

## CUSTOMER GUIDE TO CHARGES

Effective November 15, 2013



# NAV CANADA

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# NAV CANADA

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### TABLE OF CONTENTS

Section	Page
<b>A. FOREWORD .....</b>	<b>1</b>
1. BACKGROUND .....	1
2. CHARGING PRINCIPLES .....	2
<b>B. SCHEDULE OF CHARGES .....</b>	<b>3</b>
1. INTRODUCTION .....	3
2. SUMMARY OF CHARGES .....	4
3. CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) THREE METRIC TONNES OR LESS FOR TERMINAL AND ENROUTE SERVICES .....	6
a) Annual Charges for Canadian-Registered Propeller Aircraft (including Helicopters) .....	6
b) Quarterly Charges for Foreign-Registered Propeller Aircraft (including Helicopters) .....	7
c) Daily Charges at Specified International Airports for Propeller Aircraft (including Helicopters) Weighing Three Metric Tonnes or Less .....	7
4. DAILY CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) OVER THREE METRIC TONNES AND SMALL JET AIRCRAFT FOR TERMINAL AND ENROUTE SERVICES .....	8
5. MOVEMENT BASED CHARGES FOR PROPELLER AIRCRAFT OVER THREE METRIC TONNES AND JET AIRCRAFT FOR TERMINAL AND ENROUTE SERVICES .....	10
a) Enroute Charge .....	10
b) Terminal Services Charge (TSC) .....	12
c) Minimum Charges .....	12
6. OCEANIC CHARGES .....	13
7. CHARGES FOR EXTRA SERVICES .....	14
a) Charges for Services Requested Outside Normal Hours of Operation .....	14
b) Charges for Services Requested Above the Level of Service Policy .....	14
c) Charges for Airshows .....	14
<b>C. EXEMPTIONS AND REDUCTIONS .....</b>	<b>14</b>
1. EXEMPTION FROM CHARGES .....	14
2. REDUCTION TO CHARGES .....	15
a) Oceanic Charges .....	15
b) Terminal Services Charge (TSC) for Training Flights .....	15
<b>D. CALCULATION OF AIRCRAFT WEIGHT .....</b>	<b>16</b>
1. WEIGHT CALCULATION OPTIONS .....	16
2. PROVISION OF INFORMATION .....	17
<b>E. BILLING INFORMATION .....</b>	<b>17</b>
1. ANNUAL AND QUARTERLY CHARGES .....	17
2. DAILY CHARGES AND MOVEMENT-BASED CHARGES .....	17
3. INVOICE .....	18
4. STATEMENT OF ACCOUNT .....	18

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<b>F. TERMS AND CONDITIONS.....</b>	<b>18</b>
1. PAYMENT.....	18
2. INTEREST CHARGES.....	18
3. PERSON LIABLE FOR CHARGES.....	19
4. CREDIT SECURITY ARRANGEMENTS.....	19
5. IDENTIFICATION OF AIRCRAFT OWNER.....	21
6. CHANGE OF ADDRESS.....	21
7. WITHHOLDING OF SERVICE.....	21
8. SEIZURE AND DETENTION OF AIRCRAFT.....	21
9. LIMITATION OF LIABILITY.....	21
<b>G. SPECIAL APPLICATIONS.....</b>	<b>22</b>
1. CLAIMS AND CREDIT NOTES.....	22
2. EXEMPTIONS AND REDUCTIONS.....	22
<b>H. CUSTOMER SERVICE AND ACCOUNT INQUIRIES.....</b>	<b>23</b>
<b>I. COMMONLY ASKED QUESTIONS.....</b>	<b>23</b>

## LIST OF APPENDICES

Appendix A - Definitions  
Appendix B - Aerodromes Subject to the Terminal Services Charge  
Appendix C - Examples of Movement-Based Charges  
Appendix D - Table of Conversion  
Appendix E - Enroute Charge Area

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## A. FOREWORD

### 1. BACKGROUND

NAV CANADA is responsible for the provision of civil air navigation facilities and services for aircraft in Canadian-controlled airspace, which includes Canadian domestic airspace and international oceanic airspace delegated to Canada by the International Civil Aviation Organization (ICAO). These services include air traffic control, flight information, aeronautical information, weather briefings, airport advisory services and electronic aids to navigation. These services are delivered from various facilities including a national headquarters, seven area control centres (ACC), 42 control towers, 56 flight services stations (FSS), eight Flight Information Centres (FIC), 34 maintenance centres, 51 community aerodrome radio stations (mainly in northern Canada), 48 radar sites, 16 Automatic Dependent Surveillance-Broadcast (ADS-B) receiver sites, 96 Multilateration (MLAT) sensor sites and over 1,000 electronic aids to navigation. Operators of aircraft depend on the air navigation system for the safe, efficient and expeditious movement of their aircraft through Canadian-controlled airspace.

NAV CANADA is a non-share capital, private corporation and recovers its costs through a system of service charges in accordance with the Civil Air Navigation Services Commercialization Act, S.C. 1996, c. 20 (the ANS Act). NAV CANADA invoices and collects charges to cover the costs of the air navigation services provided or made available by the Corporation or a person acting under the authority of the Minister of National Defence.

Before November 1, 1996, air navigation services were provided by the Canadian government and funded mainly through the Air Transportation Tax charged to airline passengers. This tax was rescinded on November 1, 1998. NAV CANADA now provides these services which are funded solely by air navigation fees levied on aircraft operators.

The purpose of this Guide is to provide information on the calculation of the charges applicable to the various categories of aircraft and explain the administrative procedures relating to the charges. This Guide is available on the NAV CANADA web site at [www.navcanada.ca](http://www.navcanada.ca).

**This Guide is effective November 15, 2013.** The charges set out in this Guide are those that are in effect on that date. The previous Guide is also available on the NAV CANADA web site at [www.navcanada.ca](http://www.navcanada.ca).

Announcements pertaining to charges have been issued as follows: the Announcement of New and Revised Service Charges dated September 1997, the Announcement of New and Revised Service Charges dated September 1998, the Announcement of Reduced Service Charges dated August 16, 1999, the Announcement of New and Revised Service Charges dated January 28, 2000, the Announcement of Revised Service Charges dated August 18, 2000, the Announcement of Revised Service Charges dated December 15, 2000, the Announcement of Revised Service Charges dated December 21, 2001, the Announcement of Revised Service Charges dated December 13, 2002, the Announcement of Revised Service Charges dated July 21, 2003, the Announcement of Revised Service Charges dated April 2004, the Announcement of Revised Service Charges dated July 2004, the Announcement of New and Revised Service Charges dated April 2006, the Announcement of Revised Service Charges dated July 2006, the Announcement

of Revised Service Charges dated July 2007, the Announcement of Revised Service Charges dated August 2008, and the Announcement of Revised Service Charges dated October 2013.

If you have any questions about any of the information in this Guide, please contact a Customer Service Representative at our toll-free number, or write to us. Details on how to reach us are provided on page 23.

## **2. CHARGING PRINCIPLES**

Extensive country-wide consultation is undertaken by NAV CANADA with aircraft operators, representative organizations of users and other stakeholders before implementing revised or new charges. Following pre-consultation, as appropriate, a Notice detailing proposed charges is published. This is followed by a formal consultation period. After incorporating any modifications that may be warranted in light of comments received, NAV CANADA publishes an Announcement detailing the new or revised charges and files a copy of the Announcement with the Canadian Transportation Agency, pursuant to the ANS Act.

In addition to conforming with the International Civil Aviation Organization's (ICAO) recommendations, NAV CANADA's charges are based on the following principles as set out in the ANS Act:

- charges must be in accordance with a methodology established and published by the Corporation that is explicit and that also includes the terms and conditions affecting charges;
- charges must not be structured in such a way that a user would be encouraged to engage in practices that diminish safety for the purpose of avoiding a charge;
- charges for the same services must not differentiate between domestic and international flights of air carriers;
- charges for the same services must not differentiate among Canadian air carriers or among foreign air carriers;
- charges must differentiate between the provision of services in relation to the landing and take-off of aircraft and the provision of services in relation to aircraft in flight, and must reflect a reasonable allocation of the costs of providing the services in those circumstances;
- charges in respect of recreational and private aircraft must not be unreasonable or undue;
- charges for designated northern or remote services and for services directed to be provided under subsection 24(1) of the ANS Act must not be higher than charges for similar services utilized to a similar extent elsewhere in Canada;
- charges must be consistent with the international obligations of the Government of Canada; and
- charges must not be at a level that, based on reasonable and prudent projections, would generate revenues exceeding the Corporation's current and future financial requirements in relation to the provision of civil air navigation services.

In addition to the charging principles, the ANS Act further provides that:

- the charging methodology may recognize that the value of the services differs among users;
- where the Corporation's charging methodology recognizes the value of the services and aircraft weight is used as a measure of the value of the services, the first charging principle is deemed not to have been observed if aircraft weight is taken into account either directly proportionally or greater than directly proportionally;
- notwithstanding the above, a category of users may be charged on a flat-fee basis so long as the charge is otherwise consistent with the charging principles set out above;
- "weight", in relation to an aircraft, means the maximum permissible take-off weight (MTOW), in metric tonnes, specified in the aircraft's certificate of airworthiness or in a document referred to in that certificate.

The definitions contained in Appendix A apply in this Guide.

NAV CANADA charges are based on the use of metric units (i.e., tonnes and kilometres) and are expressed in Canadian dollars.

All references to air navigation services set out in this Guide refer to air navigation services provided or made available by NAV CANADA or a person acting under the authority of the Minister of National Defence.

## **B. SCHEDULE OF CHARGES**

### **1. INTRODUCTION**

NAV CANADA obtains its revenues in the form of charges levied on aircraft operators for the provision or availability of air navigation services. The charging system is divided into three main categories for terminal and enroute services:

- charges for propeller aircraft (including helicopters) weighing three metric tonnes or less;
- daily charges for propeller aircraft over three metric tonnes and small jet aircraft; and
- movement-based charges for propeller aircraft over three metric tonnes and jet aircraft.

In addition, there are movement-based charges for oceanic services.

Described in the following sections are the categories of charges for air navigation services.

## 2. SUMMARY OF CHARGES

### CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) THREE METRIC TONNES OR LESS FOR TERMINAL AND ENROUTE SERVICES

#### ANNUAL CHARGES FOR CANADIAN-REGISTERED AIRCRAFT

<b>Weight – MTOW</b> (metric tonnes)	<b>Base Rates</b>
0.617 to 2.0	\$ 68
over 2.0 to 3.0	\$ 227

#### QUARTERLY CHARGES\* FOR FOREIGN-REGISTERED AIRCRAFT

<b>Weight – MTOW</b> (metric tonnes)	<b>Base Rates</b>
0.617 to 2.0	\$ 17.00
over 2.0 to 3.0	\$ 56.75

- \* Quarters are as follows: March 1 to May 31, June 1 to August 31, September 1 to November 30, December 1 to February 28 (or 29).

