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DETAILS AND PRINCIPLES REGARDING PROPOSED REVISED SERVICE CHARGES

MAY 2018

GENERAL

This document (Details and Principles) provides additional details to expand upon the *Notice of Revised Service Charges* dated May 2018 (the Notice). Under Section 36 of the *Civil Air Navigation Services Commercialization Act*, S.C. 1996, c. 20 (the ANS Act), NAV CANADA is required to produce a document containing more details in relation to the proposed revised charges set forth in the Notice, including a justification in relation to the charging principles set out in Section 35 of the ANS Act.

Except for the revisions proposed in the Notice, all the existing charges and related terms and conditions, as set out in earlier Announcements pertaining to charges, remain in effect.

This document sets out the following: (1) a general overview of NAV CANADA, (2) traffic outlook, (3) amounts to recover, (4) customer service charge rate analysis, (5) additional detail regarding proposed changes to terms and conditions, (6) a justification of the proposal in relation to the charging principles, and (7) information regarding the Notice and on making representations to NAV CANADA.

Persons interested in making representations in writing to NAV CANADA with regard to the Notice may do so by forwarding their submissions to the address set out in the Notice. Submissions must be received by NAV CANADA no later than July 31, 2018.

1. GENERAL OVERVIEW OF NAV CANADA

NAV CANADA is a non-share capital, private sector corporation which is responsible for the provision of civil air navigation facilities and services for aircraft in Canadian airspace or any other airspace for which Canada is responsible for providing air navigation services.

The system of governance at NAV CANADA is the result of a unique corporate structure intended to make the company a self-sustaining commercial enterprise. The Corporation is governed by a 15-member Board of Directors (the Board) consisting of 10 directors elected by stakeholders representing aviation users, bargaining agents and the federal government, four independent directors and the President & CEO. NAV CANADA also has an Advisory Committee elected by associates, empowered to analyze and make reports and recommendations to the Board on any matter affecting the air navigation system.

The fundamental elements governing the mandate conferred on NAV CANADA by the ANS Act include the exclusive right to provide certain air navigation services, the exclusive ability to set and collect charges for air navigation services provided or made available by NAV CANADA or a person acting under the authority of the Minister of National Defence, and the obligation of the Corporation to provide these services.

When establishing a new charge for air navigation services or revising an existing charge, the Corporation must follow the charging principles set out in the ANS Act. These principles prescribe that, among other things, charges must not be set 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. Pursuant to the charging principles, the Board approves the amount and timing of changes to customer service charges. The Board also approves the Corporation's annual budget where the amounts to be recovered through customer service charges for the ensuing year are determined. The Corporation plans its operations to result in an annual financial breakeven position after recording adjustments to the Rate Stabilization Account, which is discussed below.

The financial statements and Management's Discussion and Analysis (MD&A), issued quarterly and annually, and the Annual Information Form provide extensive information on the revenues and expenses of NAV CANADA. These documents are available electronically at www.navcanada.ca.

2. TRAFFIC OUTLOOK

In developing the outlook for air traffic, the primary sources of information considered are airline schedules as reported in the Official Airline Guide, a time series analysis of historical weighted charging units (WCUs), forecasts of macro-economic indicators, and available passenger and/or aircraft movement forecasts, such as from IATA, FAA and Eurocontrol. The forecast for 2018 reflects actual traffic results up to March and a forecast for the remainder of the fiscal year. NAV CANADA's fiscal year runs from September 1 to August 31.

The following table presents the Company's traffic growth assumptions. Overall, the year-over-year traffic growth forecasts for fiscal 2018 and fiscal 2019 are 4.7% and 4.0%, respectively.

