NAV CANADA

DIRECT ROUTE

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NAV CANADA proposes three per cent reduction in service charges

NAV CANADA service charges are slated to go down another three per cent effective September 1, 2007, according to a proposal released for consultation by the Company in mid-April.

The proposed reduction in fees amounts to savings of approximately $37 million annually for the Company's customers.

This will be the second consecutive year that reductions in air navigation service (ANS) charges have been proposed, following a reduction of 1.8 per cent on average that came into effect September 1, 2006, saving customers approximately $22 million annually.

The Company has set a corporate objective of keeping the growth in costs below the rate of growth in traffic, allowing reductions in service charges over the long term.

"This latest reduction demonstrates that our service charges objective is achievable, given recent traffic growth and our continued ability to control costs," said John Crichton, President & CEO.

Broken out on a per flight basis, the three per cent reduction amounts to savings of $103.72 on ANS charges for a B767 operating from Montreal to Vancouver, and $12.65 on a CRJ from Montreal to Halifax.

With the recent proposal NAV CANADA service charges will have grown by only seven per cent overall since they were fully implemented in 1999—an estimated 13 percentage points below the growth in inflation.

Said Crichton: "We know that our customers operate in a highly competitive environment with cost pressures. We are pleased to be in a position to deliver value by providing quality air navigation services that support safe and efficient operations, and by reducing the costs of those services."

For annual and quarterly charges, the proposed reduction will be effective March 1, 2008, the normal date for revisions in the annual fees.

In addition, there will be no change to the new daily charge at the seven major international airports for aircraft weighing three tonnes or less, to be implemented March 1, 2008 as announced in April 2006.

The introduction of Very Light Jets (VLJs) marks the entry of jet aircraft into lower weight categories originally occupied by propeller aircraft. With the expected growth in VLJ traffic the Company also announced a proposal to extend its daily and movement-based charges to jet aircraft weighing three tonnes or less, effective March 1, 2008.

As with all changes to ANS service charges, these proposals are subject to the mandatory notice and consultation period required by legislation. Input received during the consultation period will then be reviewed by the Company's Board of Directors and a decision will be announced sometime in August.

Additional details of NAV CANADA's proposed new and revised service charges are available at **www.navcanada.ca**.

Vancouver area airspace being restructured to improve safety, capacity and efficiency

Reduce complexity to improve safety and increase capacity and efficiency: that is the objective of sweeping changes NAV CANADA will introduce following completion of an Aeronautical Study that examined operations in south-western BC.

The Study was initiated in 2003, to examine what is arguably the most difficult air traffic control environment in Canada, with nine airports in a condensed area, bracketed by ocean and mountains, and a wide mix of aircraft operations.

Area airports, including Vancouver and Abbotsford, are experiencing significant growth in traffic, compounded by an increase in flying school, float plane and helicopter operations.

Air Traffic Controllers at the Vancouver Area Control Centre manage some of the most complex airspace in Canada.

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Urgent need for change

"If we keep the same level of complexity as demand rises, then capacity will be reduced," said Don Henderson, NAV CANADA Manager, Level of Service and Aeronautical Studies. "We have to improve the air traffic system before the airspace gets any busier."

With Vancouver acting as the host city for the Winter Olympic Games in 2010, and the anticipated increases in traffic, the time to simplify the system is now.

It's also important to get the new system design and procedures into place before installation of the Canadian Automated Air Traffic System (CAATS) begins in the Vancouver ACC, scheduled for early 2008.

Controller workload an issue

David Hales, Shift Manager at Vancouver ACC, acted as Project Manager for the development of an intricate series of changes to IFR operations.

He led a team of controllers that began meeting in earnest in April 2006, to propose ways to rebalance and reduce controller workload, increase airport capacity, reduce delays, and improve the safety of aircraft flying into and out of the Terminal Control Area (TCA).

"Controller workload is a function of demand and complexity," he says. "We have had difficulty qualifying controllers in the terminals, due to the complexity of the airspace. Simplified procedures should improve the check-out rate for new controllers and allow us to avoid restrictions related to staff shortages."