#### DAILY CHARGES AT SPECIFIED INTERNATIONAL AIRPORTS\* FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) WEIGHING THREE METRIC TONNES OR LESS

<b>Daily Charge</b>	<b>Maximum Charge</b>
\$ 10 per day	\$1,200 per year per aircraft

- \* Applicable at Vancouver including the water aerodrome, Calgary, Edmonton, Winnipeg, Toronto (L.B. Pearson), Ottawa (Macdonald-Cartier), and Montréal (Trudeau) international airports. This Daily Charge also applies to propeller aircraft (including helicopters) over 3.0 metric tonnes that have been declared to NAV CANADA as dedicated to recreational use.

**DAILY CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) OVER THREE METRIC TONNES FOR TERMINAL AND ENROUTE SERVICES**

<b>Weight – MTOW</b> (metric tonnes)	<b>Base Rates<sup>1)</sup></b>
over 3.0 to 5.0	\$ 42
over 5.0 to 6.2	\$ 84
over 6.2 to 8.6	\$ 333
over 8.6 to 12.3	\$ 773
over 12.3 to 15.0	\$ 1,152
over 15.0 to 18.0	\$ 1,384
over 18.0 to 21.4	\$ 1,866
over 21.4	\$ 2,421
Maximum Daily Charge for Helicopters	\$ 84

**DAILY CHARGES FOR SMALL JET AIRCRAFT WEIGHING 7.5 METRIC TONNES OR LESS FOR TERMINAL AND ENROUTE SERVICES**

<b>Weight – MTOW</b> (metric tonnes)	<b>Base Rates<sup>1)</sup></b>
0.617 to 3.0	\$ 159
Over 3.0 to 6.2	\$ 205
Over 6.2 to 7.5	\$ 333

**MOVEMENT-BASED CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) OVER THREE METRIC TONNES AND JET AIRCRAFT FOR TERMINAL AND ENROUTE SERVICES**

	<b>Base Rates</b>
Terminal Services	\$ 23.90
Enroute	\$ 0.03445

**OCEANIC CHARGES (PER FLIGHT)**

	<b>Base Rates</b>
NAT	\$ 93.24
Int'l Comm	
Position reporting using voice, or	\$ 58.56
Position reporting using data link	\$ 22.04

- 1) Aircraft operators also have the option of being billed the movement-based charges for terminal and enroute services instead of the daily charges.

### 3. CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) THREE METRIC TONNES OR LESS FOR TERMINAL AND ENROUTE SERVICES

Canadian and foreign registered propeller aircraft weighing between 0.617 (1,360 lbs.) and 3.0 metric tonnes (6,614 lbs.) are subject to Annual Charges and Quarterly Charges, respectively, for air navigation services (excluding oceanic services).

Where oceanic services are involved, related charges also apply (see subsection B.6).

#### a) ANNUAL CHARGES FOR CANADIAN-REGISTERED PROPELLER AIRCRAFT (INCLUDING HELICOPTERS)

Weight Group* (metric tonnes)	Base Rates
0.617 to 2.0 <sup>1)</sup>	\$ 68
Over 2.0 to 3.0	\$ 227 <sup>2)</sup>

- 1) Propeller aircraft weighing less than 0.617 metric tonnes are exempt from this charge.
- 2) Except for private propeller aircraft not used for business purposes, i.e., exclusively for recreational purposes. The fee for such propeller aircraft regardless of aircraft weight is the same as for aircraft in the 0.617 to 2.0 metric tonne weight group. This same fee also applies to propeller aircraft between 2 and 3 metric tonnes restricted to aerial agricultural spraying.

\* Maximum permissible take-off weight as reported in the Canadian Civil Aircraft Register

- The Annual Charges cover the 12-month period commencing March 1 of each year and ending on the last day of February the subsequent year, referred to as the annual fee period.
- The Annual Charges apply to an aircraft in service for all or part of the annual fee period, regardless of the type of flight permit or certificate of airworthiness in force.

**NOTE:** Canadian-registered aircraft that are not flown at all in Canadian-controlled airspace during the annual fee period (i.e. are out of service for the entire year due to storage, engine overhaul, repairs, modifications, etc., or are operating solely out of the country) are not subject to the annual charges, provided the aircraft operator completes a form declaring the inactive status of the aircraft (contact a Customer Service Representative). Supporting documentation satisfactory to NAV CANADA may also be required.

- The Annual Charges are not prorated for aircraft changing owners during an annual fee period, with the exception of the acquisition of an aircraft from a dealer and for which the fee has not been paid.
- For newly built aircraft acquired within an annual fee period, and new homebuilt/kit aircraft completed during the annual fee period, the Annual Charges will be prorated (contact a Customer Service Representative).
- Where prorated charges are applicable, the amount will be calculated based on the number of months, or part thereof, between the date of registration to the new owner and the end of the annual fee period.

- An aircraft manufacturer or a dealer acquiring an aircraft for the purpose of sale is not assessed the Annual Charges for the aircraft.

**b) QUARTERLY CHARGES FOR FOREIGN-REGISTERED PROPELLER AIRCRAFT (INCLUDING HELICOPTERS)**

For foreign-registered propeller aircraft, Quarterly Charges apply. The charge is 25% of the above Annual Charge on Canadian-registered propeller aircraft.

- A foreign-registered aircraft is charged on the basis of the first recorded arrival into a Canadian aerodrome or entry into Canadian airspace, excluding flights between two points in the U.S., during each quarter of the annual fee period: i.e., March 1 to May 31, June 1 to August 31, September 1 to November 30, December 1 to February 28 (or 29). If registration marks are not provided, each flight concerned is charged at the quarterly rate.
- The aircraft weight used for an aircraft is the typical maximum permissible take-off weight for that aircraft type by reference to the Canadian Civil Aircraft Register.

**c) DAILY CHARGES AT SPECIFIED INTERNATIONAL AIRPORTS FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) WEIGHING THREE METRIC TONNES OR LESS**

A Daily Charge applies to propeller aircraft, including helicopters, weighing 3.0 metric tonnes or less (MTOW) that depart from Vancouver (including the water aerodrome), Calgary, Edmonton, Winnipeg, Toronto (Pearson), Ottawa (Macdonald-Cartier), and Montréal (Trudeau) international airports. The charge applies to an aircraft each day it departs from one or more of these airports, where a day is defined as each 24-hour period that commences at 0800 GMT.

An annual maximum limit per aircraft applies for this Daily Charge, where the annual period runs from March 1 to February 28 (or 29). The annual limit applies to both Canadian-registered aircraft and foreign-registered aircraft.

The Daily Charge and the annual maximum limit are set out in the following table.

**DAILY CHARGE FOR PROPELLER AIRCRAFT WEIGHING THREE METRIC TONNES OR LESS\***

<b>Daily Charge</b>	<b>Maximum Charge</b>
\$ 10 per day	\$1,200 per year per aircraft

- \* Applicable at Vancouver (including the water aerodrome), Calgary, Edmonton, Winnipeg, Toronto (L.B. Pearson), Ottawa (Macdonald-Cartier), and Montréal (Trudeau) international airports. This Daily Charge will also apply to propeller aircraft (including helicopters) over 3.0 metric tonnes that have been declared to NAV CANADA as dedicated to recreational use.

To ensure that the Daily Charge is applied to an aircraft only once per chargeable day, the aircraft registration mark is required for each flight by the aircraft. Where the aircraft registration mark is not provided in the flight plan, such as where centre stored flight plans or master flight plans are used or other circumstances such as where a flight plan is not filed, the aircraft registration mark must be provided in a way and at a time that is satisfactory to NAV CANADA. Any flight departing from one of the seven specified airports for which this information is not provided will be charged at the daily rate. Also, in the absence of the aircraft

registration mark, it will not be possible to apply the annual maximum to an aircraft since the specific aircraft cannot be identified. Contact a Customer Service Representative for further information.

This Daily Charge applies in addition to the existing Annual and Quarterly charges. The Annual and Quarterly charges do not count towards the annual maximum pertaining to the new Daily Charge.

Exemptions from charges, as identified in Section C of this Guide, apply to this Daily Charge, with the exception of the exemptions for ultralights, gliders, balloons and aircraft weighing less than 617 kg.

The following exemptions are also provided:

- A departure that follows a landing by a flight where an emergency was declared and where the airport had not been the intended destination.
- A departure that follows a landing by a flight using the airport as a weather alternate (applies to both IFR and VFR flights where the pilot declares a diversion due to weather).
- Operational training flights related to search and rescue operations under the direction of the Department of National Defence.

Exemptions can only be claimed by contacting a Customer Service Representative. Refer to Section G for further information.

#### **4. DAILY CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS) OVER THREE METRIC TONNES AND SMALL JET AIRCRAFT FOR TERMINAL AND ENROUTE SERVICES**

##### **DAILY CHARGES FOR PROPELLER AIRCRAFT (INCLUDING HELICOPTERS)**

Propeller aircraft, including helicopters, weighing more than three metric tonnes (6,614 pounds), are subject to Daily Charges for terminal and enroute air navigation services or, at the operator's option, the movement-based charges for terminal and enroute services as set out in subsection B.5.

<b>Weight Groups*</b> (metric tonnes)	<b>Base Rates<sup>1)</sup></b>
Over 3.0 up to 5.0	\$ 42
Over 5.0 up to 6.2	\$ 84
Over 6.2 up to 8.6	\$ 333
Over 8.6 up to 12.3	\$ 773
Over 12.3 up to 15.0	\$ 1,152
Over 15.0 up to 18.0	\$ 1,384
Over 18.0 up to 21.4	\$ 1,866
Over 21.4	\$ 2,421
Maximum for helicopters	\$ 84

- 1) Except for private propeller aircraft (including helicopters) not used for business purposes, i.e., exclusively for recreational purposes. The fee for such propeller aircraft regardless of aircraft weight is the same as for propeller aircraft (including helicopters) in the 0.617 to 2.0 metric tonne weight group.

\* maximum permissible take-off weight

#### **DAILY CHARGES FOR SMALL JET AIRCRAFT**

Jet aircraft weighing 0.617 metric tonnes up to 7.5 metric tonnes are subject to Daily Charges for terminal and enroute air navigation services as set out below or, at the operator's option, the movement-based charges for terminal and enroute services as set out in subsection B.5. For jet aircraft weighing less than 0.617 metric tonnes, the same daily charge as outlined in subsection B.3.c for propeller aircraft applies at specified international airports.