	Forecast	Preliminary Budget
Charge	FY 2018	FY 2019
Terminal	2.5%	2.4%
Enroute	5.6%	4.9%
Overflight	6.4%	4.8%
NAT	4.6%	5.9%
Int'l Com	3.9%	5.3%
Daily	5.6%	3.8%
Weighted	4.7%	4.0%

3. AMOUNTS TO RECOVER

Fiscal 2019 Amounts to Recover from Customers

Total amounts to recover in fiscal 2019 are expected to be \$1,456 million. The amounts to recover from ANS user charges are less than this, as other revenues are taken into account, consistent with the requirements of the ANS Act. The Company anticipates other revenues of \$39 million in fiscal 2019 from technology sales, its NAV CENTRE and other sources.

The following table sets out the specifics of amounts to recover in fiscal 2019, based on the preliminary budget.

Costs:	\$ Millions
Operating Expenses:	
Salaries, Benefits and Allowances	1,011
Other Operating Expenses less Satellite Surveillance	272
Depreciation and Amortization	156
	1,439
Other Expenses	114
Regulatory Deferrals Excluding RSA	(97)
Total Costs to Recover in Fiscal 2019	1,456 (A)
Other Revenues	39
Increase in Target RSA	(5)
Drawdown of RSA Surplus	15
	49 (B)
Net costs to be recovered	1,407 (A-B)

For fiscal 2019 the Company will not seek to recover in customer service charges any amounts related to the costs of third party provided space based Satellite Surveillance used in controlling domestic airspace. In effect, this will allow the Company and users of aircraft equipped with ADS-B transmitters which operate in domestic and oceanic territories to trial the new technology prior to its introduction into air traffic control operations. Space based surveillance will be formally implemented into air traffic control operations in fiscal 2020.

Rate Stabilization Account

Customer service charges are set based on the Company's financial requirements, which take into account estimated air traffic volumes and planned expenditures. Since actual revenue and expenses will differ from these estimates, methods to accumulate the variances are required so that they may be taken into account when setting future customer service charges. There is also a need to absorb the immediate effect of unpredictable factors – mainly fluctuations in air traffic volumes resulting from unforeseen events. We meet these objectives through a “rate stabilization” mechanism.

The Company performs its rate setting activities with a view to maintaining a target balance in the Rate Stabilization Account (RSA). The target balance is set at 7.5% of total planned annual expenses net of other loss (income), excluding non-recurring items. In the process of determining future customer service charges, if the balance of the RSA is above its target balance and this excess is expected to grow by a material amount, the Corporation adjusts rates appropriately to return the surplus to customers.

The target balance of the RSA in fiscal 2018 is \$104 million, which is 7.5% of budgeted 2018 costs. By the end of fiscal 2018, the Corporation anticipates having an excess balance of approximately \$15 million in the RSA, as shown in the following table. The

\$15 million excess is being returned to customers in fiscal 2019 by reducing the costs to be recovered as shown in section B of the preceding table.

	\$ Millions
Expected RSA Balance August 31, 2018	119
Less Target Balance	104
Expected Surplus	15

4. CUSTOMER SERVICE CHARGE RATE ANALYSIS

As identified in section 3 above, the Corporation proposes to adjust its base rates to recover \$1,407 million in fiscal 2019. There will be no temporary rate adjustment in fiscal 2019 to adjust the balance of the RSA. The return of the RSA surplus is considered in the base rate calculation.

Fiscal 2019 Breakeven Base Rate Calculation

To determine the rate changes required to breakeven in fiscal 2019, by service, the forecast revenues and costs by service are compared.

The amount to be recovered by each service is determined by the allocation of costs to services, i.e., to Terminal, Enroute, NAT and Int'l Com services. The Corporation's cost allocation methodology was developed in 1997, and an allocation exercise occurs every year.

The Company has prepared a calculation based on the fiscal 2019 forecasted costs, to determine the estimated fiscal 2019 costs by service. The forecast revenues at existing base rates are also used in the calculation. Using this information, the percentage change in rates, by service, is calculated. These calculations are presented in the following table.