New IFR procedures being implemented in May will enable Air Traffic Controllers to increase capacity at the Vancouver International Airport.

Early actions taken

The Aeronautical Study identified some issues that required immediate action. Changes were implemented in May 2005 to address a number of issues.

- Float planes were flying around the edge of the Vancouver control zone at low altitudes, often on conflicting routes. A new 'outer control zone' was established to provide service to that traffic.
- The Boundary Bay control zone also required an expansion to provide more airspace for the Tower controllers to manage their traffic efficiently.
- To address complaints about aircraft noise over the Saanich Peninsula on Vancouver Island, some VFR arrival and departure procedures were altered at Victoria International, and float plane routes were spread out over a larger area.

Key changes to be phased in

Among the additional key changes to be phased in, starting in May 2007, are:

- **Reduce the number of entry points** for aircraft inbound to Vancouver.
- **Redesign arrival procedures** (called Standard Terminal Arrival Routings, or STARs). Incoming aircraft to Vancouver will fly a "downwind approach," in which they fly parallel to the airport before turning onto the final approach. The downwind approach allows for better sequencing and spacing of aircraft and virtually eliminates the need for airborne holds.
- **The new arrivals will all be based on RNAV (area navigation) technology**, which allows the pilot to fly the aircraft on a programmed track to the runway, without the need for radar vectoring from the controller. Eventually, RNAV Standard Instrument Departures (SIDs) will be implemented, reducing workload for the controller and the pilot.
- **Move the ACORD STAR further westward**, to accommodate a downwind entry for IFR traffic flying from the U.S. into Vancouver. Currently, the ACORD STAR routes inbound traffic over Abbotsford and nearby Bellingham, Washington. By moving it slightly to the west, this will provide more space for the sorting of traffic in the compressed Abbotsford-Bellingham area.
- **Re-sectorize Vancouver Terminal into north and south**. Currently, an arrival high controller organizes and sequences traffic from the various entry points prior to transferring control to the arrival low controller. By splitting the terminal airspace into north and south, different sets of controllers will organize and sequence the traffic coming in from the north and the south. Further, their sectors will be split according to North High/North Low and South High/South Low.
- **Redesign IFR arrivals for Victoria International**. Inbound IFR traffic will fly a downwind approach from the north, using RNAV procedures. Whereas the Victoria Terminal complex used to have one controller, there will now be separate controllers handling arrivals and departures. Not only will this reduce the workload of the arrival controller, but it will improve the ability of the Victoria departure controller to better space and deliver traffic into the Vancouver Terminal Control Area (TCA), in turn reducing delays and reducing workload for the Vancouver arrival controller.
- **Expand Abbotsford Control Zone** from 4nm to 5nm radius. With a longer runway at Abbotsford recently completed, a larger control zone is required to allow controllers to efficiently manage traffic.
- **Reconfigure Class F airspace dedicated to flight training**. Some special use areas (CYAs) will be altered due to safety concerns and impact on IFR operations, while more areas will be created to expand dedicated training capacity north of the Fraser River.
- **Provide a two-way flyway for smaller aircraft operating VFR**. Much like a ring road, this will enable pilots to fly around the

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Direct Route

Direct Route is a NAV CANADA publication for customers and others interested in current and future initiatives by Canada's Air Navigation Services Provider.

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Vancouver Terminal Control Area, and get on or off, without having to contact air traffic control. The VFR flyway concept is currently in use at many busy airports in the U.S.