<b>Weight Groups*</b> (metric tonnes)	<b>Base Rates</b>
0.617 to 3.0	\$ 159
Over 3.0 to 6.2	\$ 205
Over 6.2 to 7.5	\$ 333

\* maximum permissible take-off weight

For the purposes of applying the Daily Charges, a day is defined as each 24-hour period commencing at 0800 GMT.

The Daily Charge is applied to an aircraft for each day it makes one or more departures as follows:

- (a) from one or more aerodromes with air navigation facilities staffed either by NAV CANADA or by a person acting under the authority of the Minister of National Defence, in the case of flights between two Canadian aerodromes; and/or

(b) from one or more Canadian aerodromes, in the case of international flights.

Only one Daily Charge is applied regardless of the amount of flight activity in a day by the same aircraft.

**To qualify for the application of the daily charge in respect of a flight, the aircraft operator must include the aircraft registration mark in the flight plan, except for centre stored flight plans, master flight plans or other circumstances, such as where a flight plan is not filed, in which case the aircraft registration mark must be provided in a way and at a time that is satisfactory to NAV CANADA. Otherwise the aircraft will be billed the movement-based charges for terminal and enroute services. Contact a Customer Service Representative for further information.**

A propeller aircraft (including helicopters) over three metric tonnes or a small jet aircraft overflying Canada without landing or taking off in Canada is subject to the Enroute Charge as set out in subsection B.5.a.

Minimum charges apply to propeller aircraft over three metric tonnes (including helicopters) and to jet aircraft, operated in Canadian airspace. These charges are described in subsection B.5.c.

Where oceanic services are involved, related charges also apply (see subsection B.6).

## **5. MOVEMENT BASED CHARGES FOR PROPELLER AIRCRAFT OVER THREE METRIC TONNES AND JET AIRCRAFT FOR TERMINAL AND ENROUTE SERVICES**

### **a) ENROUTE CHARGE**

The Enroute charge is for air navigation services, other than terminal and oceanic services, provided or made available to flights in Canadian-controlled airspace, excluding the Gander Oceanic Flight Information Region/Control Area (FIR/CTA).

The charge applies to both overflights and flights which land or take off in Canada. With respect to flights which land or take off in Canada, the Enroute charge applies:

- (a) to flights between two Canadian aerodromes, where at least one of which is located at or below 60° North latitude, and at least one of which is an aerodrome where NAV CANADA applies the Terminal Services charge; and
- (b) to flights between two Canadian airports that are located north of 60° North latitude, and at least one of which is an airport where NAV CANADA applies the Terminal Services charge; and
- (c) to international flights.

For the purpose of NAV CANADA charges, airport means a certified aerodrome, or an uncertified aerodrome with air navigation services staffed either by NAV CANADA or by a person acting under the authority of the Minister of National Defence.

The charge takes into account the distance flown and, less than proportionately, the aircraft weight. The charge is applied on a per flight basis and is equal to the product of the unit rate (**R**), the weight factor (**W**) and the distance (**D**). The calculation of the charge is described below:

$$\text{charge} = R \times W \times D$$

- The **unit rate (R)** is composed of a base rate of **\$0.03445**.
- The **weight factor (W)** is obtained by taking the square root of the maximum permissible take-off weight of the aircraft as determined in section D.
- The **distance (D)** in kilometres is equal to the great circle distance in Canadian-controlled airspace, excluding Gander FIR/CTA, in the case of overflights and international flights landing or taking off in Canada. The Canadian-controlled airspace includes Canadian airspace and any airspace delegated to Canada for the purpose of air navigation services, but excludes any Canadian airspace delegated to another ANS provider for the same purpose. The boundaries of the Canadian-controlled airspace are identified in the aeronautical charts published by NAV CANADA and are also set out in the Canadian Aeronautical Charts Supplement, which can be obtained from NAV CANADA. Appendix E contains a depiction of the Enroute Charge area.

In the case of flights between points in Canada, great circle distance between the departure and arrival airports is used in distance calculations, regardless of whether the aircraft exits/enters Canadian-controlled airspace during the course of the flight.

Note: The great circle distance is the *shortest* distance between two points on the surface of the Earth. See Appendix A for a comprehensive definition.

#### Distance Adjustment

- For flights between points in Canada, the following adjustments are made to the enroute distance. Both departure and arrival airports (i.e., at each end of the flight) are taken into account in the adjustment:
  - at airports identified in Appendix B:
    - if dedicated approach/departure control services are provided at the airport, the distance is reduced by 65 km; or
    - if dedicated approach/departure control services are not provided at the airport, the distance is reduced by 35 km.
  - at other airports, the reduction is nil.
- For international flights landing or taking off in Canada, the same concept as above is followed, although the distance adjustment would only apply at the Canadian airport.

The Enroute Charge does not apply to flights between two points in the United States other than:

- A flight to or from Alaska by aircraft weighing more than 200 metric tonnes and transiting Canadian-controlled airspace;

- Flights by turbojet aircraft, with maximum permissible take-off weight (MTOW) of 20 metric tonnes or more and providing commercial service between two points in the United States, which operate in Canadian-controlled domestic airspace east of 95° W longitude and west of 68° W longitude, and enter and exit Canadian-controlled airspace south of 49° N latitude.

Should the United States introduce an enroute charge on flights between two points in Canada transiting U.S. airspace, NAV CANADA would extend the application of the enroute charge to all flights between two points in the United States transiting Canadian-controlled airspace, following an announcement in accordance with the ANS Act.

#### **b) TERMINAL SERVICES CHARGE (TSC)**

The Terminal Services Charge is for terminal services provided or made available at or in the vicinity of an aerodrome. Services include dedicated approach/departure control services provided by the ACCs and the TCU, or aerodrome services including, for example, airport advisory services from an FSS and air traffic control from a tower. The charge is applied to departing flights from aerodromes with air navigation facilities staffed by either NAV CANADA personnel or a person acting under the authority of the Minister of National Defence. Aerodromes where this charge applies are listed in Appendix B.

The charge takes into account, less than proportionately, the aircraft weight. The charge is applied on departures only on a per flight basis and is equal to the product of the unit rate (**R**) and the weight factor (**W**). The calculation of the charge is described below:

$$\text{charge} = R \times W$$

- The **unit rate (R)** is composed of a base rate of **\$23.90**.
- The **weight factor (W)** is obtained by taking the 0.8 power of the maximum permissible take-off weight of the aircraft as determined in section D.

#### **c) MINIMUM CHARGES**

An annual minimum charge of \$227 applies to Canadian-registered propeller aircraft (including helicopters) over three metric tonnes and to jet aircraft operated in Canadian-controlled airspace. For foreign-registered aircraft, the corresponding minimum charge is a quarterly minimum equal to 25% of these amounts.

The annual minimum charge for propeller aircraft over three metric tonnes restricted to aerial agricultural spraying is \$68.

- The minimum charges do not apply to private propeller aircraft over three metric tonnes used exclusively for non-business, i.e., recreational, purposes. These aircraft are subject to annual or quarterly charges, as set out in subsections B.3.a and B.3.b.

- Minimum charges cover the twelve-month period commencing March 1 of each year and ending the last day of February the subsequent year. The charges are calculated by taking the charge amount as specified above for each aircraft, and deducting any amounts invoiced for Terminal, Enroute and Daily charges (per subsections B.4, B.5.a and B.5.b) for the period. If the difference is greater than zero, the amount of the difference is invoiced as a minimum charge.
- The minimum charge is typically invoiced several months after the end of the fee period as it is necessary that all invoices for Terminal, Enroute and Daily charges, and any subsequent billing adjustments, are processed before the charge can be correctly calculated.
- The minimum charges apply to an aircraft in service for all or part of the fee period, regardless of the type of flight permit or certificate of airworthiness in force.

**NOTE:** Canadian-registered aircraft that are not flown at all in Canadian-controlled airspace during the fee period (i.e., are out of service for the entire year due to storage, engine overhaul, repairs, modifications, etc., or are operating solely out of the country) are not subject to the minimum charges, provided the aircraft operator completes a form declaring the inactive status of the aircraft (contact a Customer Service Representative). Supporting documentation satisfactory to NAV CANADA may also be required.

- The minimum charges are not prorated for aircraft changing owners during a fee period, with the exception of the acquisition of an aircraft from a dealer and for which the fee has not been paid.
- For newly built aircraft acquired within the fee period, the minimum charges will be prorated (contact a Customer Service Representative).
- Where prorated charges are applicable, the amount will be calculated based on the number of months, or part thereof, between the date of registration to the new owner and the end of the fee period.
- An aircraft manufacturer or a dealer acquiring an aircraft for the purpose of sale is not assessed the minimum charge for the aircraft.

Where oceanic services are involved, related charges also apply (see subsection B.6).

## 6. OCEANIC CHARGES

There are two Oceanic Charges: the North Atlantic Enroute Facilities and Services Charge (NAT) and the International Communication Services Charge (Int'l Comm).

The NAT Charge is for the provision or availability of air navigation services to an aircraft during the course of a flight in the Gander Oceanic FIR/CTA.

The Int'l Comm Charge is for air-ground radio frequencies and certain other communication links provided or made available to an aircraft during the course of an international flight, other than a flight between Canada and the continental United States, to obtain communication services.

Oceanic Charges are based on a flat fee per flight.

	Base Rates
NAT	\$ 93.24
Int'l Comm	
Position reporting using voice, or	\$ 58.56
Position reporting using data link	\$ 22.04

## 7. CHARGES FOR EXTRA SERVICES

### a) CHARGES FOR SERVICES REQUESTED OUTSIDE NORMAL HOURS OF OPERATION

Incremental costs will be charged to users who request services outside normal hours of operation, in addition to the applicable air navigation services charges.

### b) CHARGES FOR SERVICES REQUESTED ABOVE THE LEVEL OF SERVICE POLICY

The cost of services in excess of the Level of Service Policy will be separately identified and recovered through the existing charging methodology for air navigation services.

Such costs will be recovered on a site specific basis with respect to terminal services and on a system basis with respect to enroute or oceanic services.

### c) CHARGES FOR AIRSHOWS

Any incremental costs will be recovered. However, an exemption is provided for any applicable air navigation services charges to flights taking part in such events.

## C. EXEMPTIONS AND REDUCTIONS

Section G contains important policy information on claiming credits, exemptions, and reductions. **Note that a claim must be filed within 90 days from the date of the invoice.**

### 1. EXEMPTION FROM CHARGES

Some exemptions from air navigation services charges are provided for certain categories of flights. These are listed below. There are additional exemptions that apply only in respect of the daily charge outlined in subsection B.3.c.

