wide area augmentation system  
WAFS .................................. world area forecast centre  
WAFS .................................. world area forecast system  
WMO .................................... World Meteorological Organization  
WP ...................................... waypoint  
WPR .................................... waypoint position reporting  
WS ...................................... wind shear  
zulu (Z) ................................ Coordinated Universal Time

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**

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 is not required for aircraft operations.

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

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5.4  **Canadian Aviation Regulation Advisory Council (CARAC)**

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.

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.

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

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.

5.4.3  **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 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.

The Secretariat manages, implements and maintains all systems and processes involved in the CARAC Activity Reporting System, accessible at <http://wwwapps.tc.gc.ca/Saf-Sec-Sur/2/NPA-APM/crs.aspx>, providing 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.
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

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:

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

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