		Terminal	Enroute	NAT	Comm.	Total
2019	Costs to Recover from ANS Charges	\$ 617,716,900	\$ 738,446,080	\$ 39,680,220	\$ 11,256,800	\$ 1,407,100,000
	Cost Allocation ->	43.90%	52.48%	2.82%	0.80%	100.00%
2019	Total Revenue at Existing Base Rates	\$ 609,033,288	\$ 755,004,962	\$ 37,711,719	\$ 11,053,940	\$ 1,412,803,909
	Shortfall (Surplus)	\$ 8,683,612	-\$ 16,558,882	\$ 1,968,501	\$ 202,860	-\$ 5,703,909
2019	Rate Change Required	1.4%	-2.2%	5.2%	1.8%	-0.4%
	Flat Fees	0.8%				

Note that the rates for the flat charges (Daily, Annual, Quarterly, Annual Minimum and Daily – 7 Specified Airports) change by 83% of the terminal rate change and 17% of the enroute rate change.

Summary of Proposed Rate Revisions

The following table sets out and compares the existing rates and proposed revised base rates.

		Current Rates (FY 2018)			FY 2019 Proposed Rates		
		Base Rates	Adjustment Sep 17 to Aug 18	Net Billed	Proposed Base Rates	% Change VS Existing Base Rates	% Change VS Existing Net Rates
FLIGHT-BASED CHARGES:							
Terminal Charge		\$ 24.02	-\$ 0.10	\$ 23.92	\$ 24.36	1.4%	1.8%
Enroute Charge (including Overflight)		\$ 0.03015	-\$ 0.00013	\$ 0.03002	\$ 0.02949	-2.2%	-1.8%
NAT		\$ 78.90	-\$ 0.33	\$ 78.57	\$ 83.00	5.2%	5.6%
Int'l Com	Data Link	\$ 18.35	-\$ 0.08	\$ 18.27	\$ 18.68	1.8%	2.2%
	Voice	\$ 48.78	-\$ 0.20	\$ 48.58	\$ 49.66	1.8%	2.2%
AIRCRAFT-BASED CHARGES:							
<u>Daily Charges</u>							
Weight Group (in Tonnes)							
Propellers	Over 3.0 to 5.0	\$ 41.20	-\$ 0.16	\$ 41.04	\$ 41.53	0.8%	1.2%
	Over 5.0 to 6.2	\$ 82.41	-\$ 0.33	\$ 82.08	\$ 83.07	0.8%	1.2%
	Over 6.2 to 8.6	\$ 326.70	-\$ 1.31	\$ 325.39	\$ 329.31	0.8%	1.2%
	Over 8.6 to 12.3	\$ 758.37	-\$ 3.03	\$ 755.34	\$ 764.44	0.8%	1.2%
	Over 12.3 to 15.0	\$ 1,130.19	-\$ 4.52	\$ 1,125.67	\$ 1,139.23	0.8%	1.2%
	Over 15.0 to 18.0	\$ 1,357.80	-\$ 5.43	\$ 1,352.37	\$ 1,368.66	0.8%	1.2%
	Over 18.0 to 21.4	\$ 1,830.68	-\$ 7.33	\$ 1,823.35	\$ 1,845.33	0.8%	1.2%
	Over 21.4	\$ 2,375.18	-\$ 9.51	\$ 2,365.67	\$ 2,394.18	0.8%	1.2%
	Maximum for Helicopters	\$ 82.41	-\$ 0.33	\$ 82.08	\$ 83.07	0.8%	1.2%
Jets	Up to 3.0	\$ 156.00	-\$ 0.63	\$ 155.37	\$ 157.25	0.8%	1.2%
	Over 3.0 to 6.2	\$ 201.12	-\$ 0.80	\$ 200.32	\$ 202.73	0.8%	1.2%
	Over 6.2 to 7.5	\$ 326.70	-\$ 1.31	\$ 325.39	\$ 329.31	0.8%	1.2%
<u>Annual Minimum Charges</u>							
Propeller Aircraft over 3.0 Tonnes and Jets		\$ 222.68	-\$ 0.88	\$ 221.80	\$ 224.46	0.8%	1.2%
<u>General Aviation Charges:</u>							
Annual Charge							
	Under 2.0	\$ 66.68	-\$ 0.28	\$ 66.40	\$ 67.20	0.8%	1.2%
	2.0 to 3.0	\$ 222.68	-\$ 0.88	\$ 221.80	\$ 224.44	0.8%	1.2%
Quarterly Charge							
	Under 2.0	\$ 16.67	-\$ 0.07	\$ 16.60	\$ 16.80	0.8%	1.2%
	2.0 to 3.0	\$ 55.67	-\$ 0.22	\$ 55.45	\$ 56.11	0.8%	1.2%
	Daily - Specified 7 Major Airports	\$ 9.81	-\$ 0.04	\$ 9.77	\$ 9.89	0.8%	1.2%
Overall (Weighted Average)						-0.4%	0.0%