- gliders, ultralights and balloons, except in the case of the daily charge outlined in subsection B.3.c;
- all aircraft weighing less than 617 kg (1,360 pounds), except in the case of the daily charge outlined in subsection B.3.c;
- aircraft or flights dedicated to search and rescue operated under the direction of police or the Department of National Defence;

- aircraft or flights dedicated to firefighting and related operational training (includes transportation of firefighting personnel and/or equipment and supplies);
- aircraft or flights dedicated to air ambulance operations paid by government;
- test flights performed exclusively for the following purposes (i.e. flights also serving any other purpose, such as the return trip from the maintenance facility, do not qualify):
  - testing aircraft following overhauls, modifications, repairs and inspections for which a certificate of compliance is to be given; or
  - enabling aircraft to qualify for the issue or renewal of a certificate of airworthiness;
- flights aborted (not reaching their next destination and returning to the point of flight departure) due to weather conditions;
- flights taking part in air shows (includes flights to and from the airshow);
- flights operated exclusively for a registered charity as defined in the Income Tax Act (Canada) or equivalent foreign statute;
- state aircraft of a foreign country\*, unless charging has been authorized by an Order-in-Council; and
- aircraft or flights operated under the authority of the Canadian Minister of National Defence.

Section G explains the procedures to follow in order to be granted these exemptions.

\* In order to qualify for the foreign state aircraft exemption, the aircraft must be owned and operated by the state and the flight must serve no commercial purpose. Aircraft owned/operated by state-owned airlines *do not* qualify as state-owned/operated aircraft for the purpose of this exemption.

## **2. REDUCTION TO CHARGES**

### **a) OCEANIC CHARGES**

If an aircraft lands or takes off from an airport in Canada located north of 60 North Latitude and lands or takes off from an airport in Greenland, the Oceanic Charges will be reduced by 60%. You must contact a Customer Service Representative to receive the reduced charge.

### **b) TERMINAL SERVICES CHARGE (TSC) FOR TRAINING FLIGHTS**

For a flight operation performed exclusively for the purpose of training or testing of a person or persons (e.g., flight crew) to obtain, upgrade or renew a licence, including pilot proficiency checks, a charge is applied only on the first departure at each airport involved in the flight operation. However, training flights that transit from a main airport to a smaller airport because training flights are not allowed at the main airport, are exempt from the TSC at the main airport.

For training flight purposes, a flight operation of an aircraft at an airport is limited to the flight activity by that aircraft between taxiing on and taxiing off the aircraft manoeuvring area.

To qualify for the reduction in the TSC, training as described above must be the sole purpose of the flight. For example, to qualify, the flight cannot also serve for positioning or ferrying of the aircraft.

Section G explains the procedures to follow in order to be granted these reductions.

## **D. CALCULATION OF AIRCRAFT WEIGHT**

### **1. WEIGHT CALCULATION OPTIONS**

Except as noted below, weight used in calculating a charge is determined in one of two ways, at the operator's election. The options are:

#### **OPTION 1: AVERAGE WEIGHT BY AIRCRAFT TYPE WITHIN THE OPERATOR'S FLEET**

Where an operator has two or more aircraft of the same type but with different weights, the average of the maximum permissible take-off weight of all his aircraft of that type, expected to be operated in Canadian-controlled airspace (excluding aircraft that transit only the Gander Oceanic FIR/CTA), shall be taken for the calculation of the average weight for each aircraft of that type. These averages are used in the calculation of charges for the flights, according to aircraft type, operated by the customer. The weight, as stated in the fleet submission, is expressed in metric tonnes rounded to the first decimal place.

**NOTE:** For the purpose of assessing the Daily Charge, the determination of the weight group of an aircraft is based on the maximum permissible take-off weight of each individual aircraft.

#### **OPTION 2: SPECIFIC WEIGHT OF EACH AIRCRAFT**

The weight of the aircraft is defined as the maximum permissible take-off weight of that aircraft as stated in the fleet submission, in metric tonnes rounded to the first decimal place.

Under this option, in addition to providing fleet submissions, the operator must include the correct aircraft registration marks on all flight plans.

With respect to propeller aircraft, and jet aircraft weighing 7.5 metric tonnes or less, NAV CANADA requires correct aircraft registration marks in order to bill the Daily Charge correctly. Where the aircraft registration marks are not provided in the flight plan for flights of aircraft of these types, the aircraft will be billed as follows:

- For propeller aircraft over 3.0 metric tonnes and jet aircraft 7.5 metric tonnes or less, the aircraft will be billed the movement-based charges for terminal and enroute services, and
- For aircraft 3.0 metric tonnes and less that depart from one or more of the international airports specified in subsection B.3.c, the daily rate will be applied to each departure.

## 2. PROVISION OF INFORMATION

Fleet data submissions are necessary to determine the aircraft weight that is used in the fee calculation for each flight billed. In the absence of a fleet data submission, NAV CANADA calculates the charge for the flight based upon the highest published maximum permissible take-off weight for an aircraft of the same type. In the case of Option 2, if a fleet data submission is provided but the aircraft registration marks are not provided in the flight plan, NAV CANADA calculates the charge for the flight based upon the highest maximum permissible take-off weight for an aircraft of the same type of the carrier concerned.

Customers (other than those only operating aircraft weighing 3 metric tonnes or less) must file an updated submission any time their fleet is modified. ***The operator is also required to select one of the two weight calculation options as noted above.***

**NOTE:** When electing Weight Calculation Option 2, certain procedures must be followed so that NAV CANADA has the information necessary to determine the weight of the aircraft actually flown. Credit notes will not be issued for flights billed at the heavier weight if the following procedures are not followed:

- provide updated fleet data submissions to reflect any fleet changes by the last working day of the calendar month in which new aircraft were first operated. Aircraft that are not recorded with NAV CANADA will be billed at the heavier weight as explained above;
- include the correct aircraft registration marks on all flight plans;
- file a complete ICAO flight plan with a Canadian ACC or FIC in order to ensure that NAV CANADA captures the aircraft registration.

**NOTE:** In cases where the aircraft registration marks are not provided, e.g., repetitive (centre-stored) flight plans, or U.S. air carriers using a NAS flight plan, you should contact a Customer Service Representative.

## E. BILLING INFORMATION

### 1. ANNUAL AND QUARTERLY CHARGES

The Annual Charges are normally billed in March each year. For aircraft acquired during the annual fee period, an invoice is normally issued in the month following the month of acquisition.

Quarterly Charges are normally billed in the month that follows the month of first flight of the aircraft into Canadian controlled airspace in any fee quarter.

### 2. DAILY CHARGES AND MOVEMENT-BASED CHARGES

Terminal Services, Enroute, Oceanic, and Daily Charges are normally billed on a monthly basis for flights which took place in the preceding month. However, NAV CANADA may issue invoices more frequently to any customer where NAV CANADA, acting reasonably and in good faith, is of the opinion that NAV CANADA charges will not be paid when due.

### 3. INVOICE

For Daily and movement-based charges, invoices are issued together with a detailed report and are normally sent out by regular mail.

In the event that the flight data required for billing is delayed or that system problems preclude normal billing, interim invoices may be issued to commercial aircraft operators based on their total billings for the most recent billing period of complete flight data. Any adjustments for overpayments or underpayments would be made once the final invoice for the period has been issued.

### 4. STATEMENT OF ACCOUNT

Statements are sent out on a monthly basis. A statement shows all transactions to the customer's account (e.g., bills sent, payments made, credit/debit notes issued).

## F. TERMS AND CONDITIONS

### 1. PAYMENT

Amounts are billed in Canadian dollars. Depending on the charge type, remittances may be made by cheque, money order or wire transfer in Canadian dollars, or equivalent U.S. dollars converted at the exchange rate for buying Canadian dollars on the day the remittance is deposited by NAV CANADA.

Cheques and money orders must be sent by mail. Payment of the Annual Charge may also be made by credit card (VISA, MasterCard or American Express) in which case the credit card authorization form/invoice stub must be properly completed and returned by mail.

Payment is credited to the customer account on the date of receipt by NAV CANADA.

All charges are due by the date of the invoice ("the due date"), and payable upon receipt of invoice. However, balances paid within 30 days of the due date will normally not be charged interest, as provided for in subsection F.2.

To ensure payments are applied correctly, customers are requested to provide clear remittance advice by listing the Invoice number and/or Customer number.

Payments may be made through various methods. **Payment instructions as well as the relevant bank details are provided on the invoice.**

### 2. INTEREST CHARGES

When payment in full is not received by the 30th day following the due date, NAV CANADA shall charge interest on the amount outstanding and such interest shall be calculated commencing on the first day after the due date and continuing until all outstanding amounts are paid in full.

Interest charged is simple interest calculated daily.

Interest shall be calculated at an annual rate of 18 per cent (or 1.5 % monthly).

NSF cheques or stop payments will be debited to the customer account along with a \$25 administrative charge and any applicable interest charges.

Interest and administrative charges are required to be paid immediately upon receipt of invoice or statement for same.

### **3. PERSON LIABLE FOR CHARGES**

Pursuant to Section 55 of the ANS Act, the owner and operator of an aircraft are jointly and severally liable for the payment of any charge for air navigation services imposed by NAV CANADA in respect of the aircraft.

In terms of liability for payment of charges, "owner of an aircraft" includes:

- the person in whose name the aircraft is registered;
- a person in possession of an aircraft as purchaser under a conditional sale or hire-purchase agreement that reserves to the vendor the title to the aircraft until payment of the purchase price or performance of certain conditions;
- a person in possession of the aircraft as chattel mortgagor under a chattel mortgage; or
- a person in possession of the aircraft under a bona fide lease or agreement of hire.

Where an aircraft operator has significant and/or long overdue charges, NAV CANADA may contact the owner of the aircraft and advise of the operator's overdue account status and of the owner's joint and several liability and seek payment from the owner accordingly.

### **4. CREDIT SECURITY ARRANGEMENTS**

This policy applies in respect of a "customer" receiving, or having made available to them, air navigation services from NAV CANADA.

A "customer" means any person, which includes an individual, partnership, corporation, trust, unincorporated organization, government or agency or political subdivision thereof, or any other form of legal entity, including "affiliated" customers. Customers are affiliated customers if one of them is the subsidiary of the other, both are subsidiaries of the same customer, or each of them is controlled by the same person. A customer is a subsidiary of another customer if it is controlled by that other customer.

A customer is controlled by a person or other customer if

- (i) with respect to any entity, the ownership at the relevant time of securities carrying more than 50% of the exercisable voting rights attached to all outstanding securities of that entity, other than by way of security only, if the votes carried by those securities are sufficient to elect a majority of that entity's board of directors to otherwise provide for effective control of that entity;
- (ii) with respect to an entity without securities, it has the ability to manage the business and affairs of the entity;

- (iii) with respect to a partnership, it has the ability to manage the business and affairs of that partnership; and
- (iv) with respect to a trust, it has the ability to appoint and remove trustees of that trust.

Where a customer has significant and/or overdue charges or where NAV CANADA, acting reasonably and in good faith, is of the opinion that NAV CANADA charges will not be paid when due, NAV CANADA may seek credit security arrangements from the operator in a form and substance satisfactory to NAV CANADA.

The amount of outstanding charges, including both amounts billed and amounts accrued for unbilled charges, for any customer shall not exceed \$4 million at any time. When NAV CANADA determines that the maximum of \$4 million may be exceeded, it shall advise the customer that its billing and/or payment frequency shall be increased and/or a refundable deposit may be required as necessary to ensure the maximum is not exceeded. Where the customer makes a refundable deposit, the amount must remain on deposit for a minimum of six (6) months and NAV CANADA will remit to the depositor every six (6) months the interest earned based on the six (6) month Canadian Dollar Offered Rate (CDOR) or similar market rate at time of deposit or renewal. In appropriate circumstances, NAV CANADA may also require advance payments or deposits on account of charges.

A customer shall be required to pay for the provision or availability of air navigation services in advance or provide satisfactory security for such payment on the basis of an estimate of charges to be incurred, in the following circumstances:

- A customer fails to make a payment or any part of a payment in accordance with NAV CANADA's payment terms and conditions on three occasions or more;
- The customer's Dun & Bradstreet Financial Stress Score Risk Class is a 4 or 5, or the failure score equivalent, as amended from time to time;
- A customer's credit is rated and its credit rating is below or falls to below B as determined by Standard & Poor's or B2 as determined by Moody's;
- If a customer is under creditor protection (e.g., Companies' Creditors Arrangement Act (CCAA) in Canada or Chapter 11 in the United States) or any other form of financial restructuring in accordance with applicable insolvency legislation or the customer has publicly announced that it may file for creditor protection or bankruptcy; or
- The customer has not provided NAV CANADA, upon request, with financial information such as credit ratings, credit reports, analyst reports, current audited or unaudited financial statements, etc. which NAV CANADA deems sufficient to enable it to assess and conclude that the creditworthiness of the customer is satisfactory.

Without limiting NAV CANADA's general discretion to require security arrangements, where a customer has not been invoiced previously by NAV CANADA for ANS services, or has not been invoiced within the previous six months, and where total monthly charges are expected to exceed \$1,000, the customer will be required to make a pre-payment, which will remain on account for a minimum of two years, in an amount equal to twice the estimated monthly total

charges. The pre-payment amount will be subject to adjustments based on changes in the level of the estimated monthly total charges.

## **5. IDENTIFICATION OF AIRCRAFT OWNER**

Aircraft operators are required to advise NAV CANADA of changes in the operator or the registered owner of an aircraft, by providing a current fleet data submission or by contacting a Customer Service Representative. Aircraft operators may also be required to provide to NAV CANADA identification of any other owner of the aircraft that they operate, e.g., a lessor or a bank.

## **6. CHANGE OF ADDRESS**

NAV CANADA should be advised in writing, no later than 5 days prior to month's end, of a change of address.

## **7. WITHHOLDING OF SERVICE**

Where an aircraft operator has significant and/or overdue charges owed to NAV CANADA or where NAV CANADA, acting reasonably and in good faith, is of the opinion that NAV CANADA charges will not be paid when due, or where an aircraft operator fails to comply with any of the provisions of subsection F.3, NAV CANADA shall have the right, on 24 hours' notice to the operator, to terminate or reduce (withhold) its services, except in an emergency situation, until such time as applicable charges have been paid or until such time as credit security arrangements have been made by the operator in a form and substance satisfactory to NAV CANADA.

Notice, as described in the above preceding paragraph, shall be sent by registered mail or by electronic means and will be considered to have been received (a) in the case of electronic means, on actual receipt and (b) in the case of registered mail, on the date of delivery.

## **8. SEIZURE AND DETENTION OF AIRCRAFT**

Under the ANS Act, NAV CANADA may apply to the courts for an order authorizing the corporation to seize and detain aircraft in respect of unpaid and overdue charges.

## **9. LIMITATION OF LIABILITY**

The following Limitation of Liability Clause is included in the Terms and Conditions to clarify that the company does not assume responsibility for any business, economic or indirect loss or damage incurred by its customers or any third party:

In no event shall NAV CANADA, or any of its officers, directors, employees or affiliates, be liable to its Customer or any of its officers, directors, employees or affiliates, or to any third party for any loss of profit or revenue, loss of data, loss of income, failure to realize expected savings, or for any other indirect, consequential, special, incidental, punitive or other similar damages,

whether incurred or suffered as a result of unavailability of services, delay in delivery of services, performance, non-performance, suspension, termination, negligence, breach (including fundamental breach or otherwise), or other action or inaction by NAV CANADA, or for any other reason, theory of law or equity, even if the Customer has advised NAV CANADA of the possibility of such loss or damage or NAV CANADA had knowledge of, or reasonably could have foreseen the possibility of such loss or damage.

## **G. SPECIAL APPLICATIONS**

### **1. CLAIMS AND CREDIT NOTES**

If you believe that your invoice contains data or charges that are inaccurate, contact a Customer Service Representative. For all such requests, the invoice number must be quoted. Each claim is investigated by NAV CANADA with the objective of resolving disputes and settling claims in a timely manner. If the claim is accepted, a credit note is issued for the disputed amount. Where a claim is rejected, a confirmation is provided giving the reasons for the rejection. **A claim must be filed within 90 days from the date of the invoice.**

If a payment of a disputed amount is withheld by the operator, and after investigation by NAV CANADA that outstanding amount is deemed to have been payable, interest will accrue from the due date. NAV CANADA reserves the right to make billing adjustments if exemptions/credits have been improperly claimed.

### **2. EXEMPTIONS AND REDUCTIONS**

To obtain exemptions or reductions to charges defined in Section C, the operator must complete a NAV CANADA Declaration Form **within 90 days from the date of the invoice**. Contact a Customer Service Representative to obtain this form. In addition to the Declaration Form, other supporting documentation satisfactory to NAV CANADA may also be required. Aircraft operators, except DND and state aircraft of a foreign country, are normally billed for all services and must request a credit note for eligible exemptions and reductions. In some cases, a flight eligible for an exemption may not be billed if prior written notice has been made to the Director, Customer Service.

Documentation is required for flights undertaken by or for charitable organizations. Organizations that own their aircraft are required to submit proof of their registration as a charitable organization under the Income Tax Act (Canada) or equivalent foreign statute. An operator that provides a dedicated flight to a charitable organization is required to provide a signed document from the charity outlining the purpose and date of the flight dedicated to the organization, together with proof that the organization is a registered charity.

## H. CUSTOMER SERVICE AND ACCOUNT INQUIRIES

NAV CANADA has a dedicated Customer Contact Centre to handle your enquiries in English or French. Any questions should be directed to a Customer Service Representative. You can also forward by mail, facsimile or e-mail the item in question and a brief explanation of the issue. The contact numbers and e-mail address are as follows:

- Telephone:  
Toll free global number: 1-800-876-4693
- Facsimile: 1-613-563-3426  
or toll-free within North America: 1-877-663-6656
- E-mail: service@navcanada.ca

Regular hours of operation are Monday to Friday 8 a.m. to 6 p.m. (EST/EDT).

As a service for our customers, our web site [www.navcanada.ca](http://www.navcanada.ca) includes a charges calculator which allows you to calculate the Enroute and Terminal Services Charges for selected city pairs.

## I. COMMONLY ASKED QUESTIONS

### 1. Are there other financial arrangements available to settle accounts?

Customers have two options for remittances as outlined in Section F. If you are settling your account with a cheque, you must be sure to include the stub portion of the invoice. If you are settling an outstanding balance, please indicate how moneys should be applied against the balance. If you use the wire remittance option, please include payment details with the wire, and how the remittance is to be applied.

### 2. What if an aircraft has been sold but I continue to receive NAV CANADA invoices?

You should advise us of the change of ownership and include the details on the date of change, the new owner and a copy of the bill of sale. We will make the appropriate adjustment to your account.

### 3. Is it possible for an operator to determine how much a service is going to cost before making the flight?

There is a fee calculator on the NAV CANADA web site. With this tool, it is possible to get an estimate of the Enroute and Terminal Services Charges. As the model uses a representative weight for each aircraft type, the exact charge will depend on your fleet submission and option selected for weight determination. The model also uses representative billable distances for international city pairs, but in actuality billable distances will vary from flight to flight. You may also contact a Customer Service Representative for assistance.

4. What if I am billed for a flight which is exempt from charges?

If you have been charged for a flight which may be eligible for an exemption or a reduction in fees, contact a Customer Service Representative who will assist you in completing the required supporting documentation as indicated under Section G. NAV CANADA reserves the right to make billing adjustments if exemptions/credits have been improperly claimed.

5. Will I be charged anything if I only fly between unstaffed NAV CANADA facilities?

If the aircraft is a propeller aircraft over three metric tonnes and is not used exclusively for recreational purposes, or is a jet aircraft, there is a minimum annual/quarterly charge (refer Section B). This minimum is determined at the end of each annual/quarterly fee period.

If the aircraft is a propeller aircraft three metric tonnes or less, the Annual Charge (Canadian-registered aircraft) and Quarterly Charge (foreign-registered aircraft) will apply as set out in Section B.

6. What if the invoice does not arrive in time to meet NAV CANADA's payment schedule?

Some customers may experience delays in receiving their invoices because of geographic location or availability of reliable mail distribution. If you are affected by either of these items, please contact a Customer Service Representative to make arrangements for invoices to be emailed, faxed or couriered to you.

# **APPENDIX A**

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## **DEFINITIONS**

## DEFINITIONS

**“aerodrome”** means 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 and includes any buildings, installations and equipment situated thereon or associated therewith.

**“air ambulance flight”**, for purposes of NAV CANADA service charges exemptions, is a flight paid for by government and dedicated: (i) to a medical emergency requiring the transport of patients, organ donors, organs, or other life-saving medical material, or (ii) in a non-emergency situation, to the transport of patients on aircraft specially equipped for medical purposes.

**“aircraft in service”** means an aircraft that was flown during all or part of the annual fee period (March to end of February the following year).

**“airport”**, for the purpose of NAV CANADA charges, means a certified aerodrome, or an uncertified aerodrome with air navigation services staffed either by NAV CANADA or by a person acting under the authority of the Minister of National Defence.