5. PRINCIPLES GOVERNING NAV CANADA'S SERVICE CHARGES

The principles governing the establishment of new charges or the revision of existing charges by NAV CANADA are set out in Section 35 of the ANS Act. Each of the principles is presented below in italics, followed by an explanation of how the Notice complies with that particular principle.

- 35 (1) (a) *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;*

The Notice, required under Section 36 of the ANS Act, has been placed on the Internet and sent to aviation associations. On the basis of this information, any person subject to NAV CANADA's charges can calculate the amount that would be payable for a given flight.

- 35 (1) (b) *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;*

For any given flight, NAV CANADA's charges are not structured in such a manner that safety may be affected. For example, any flight involving a jet aircraft of a given weight between two points (e.g., Ottawa and Québec City) is subject to the same Terminal Services Charge and Enroute Charge, regardless of whether the flight is IFR or VFR.

- 35 (1) (c) *Charges for the same services must not differentiate between domestic and international flights of air carriers;*

There is no differentiation in the proposed revised charges between domestic and international flights of air carriers.

- 35 (1) (d) *Charges for the same services must not differentiate among Canadian air carriers or among foreign air carriers;*

There is no differentiation in the proposed revised charges for a flight based on which domestic or foreign carrier provides the flight.

- 35 (1) (e) *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;*

The charges are based on an allocation of costs among the enroute, terminal and oceanic services. The rules for the attribution of costs to

the services were arrived at by considering workloads, statistics based on activity reports, management judgment and ICAO guidelines.

- 35 (1) (f) *Charges in respect of recreational and private aircraft must not be unreasonable or undue;*

The charges reflect the need for recreational and private aircraft to contribute, along with other users, to the costs of operating the Canadian civil air navigation system. NAV CANADA believes the charges are neither unreasonable nor undue.

- 35 (1) (g) *Charges for designated northern or remote services and for services directed to be provided under subsection 24(1) must not be higher than charges for similar services utilized to a similar extent elsewhere in Canada;*

Since NAV CANADA's charges are uniform throughout Canada, northern or remote services are subject to the same charges as services utilized elsewhere in Canada.

- 35 (1) (h) *Charges must be consistent with the international obligations of the Government of Canada; and*

The most relevant international obligations are the Convention on International Civil Aviation of 1944 (the Chicago Convention) and bilateral air services agreements between Canada and other states.

Article 15 of the Chicago Convention deals with charges for air navigation facilities, and establishes the principle that fees charged for the use of airport and air navigation services not be higher for foreign compared to domestic users engaged in similar international air services. The charges comply with Article 15 because: (i) the charges in respect of international air services are not higher for foreign air carriers than they are for Canadian carriers engaged in similar international air services (i.e., the charges do not differentiate according to the flag of the carrier), and (ii) the charges relate to the availability or provision of air navigation services and are not imposed for the right of entry into Canadian airspace.

The charges are also consistent with bilateral air services agreements between Canada and other states.

- 35 (1) (i) *Charges must not be set 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.*

NAV CANADA's charges are set to recover the Corporation's expenses net of other revenues determined in accordance with International Financial Reporting Standards (IFRS) and the costs of complying with certain financial requirements, as described in detail in Subsection 35(5) of the ANS Act.