**“air navigation services”** means (a) aeronautical communication services, (b) aeronautical information services, (c) aeronautical radio navigation services, (d) air traffic control services, (e) aviation weather services, (f) emergency assistance services, and (g) flight information services, in respect of Canadian airspace or any other airspace in respect of which Canada has responsibility for the provision of air navigation services.

**“apron”** means that part of an aerodrome, other than the manoeuvring area, intended to accommodate the loading and unloading of passengers and cargo; the refueling, servicing, maintenance and parking of aircraft; and any other movement of aircraft, vehicles and pedestrians engaged in services necessary for such purposes.

**“Canadian-controlled airspace”** means Canadian airspace and any other airspace in respect of which Canada has responsibility for the provision of air navigation services, but excluding any Canadian airspace delegated to another ANS provider for the purpose of air navigation services.

**“certified aerodrome”** means an aerodrome for which an airport certificate is issued, requiring the operator to maintain and operate the site in accordance with applicable Transport Canada standards.

**“enroute services”** means air navigation services other than terminal and oceanic services, provided or made available by NAV CANADA or by a person acting under the authority of the Minister of National Defence.

**“flight plan”** means a flight plan within the meaning of regulations made under the Aeronautics Act.

**“government”**, for the purposes of exempting charges for air ambulance flights, means either federal, territorial, provincial or municipal governments or any corporation established by same for the purpose of supplying health services to the public and in which the government is the sole shareholder.

**“great circle distance”** means the *shortest* distance between two points along the surface of a sphere (as opposed to a straight line through the sphere’s interior). Great circles are circles on a sphere whose centres coincide with the centre of the sphere.

**“international communication services (Int’l Comm)”** means services related to air-ground radio frequencies at one or more aeronautical stations, and certain other communications links, provided or made available by NAV CANADA or by a person acting under the authority of the Minister of National Defence, to an aircraft during the course of an international flight, other than a flight between Canada and the continental United States, to obtain communication services.

**“manoeuvring area”** means the part of an aerodrome, other than an apron, that is intended to be used for the takeoffs and landing of aircraft and for the movement of aircraft associated with takeoff and landing.

**“North Atlantic enroute facilities and services (NAT)”** means air navigation services provided or made available by NAV CANADA or a person acting under the authority of the Minister of National Defence, to an aircraft during the course of a flight in the Gander Oceanic Flight Information Region/Control Area (FIR/CTA).

**“oceanic services”** means air navigation services provided or made available by NAV CANADA or by a person acting under the authority of the Minister of National Defence to an aircraft during the course of a flight in the Gander Oceanic FIR/CTA and/or air-ground radio frequencies and certain other communication links provided or made available to an aircraft in the course of an international flight, other than a flight between Canada and the continental United States.

**“operator”**, in relation to an aircraft, includes the person flying or using the aircraft, or causing or permitting the aircraft to fly, be used or be in any place, whether or not the person is present with the aircraft or the owner or hirer.

**“overflight”** means a flight which passes through Canadian controlled airspace, excluding the Gander Oceanic FIR/CTA, which does not land or take off in Canada.

**“owner”**, in respect of an aircraft, includes (a) the person in whose name the aircraft is registered; (b) a person in possession of an aircraft as purchaser under a conditional sale or hire-purchase agreement that reserves to the vendor the title to the aircraft until payment of the

purchase price or the performance of certain conditions; (c) a person in possession of the aircraft as chattel mortgagor under a chattel mortgage; and (d) a person in possession of the aircraft under a bona fide lease or agreement of hire.

**“recreational purposes”**, in respect of an aircraft means an aircraft not used for business purposes, i.e., not used for transportation - for aircraft operator or others - in support of business (including government) related activities, or for any other non-recreational purposes such as aircraft rental.

**“state aircraft”** means an aircraft, other than an aircraft operated for commercial purposes, that is owned and operated by the government of a country or the government of a colony, dependency, province, state, territory or municipality of a country.

**“terminal services”** means air navigation services provided or made available by NAV CANADA or by a person acting under the authority of the Minister of National Defence to an aircraft at or in the vicinity of an airport, excluding overflying the airport, including dedicated arrival/departure control provided by ACC or TCU and aerodrome services including airport advisories and air traffic control from a tower.

**“training flight”** means a flight operation performed exclusively for the purpose of training or testing of a person or persons (e.g., flight crew) to obtain, upgrade or renew a licence, including pilot proficiency checks. For training flight purposes, a flight operation of an aircraft at an airport is limited to the flight activity by that aircraft between taxiing on and taxiing off the aircraft manoeuvring area.














































**“weight”**, in relation to an aircraft, means the maximum permissible take-off weight (MTOW) specified in the aircraft's certificate of airworthiness or in a document referred to in that certificate. For charging purposes, weight is expressed in metric tonnes rounded to the first decimal point.



































































## **APPENDIX B**

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### **AERODROMES SUBJECT TO TERMINAL SERVICES CHARGE**

**NOTE:** Terminal Services Charge applies at aerodromes with staffed NAV CANADA or DND facilities.

Aerodrome	Facility			Reduction	
	Tower	FSS	FIC	65 Km	35 km
Abbotsford					
Boundary Bay					
Brandon					
Calgary Int'l					
Calgary/Springbank					
Campbell River					
Castlegar					
Charlottetown					
Chicoutimi/Saint-Honoré					
Churchill					
Cranbrook					
Deer Lake					
Edmonton City Centre					
Edmonton Int'l					
Edmonton/Villeneuve					
Fort Nelson					
Fort St. John					
Fredericton					
Ft. McMurray					
Gander(IFSS)					
Gatineau					
Grande Prairie					
Halifax					
Hamilton					
High Level					
Îles-de-la-Madeleine					
Inuvik					
Iqaluit					
Kamloops					
Kelowna					
Kenora					













Aerodrome	Facility			Reduction	
	Tower	FSS	FIC	65 Km	35 km
Kingston					
Kitchener/Waterloo					
Kuuujuaq					
La Grande-Rivière					
La Ronge					
Langley					
Lethbridge					
Lloydminster					
London					
Medicine Hat					
Moncton					
Mont-Joli					
Montréal/Dorval					
Montréal/Mirabel					
Montréal/Saint-Hubert					
Nanaimo					
Norman Wells					
North Bay					
Oshawa					
Ottawa					
Peace River					
Penticton					
Pitt Meadows					
Port Hardy					
Prince Albert					
Prince George					
Prince Rupert/Seal Cove					
Québec					
Rankin Inlet					
Red Deer					
Regina					

Aerodrome	Facility			Reduction	
	Tower	FSS	FIC	65 Km	35 km
Rouyn					
Saint John					
Saint-Jean					
Saskatoon					
Sault Ste. Marie					
Sept-Îles					
Sioux Lookout					
Smithers					
St. Catharines					
St. John's					
Sudbury					
Terrace					
Thompson					
Thunder Bay					
Timmins					
Toronto Island City Centre					
Toronto LBPIA					
Toronto/Buttonville					
Val-d'Or					
Vancouver Harbour					
Vancouver Int'l*					
Victoria					
Victoria Harbour					
Wabush					
Whitecourt					
Whitehorse					
Williams Lake					
Windsor					
Winnipeg					
Winnipeg/St. Andrews					
Yellowknife					

\* Charges also apply at the water aerodrome at Vancouver International Airport.

**At aerodromes where flights receive dedicated arrival/departure control services a 65 km enroute distance reduction is provided; the reduction for the other listed aerodromes is 35 km.**

In addition to the aerodromes listed, the Terminal Services Charge applies to departures of civilian aircraft from aerodromes receiving ANS services from DND, including the following:

Aerodrome	Distance Reduction	
	65 km	35 km
Bagotville		
Cold Lake		
Comox		
Edmonton (Namao)		
Gagetown		
Goose Bay		
Greenwood		
Moose Jaw		
Petawawa		
Shearwater		
Trenton		
Valcartier		

**At aerodromes where flights receive dedicated arrival/departure control services a 65 km enroute distance reduction is provided; the reduction for the other listed aerodromes is 35 km.**

This list was updated in November 2013 and is subject to change either through additions or deletions, thus resulting in appropriate changes to the application of charges.



## **APPENDIX C**

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### **EXAMPLES OF MOVEMENT-BASED CHARGES**

**NOTE:** These illustrations are estimates based on typical distances and weights as shown.

## 1. INTERNATIONAL FLIGHT OVERFLYING CANADIAN CONTROLLED AIRSPACE WITH NO LANDING OR TAKE-OFF IN CANADA

### Example: B747- 400 Seattle to London (return)

MTOW = 395.0 metric tonnes

Distance (D) = 3,787 km

### A) OCEANIC CHARGES

NAT = \$ 93.24  
return (x2) = \$ 186.48

Int'l Comm - Data Link<sup>1</sup> = \$ 22.04  
return (x2) = \$ 44.08

<sup>1</sup> If voice, charge is \$58.56 or \$117.12 return.

### B) ENROUTE CHARGE

Weight Factor (W) =  $MTOW^{0.5} = 395.0^{0.5} = 19.87461$   
Rate (R) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 19.87461 \times 3,787 = \$ 2,592.88$   
return (x2) = \$ 5,185.76

### C) TERMINAL SERVICE CHARGE - (NOT APPLICABLE)

---

**TOTAL ANS CHARGES (KSEA - EGLL - KSEA) = \$5,416.32**

## 2. INTERNATIONAL FLIGHT OVERFLYING CANADIAN CONTROLLED AIRSPACE WITH NO LANDING OR TAKE-OFF IN CANADA

### Example: A330-300 New York to Frankfurt (return)

MTOW = 230.0 metric tonnes

Distance (D) = 1,460 km

#### A) OCEANIC CHARGES

NAT = \$ 93.24  
return (x2) = \$ 186.48

Int'l Comm - Data Link<sup>1</sup> = \$ 22.04  
return (x2) = \$ 44.08

<sup>1</sup> If voice, charge is \$58.56 or \$117.12 return.

#### B) ENROUTE CHARGE

Weight Factor (W) =  $MTOW^{0.5}$  =  $230.0^{0.5}$  = 15.16575  
Rate (R) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 15.16575 \times 1,460$  = \$ 762.79  
return (x2) = \$1,525.58

#### C) TERMINAL SERVICE CHARGE - (NOT APPLICABLE)

---

**TOTAL ANS CHARGES (KJFK - EDDF - KJFK) = \$1,756.14**

### 3. INTERNATIONAL FLIGHT WITH TAKE-OFF AND LANDING AT A CANADIAN AIRPORT

**Example: A340-300 - Vancouver to Hong Kong (return)**

MTOW = 275.0 metric tonnes

Distance (**D**) = 915 km

#### A) OCEANIC CHARGES (NOT APPLICABLE)

#### B) ENROUTE CHARGE

Weight Factor (**W**) =  $MTOW^{0.5} = 275.0^{0.5} = 16.58312$

Rate (**R**) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 16.58312 \times (915-65) = \$ 485.60$   
return (x2) = \$ 971.20

#### C) TERMINAL SERVICES CHARGE - VANCOUVER (ON DEPARTURE ONLY)

Weight Factor (**W**) =  $MTOW^{0.8} = 275.0^{0.8} = 89.42648$

Rate (**R**) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 89.42648 = \$2,137.29$

---

**TOTAL ANS CHARGES (CYVR - VHHH - CYVR) = \$3,108.49**

#### 4. INTERNATIONAL FLIGHT WITH TAKE-OFF AND LANDING AT A CANADIAN AIRPORT

##### Example: B777-300 – Montreal to Paris (return)

MTOW = 344.5 metric tonnes

Distance (D) = 1,550 km

##### A) OCEANIC CHARGES

NAT = \$ 93.24  
return (x2) = \$ 186.48

Int'l Comm - Data Link<sup>1</sup> = \$ 22.04  
return (x2) = \$ 44.08

<sup>1</sup> If voice, charge is \$58.56 or \$117.12 return.

##### B) ENROUTE CHARGE

Weight Factor (W) =  $MTOW^{0.5} = 344.5^{0.5} = 18.56071$   
Rate (R) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 18.56071 \times (1,550-65) = \$ 949.53$   
return (x2) = \$1,899.06

##### C) TERMINAL SERVICES CHARGE - MONTREAL (ON DEPARTURE ONLY)

Weight Factor (W) =  $MTOW^{0.8} = 344.5^{0.8} = 107.09061$   
Rate (R) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 107.09061 = \$2,559.47$

---

**TOTAL ANS CHARGES (CYUL - LFPG - CYUL) = \$4,689.09**

## 5. TRANSBORDER FLIGHT

### Example: A320 - Toronto to Los Angeles (return)

MTOW = 75.5 metric tonnes

Distance (**D**) = 220 km

#### A) OCEANIC CHARGES (NOT APPLICABLE)

#### B) ENROUTE CHARGE

Weight Factor (**W**) =  $MTOW^{0.5} = 75.5^{0.5} = 8.68907$

Rate (**R**) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 8.68907 \times (220-65) = \$ 46.40$   
return (x2) = \$ 92.80

#### C) TERMINAL SERVICES CHARGE - TORONTO (ON DEPARTURE ONLY)

Weight Factor (**W**) =  $MTOW^{0.8} = 75.5^{0.8} = 31.79491$

Rate (**R**) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 31.79491 = \$ 759.90$

---

**TOTAL ANS CHARGES (CYYZ - KLAX - CYYZ) = \$ 852.70**

## 6. TRANSBORDER FLIGHT

### Example: Canadair RJ (CRJ2) - Ottawa to Washington (return)

MTOW = 23.1 metric tonnes

Distance (**D**) = 103 km

#### A) OCEANIC CHARGES (NOT APPLICABLE)

#### B) ENROUTE CHARGE

Weight Factor (**W**) =  $MTOW^{0.5} = 23.1^{0.5} = 4.80625$

Rate (**R**) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 4.80625 \times (103-65) = \$ 6.29$   
return (x2) = \$ 12.58

#### C) TERMINAL SERVICES CHARGE - OTTAWA (ON DEPARTURE ONLY)

Weight Factor (**W**) =  $MTOW^{0.8} = 23.1^{0.8} = 12.32791$

Rate (**R**) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 12.32791 = \$ 294.64$

---

**TOTAL ANS CHARGES (CYOW - KDCA - CYOW) = \$ 307.22**

## 7. FLIGHT BETWEEN POINTS IN CANADA

### Example: A319 - Calgary to Vancouver (return)

Weight = 70.0 metric tonnes

Distance (**D**) = 685 km

#### A) OCEANIC CHARGES (NOT APPLICABLE)

#### B) ENROUTE CHARGE

Weight Factor (**W**) =  $MTOW^{0.5} = 70.0^{0.5} = 8.36660$

Rate (**R**) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 8.36660 \times (685-65-65) = \$ 159.97$   
return (x2) = \$ 319.94

#### C) TERMINAL SERVICES CHARGE (CALGARY & VANCOUVER)

Weight Factor (**W**) =  $MTOW^{0.8} = 70.0^{0.8} = 29.92805$

Rate (**R**) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 29.92805 = \$ 715.28$   
return (x2) = \$1,430.56

---

**TOTAL ANS CHARGES (CYYC -CYVR - CYYC) = \$1,750.50**

## 8. FLIGHT BETWEEN POINTS IN CANADA

### Example: B737-700 – Toronto to Winnipeg (return)

Weight = 68.0 metric tonnes

Distance (**D**) = 1,504 km

#### A) OCEANIC CHARGES (NOT APPLICABLE)

#### B) ENROUTE CHARGE

Weight Factor (**W**) =  $MTOW^{0.5} = 68.0^{0.5} = 8.24621$

Rate (**R**) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 8.24621 \times (1,504 - 65 - 65) = \$ 390.33$   
return (x2) = \$ 780.66

#### C) TERMINAL SERVICES CHARGE (TORONTO & WINNIPEG)

Weight Factor (**W**) =  $MTOW^{0.8} = 68.0^{0.8} = 29.24200$

Rate (**R**) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 29.24200 = \$ 698.88$   
return (x2) = \$1,397.76

---

**TOTAL ANS CHARGES (CYYZ - CYWG - CYYZ) = \$2,178.42**

## 9. FLIGHT BETWEEN POINTS IN CANADA

### Example: Embraer 175 - Halifax to St. John's (return)

MTOW = 38.8 metric tonnes

Distance (**D**) = 880 km

#### A) OCEANIC CHARGES (NOT APPLICABLE)

#### B) ENROUTE CHARGE

Weight Factor (**W**) =  $MTOW^{0.5} = 38.8^{0.5} = 6.22896$

Rate (**R**) = \$0.03445

Formula =  $R \times W \times D$   
 $0.03445 \times 6.22896 \times (880-65-35) = \$ 167.38$   
return (x2) = \$ 334.76

#### C) TERMINAL SERVICES CHARGE (HALIFAX & ST. JOHN'S)

Weight Factor (**W**) =  $MTOW^{0.8} = 38.8^{0.8} = 18.66661$

Rate (**R**) = \$23.90

Formula =  $R \times W$   
 $23.90 \times 18.66661 = \$ 446.13$   
return (x2) = \$ 892.26

---

**TOTAL ANS CHARGES (CYHZ - CYYT - CYHZ) = \$1,227.02**

## **APPENDIX D**

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### **TABLE OF CONVERSION**

## Weight Conversion

MTOW (metric tonnes)	WEIGHT <sup>0.5</sup>	WEIGHT <sup>0.8</sup>	MTOW (metric tonnes)	WEIGHT <sup>0.5</sup>	WEIGHT <sup>0.8</sup>
4	2.000	3.031	52	7.211	23.594
5	2.236	3.624	53	7.280	23.956
6	2.449	4.193	54	7.348	24.317
7	2.646	4.743	55	7.416	24.677
8	2.828	5.278	56	7.483	25.035
9	3.000	5.800	57	7.550	25.392
10	3.162	6.310	58	7.616	25.748
11	3.317	6.809	59	7.681	26.102
12	3.464	7.300	60	7.746	26.456
13	3.606	7.783	61	7.810	26.808
14	3.742	8.259	62	7.874	27.159
15	3.873	8.727	63	7.937	27.509
16	4.000	9.190	64	8.000	27.858
17	4.123	9.646	65	8.062	28.205
18	4.243	10.098	66	8.124	28.552
19	4.359	10.544	67	8.185	28.897
20	4.472	10.986	68	8.246	29.242
21	4.583	11.423	69	8.307	29.586
22	4.690	11.856	70	8.367	29.928
23	4.796	12.285	71	8.426	30.270
24	4.899	12.711	72	8.485	30.610
25	5.000	13.133	73	8.544	30.950
26	5.099	13.551	74	8.602	31.289
27	5.196	13.967	75	8.660	31.626
28	5.292	14.379	76	8.718	31.963
29	5.385	14.788	77	8.775	32.299
30	5.477	15.195	78	8.832	32.634
31	5.568	15.599	79	8.888	32.969
32	5.657	16.000	80	8.944	33.302
33	5.745	16.399	81	9.000	33.635
34	5.831	16.795	82	9.055	33.967
35	5.916	17.189	83	9.110	34.298
36	6.000	17.581	84	9.165	34.628
37	6.083	17.971	85	9.220	34.957
38	6.164	18.358	86	9.274	35.286
39	6.245	18.744	87	9.327	35.614
40	6.325	19.127	88	9.381	35.941
41	6.403	19.509	89	9.434	36.267
42	6.481	19.888	90	9.487	36.593
43	6.557	20.266	91	9.539	36.918
44	6.633	20.642	92	9.592	37.242
45	6.708	21.017	93	9.644	37.565
46	6.782	21.390	94	9.695	37.888
47	6.856	21.761	95	9.747	38.210
48	6.928	22.131	96	9.798	38.532
49	7.000	22.499	97	9.849	38.852
50	7.071	22.865	98	9.899	39.172
51	7.141	23.230	99	9.950	39.492

## Weight Conversion

MTOW (metric tonnes)	WEIGHT <sup>0.5</sup>	WEIGHT <sup>0.8</sup>	MTOW (metric tonnes)	WEIGHT <sup>0.5</sup>	WEIGHT <sup>0.8</sup>
100	10.000	39.811	250	15.811	82.861
105	10.247	41.395	260	16.125	85.502
110	10.488	42.965	270	16.432	88.123
115	10.724	44.520	280	16.733	90.725
120	10.954	46.062	290	17.029	93.308
125	11.180	47.591	300	17.321	95.873
130	11.402	49.108	310	17.607	98.421
135	11.619	50.614	320	17.889	100.953
140	11.832	52.108	330	18.166	103.469
145	12.042	53.591	340	18.439	105.970
150	12.247	55.065	350	18.708	108.456
155	12.450	56.528	360	18.974	110.928
160	12.649	57.982	370	19.235	113.387
165	12.845	59.427	380	19.494	115.832
170	13.038	60.864	390	19.748	118.264
175	13.229	62.292	400	20.000	120.684
180	13.416	63.712	425	20.616	126.681
185	13.601	65.123	450	21.213	132.608
190	13.784	66.528	475	21.794	138.470
195	13.964	67.925	500	22.361	144.270
200	14.142	69.314	525	22.913	150.012
210	14.491	72.073	550	23.452	155.701
220	14.832	74.806	575	23.979	161.337
230	15.166	77.514	600	24.495	166.925
240	15.492	80.199			

## Metric Conversion Factors

<u>TO CONVERT</u>	<u>INTO</u>	<u>MULTIPLY BY</u>
<b>Distance</b>		
Nautical Miles	Kilometres	1.852
Statute Miles	Kilometres	1.609344
Kilometres	Nautical Miles	0.539957
Kilometres	Statute Miles	0.62137
<b>Weight</b>		
Lbs. (avoirdupois)	Kilograms	0.453592
Lbs. (avoirdupois)	Metric Tonnes	0.000453592
Kilograms	Lbs.	2.204622
Metric Tonnes	Lbs.	2,204.6220



# **APPENDIX E**

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## **ENROUTE CHARGE AREA**

**(CANADIAN-CONTROLLED AIRSPACE, EXCLUDING GANDER FIR/CTA)**

**Notes:**

1. In the case of flights between points in Canada, great circle distance between the departure and arrival airports is used in distance calculations, regardless of whether the flight transits U.S. airspace.
2. This appendix was last revised May 1, 2006.