- 35 (2) *The charging methodology may recognize that the value of the services differs among users.*

NAV CANADA's charging methodology does recognize that the value of the services differs among users, e.g., charges that vary with aircraft weight.

- 35 (3) *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 principle referred to in paragraph (1)(a) is deemed not to have been observed if aircraft weight is taken into account either directly proportionally or greater than directly proportionally.*

The International Communication Services Charges and the North Atlantic Enroute Facilities and Services Charge are levied on a per flight basis and do not take weight into account.

The Enroute and Terminal Services charges take weight into account, but less than proportionally. The Enroute Charge is based on a unit rate multiplied by the square root of aircraft weight multiplied by distance. The Terminal Services Charge is based on a unit rate multiplied by aircraft weight raised to the 0.8 power.

Pursuant to Subsection 35(7), Subsection 35(3) does not apply to flat fees. The Annual, Quarterly and Daily Charges represent flat fees.

- 35 (4) *For the purpose of subsection (3), "weight", in relation to an aircraft, means the maximum permissible take-off weight specified in the aircraft's certificate of airworthiness or in a document referred to in that certificate.*

Weight calculations are based on the maximum permissible take-off weight specified in the aircraft's certificate of airworthiness or in a document referred to in that certificate. For more information, please refer to the September 1, 2017 *Customer Guide to Charges*.

6. INFORMATION REGARDING THE NOTICE AND ON MAKING REPRESENTATIONS TO NAV CANADA

The Notice and this document are available on-line and a copy may be downloaded from NAV CANADA's Internet site (www.navcanada.ca).

Information on the existing charges is provided in NAV CANADA's announcements on service charges and *Customer Guide to Charges*, which are also posted on the Internet site.

Additional copies of the Details and Principles document may be obtained by contacting NAV CANADA:

In writing: NAV CANADA
P.O. Box 3411, Station "D"
Ottawa, Ontario
CANADA K1P 5L6
Attention: AVP, Customer and Commercial Services

By e-mail: service@navcanada.ca
By facsimile: 1-613-563-3426
By telephone: 1-613-563-5588
1-800-876-4693 (Toll Free North America)

Pursuant to Section 36 of the ANS Act, persons interested in making representations in writing to NAV CANADA with regard to the Notice may do so in writing to the following address:

NAV CANADA
P.O. Box 3411, Station "D"
Ottawa, Ontario
CANADA K1P 5L6
Attention: Director, Rates and Revenue Systems

By facsimile: 1-613-563-5882

Note: Representations must be received by NAV CANADA not later than the close of business on July 31, 2018.

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Caution Concerning Forward-looking Information

This document contains certain statements about NAV CANADA's future expectations. These statements are generally identified by words like "anticipate", "plan", "believe", "intend", "expect", "estimate", "approximate" and the like, as well as future or conditional verbs such as "will", "should", "would" and "could", or negative versions thereof. Because forward-looking statements involve future risks and uncertainties, actual results may be quite different from those expressed or implied in these statements. Examples include geopolitical unrest, terrorist attacks and the threat of terrorist attacks, war, epidemics or pandemics, natural disasters, weather patterns, environmental concerns, cyber security attacks, labour negotiations, arbitrations, workforce recruitment, training and retention, general aviation industry conditions, air traffic levels, the use of telecommunications and ground transportation as alternatives to air travel, capital market and economic conditions, the ability to collect customer service charges and reduce operating costs, the satisfaction of criteria for the remaining Aireon LLC (Aireon) investment tranche, the success of our investment in space-based aircraft surveillance through Aireon, credit losses on investments, changes in

interest rates, changes in laws, tax changes, adverse regulatory developments or proceedings and lawsuits. Some of these risks and uncertainties are explained under "Risk Factors" in our fiscal 2017 AIF. The forward-looking statements contained in this document represent our expectations as of May 28, 2018 and are subject to change after this date. Readers of this document are cautioned not to place undue reliance on any forward-looking statement. We disclaim any intention or obligation to update or revise any forward-looking statements included in this document whether as a result of new information, future events or for any other reason, except as required by applicable securities legislation.