The purpose of this Appendix is to provide customers with information regarding the boundary for NAV CANADA's enroute charge area. The table below describes the boundary by way of a series of points with latitude and longitude expressed in degrees, minutes and seconds. The visual depiction that follows is constructed based on a polygon that is defined by the linear interpolation of latitude and longitude data.

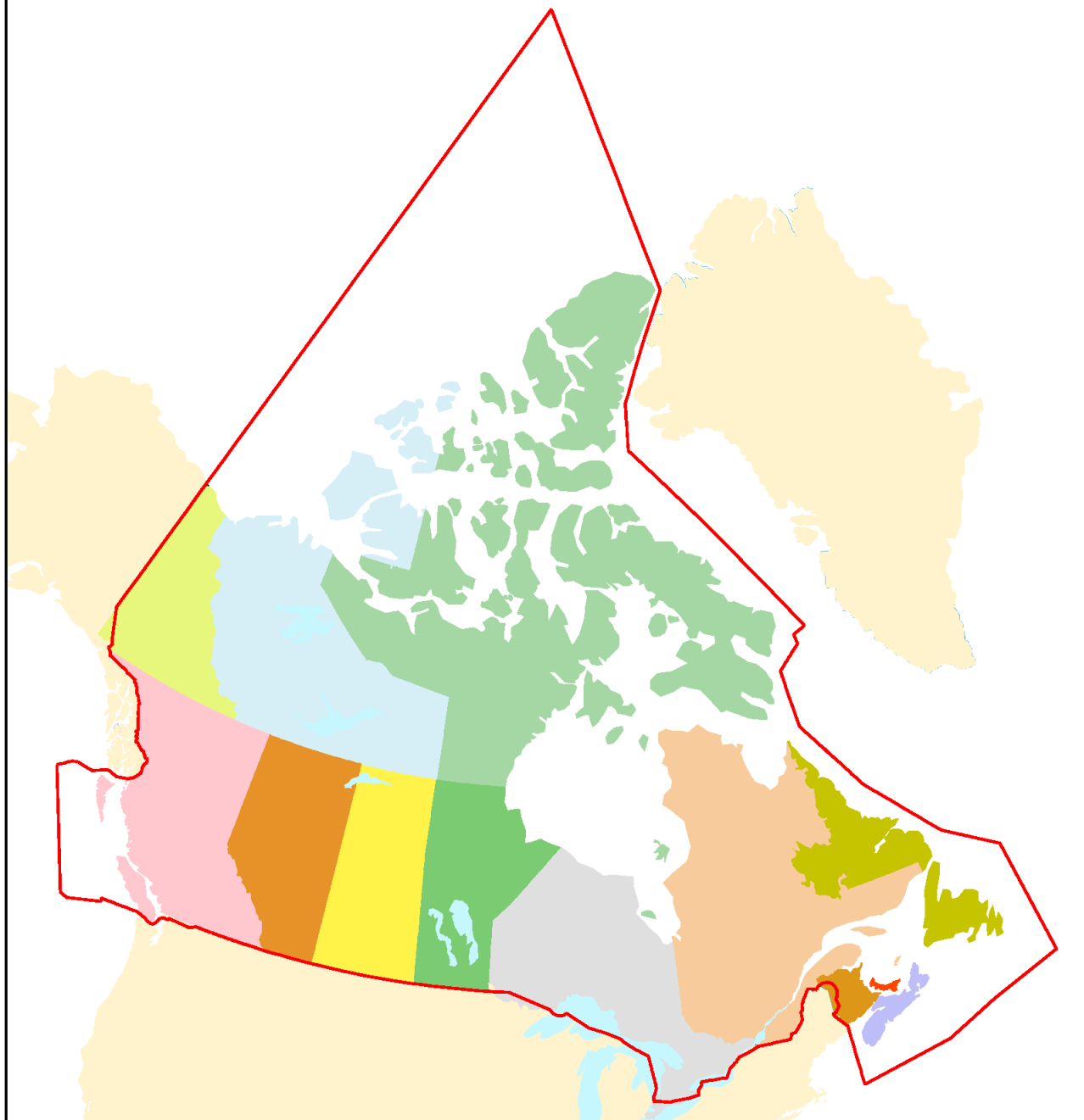
<b>NAV CANADA Enroute Charge Area</b>			
IDENT	Latitude	Longitude	Comments
1	90:00:00.00	60:00:00.00	W060°00'00.00" Geographic North Pole to
2	82:00:00.00	60:00:00.00	
3	78:00:00.00	75:00:00.00	
4	76:00:00.00	76:00:00.00	
5	65:42:36.00	58:23:56.00	
6	65:30:00.00	60:00:00.00	
7	65:00:00.00	60:00:00.00	
8	64:00:00.00	63:00:00.00	
9	61:00:00.00	63:00:00.00	
10	57:00:00.00	59:00:00.00	
11	53:05:00.00	54:05:00.00	CARPE (intersection)
12	51:00:00.00	50:00:00.00	
13	45:00:00.00	50:00:00.00	
14	44:30:00.00	50:00:00.00	
15	43:35:00.00	55:45:00.00	
16	42:30:00.00	60:00:00.00	FOCUS (intersection)
17	41:37:00.00	67:00:00.00	
18	41:52:00.00	67:00:00.00	
19	44:30:00.00	67:00:00.00	
20	44:56:00.00	67:00:00.00	
21	45:37:30.00	67:46:30.00	
22	45:47:00.00	67:48:17.00	
23	45:49:30.00	67:35:00.00	
24	46:08:35.00	67:13:00.00	
25	46:32:08.00	67:17:59.00	thence counterclockwise along a 40 statute miles arc centered on N46 57 05 W67 53 10 to
26	47:17:15.00	68:34:36.00	
27	47:23:35.00	69:00:00.00	
28	47:27:35.00	69:13:28.00	thence along the Can/USA boundary to
29	46:25:00.00	70:03:30.00	
30	46:18:30.00	70:12:30.00	
31	45:54:30.00	70:15:00.00	
32	45:41:10.00	70:30:10.00	
33	45:19:00.00	71:00:00.00	
34	45:17:00.00	71:20:10.00	
35	45:01:00.00	71:29:00.00	thence westerly along the Can/USA boundary to

IDENT	Latitude	Longitude	Comments
36	45:00:10.672	74:04:03.60	
37	44:59:30.00	74:07:18.00	
38	44:58:35.00	74:11:40.00	
39	44:51:00.00	74:34:00.00	
40	44:36:30.00	75:38:00.00	
41	44:36:11.255	75:39:20.68	thence westerly along the Can/USA boundary to
42	43:36:37.00	78:45:00.00	
43	43:26:00.00	78:45:00.00	
44	43:11:52.00	79:01:28.00	
45	43:04:21.00	79:02:25.00	
46	42:57:00.00	79:03:30.00	
47	42:50:10.00	79:50:40.00	
48	42:46:45.00	80:53:45.00	
49	42:44:30.00	81:13:15.00	
50	42:49:45.00	81:58:15.00	
51	42:52:15.00	82:28:00.00	thence westerly along the Can/USA boundary to
52	45:49:00.00	83:35:00.00	
53	46:15:00.00	84:21:30.00	
54	46:23:00.00	84:32:00.00	
55	46:45:00.00	85:38:00.00	
56	47:05:00.00	87:00:00.00	
57	47:54:30.00	88:46:30.00	thence clockwise along a 35 mile arc centered on N48 22 00 W89 19 00 to
58	48:06:30.00	90:06:00.00	
59	49:00:00.00	93:30:00.00	
60	49:00:00.00	94:43:35.00	
61	49:00:00.00	95:09:12.00	thence westerly along the Can/USA boundary to
62	49:00:00.00	120:00:00.00	
63	48:50:06.00	120:05:24.00	
64	48:50:49.00	120:42:55.00	
65	48:51:42.00	122:16:59.00	
66	48:47:25.00	122:17:00.00	
67	48:47:25.00	122:46:13.00	
68	48:43:25.00	122:52:00.00	
69	48:38:30.00	123:01:30.00	
70	48:25:24.00	123:06:51.00	
71	48:25:19.29	123:06:54.70	thence westerly along the Can/USA boundary to
72	48:30:00.00	125:00:00.00	
73	48:20:00.00	128:00:00.00	DOLFF (intersection)
74	48:10:00.00	127:55:30.00	
75	47:30:00.00	130:30:00.00	
76	47:35:00.00	131:10:00.00	
77	53:22:03.00	137:00:00.00	

IDENT	Latitude	Longitude	Comments
78	54:00:00.00	136:00:00.00	KATCH (intersection)
79	54:06:30.00	135:27:00.00	
80	54:06:30.00	134:00:00.00	
81	54:35:00.00	132:50:00.00	
82	54:29:30.00	131:48:00.00	
83	54:42:30.00	130:36:30.00	thence along the Can/USA boundary to
84	59:23:15.00	134:59:17.00	
85	59:31:47.00	136:14:13.00	
86	59:46:08.00	138:37:28.00	thence along the Can/USA boundary to
87	60:21:00.00	139:11:00.00	
88	62:00:00.00	141:00:00.00	
89	69:39:00.00	141:00:00.00	
90	90:00:00.00	60:00:00.00	point of beginning

# ENROUTE CHARGE AREA

(not to be used for navigational purposes)



**NOTES:**





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S E R V I N G   A   W O R L D   I N   M O T I O N