- **Recommend that aircraft flying VFR below 2,500 feet over the Strait of Georgia travel no faster than 160 knots** to enhance the ability of pilots to ensure situational awareness and effectively see and avoid. A notation with the maximum recommended speed will be placed on the VFR terminal area chart.
- **Transponders will become mandatory** for all aircraft in the Abbotsford control zone as of May 10, with Pitt Meadows and Langley following in 2008. Already mandatory at Vancouver, Victoria and Boundary Bay airports, transponders transmit information such as speed and altitude, which enables controllers to better monitor the aircraft and for airlines with onboard collision avoidance systems to detect them.
- **Modify the enroute sectors**. Once changes are implemented in the terminals in May, the next phase will be to split high and low enroute sectors throughout the FIR, to reduce operational complexity and more effectively manage controller workload. Ultimately, there will be a High Level Complex, an Airports Complex (for low level enroute), a Vancouver Terminal Complex, a Victoria Terminal Complex, and a Transition Complex that surrounds the terminals.
- **Negotiate changes to "delegated airspace" with the U.S. Federal Aviation Administration**. The 49th parallel is so close to Vancouver, Abbotsford and Victoria airports, that when planes take off from these airports, they are almost immediately in U.S. airspace. For that reason, the U.S. has delegated this airspace to Canadian control, but under FAA rules. To improve the safety of aircraft flying IFR, NAV CANADA has initiated discussions with the FAA to reclassify delegated airspace within the vicinities of Bellingham, south of Abbotsford, and the San Juan Islands, near Victoria.

Next steps

A series of briefing sessions on the airspace changes are being held with local VFR pilots.

These sessions, which involve operational staff from local towers and flight service stations, are taking place at airports throughout the region. They also offer an opportunity to address pilot practice issues, such as frequency management and phraseology.

A schedule of meetings is available on the NAV CANADA web site at www.navcanada.ca.

Implementation of new arrival routings and associated airspace changes are scheduled to take place on **May 10, 2007**.

In the fall of 2007, there will be a review of the restructured airspace and procedures to assess how well things are working. At that time, a review of VFR routes through the TCA is planned.

Vancouver airspace simulation demonstrates improvements

Simulation has been an integral part of the aeronautical study recently completed on the complex Vancouver airspace.

In the fall of 2006 air traffic controllers from the Vancouver ACC participated in a simulation of the new IFR procedures at the NAV CANADA Simulation Centre in Ottawa.

The simulation showed that the new routings virtually eliminated the need for airborne holds by enabling a higher arrival capacity at Vancouver International.

Compared with a maximum arrival capacity of between 32 to 48 aircraft per hour under the current procedures, the new procedures allow for 60-plus aircraft per hour.

"This is a major improvement and we are excited about the increased capacity that the implementation of the new procedures will allow," indicated Margot Spronk, General Manager, Vancouver Flight Information Region.

"Reducing delays for IFR customers has obvious benefits but it is also expected that the new procedures will enable reductions in restrictions on access to the TCA for our VFR customers."

Windsor–Toronto–Montreal airspace study to commence shortly

With the Vancouver airspace study nearing implementation, NAV CANADA is moving its focus to opportunities to improve efficiency in the busy Windsor-Toronto-Montreal corridor.

A study is being launched this spring that will examine airspace and associated services throughout the corridor. The study will take a phased approach, with initial focus on operations within the Toronto Terminal Area.

The study is an opportunity to implement, in coordination with customers, a number of changes that will improve efficiency of operations, such as changes to approaches that enable increased use of RNAV technology and provide improved constant descent profiles.

Consultation with stakeholders will occur during the spring and summer.

Some interim changes are planned at Toronto in advance of the study to address safety concerns expressed by Transport Canada regarding VFR and IFR traffic conflicts for aircraft arriving and departing the Toronto / Hamilton area.

As of July 5, 2007 a 65 nm ring of Class E transponder-required airspace centred on the Toronto VOR will be put in place around Toronto above 6,500 feet MSL.

This will reduce the risk of VFR/IFR conflict by ensuring that all VFR aircraft operating above 6,500 feet are visible to controllers for the provision of traffic information. It will also permit all aircraft to be detected by the pilots of aircraft equipped with airborne collision avoidance systems.

Additionally, changes to the VFR charts will be made to show the IFR routes into Hamilton airport so that VFR pilots are aware of the IFR approach paths to Hamilton.

Northern Organized Track System saves time, costs and emissions

Since January 6, 2007, the implementation of organized tracks in the North has been providing air traffic exiting North Atlantic airspace with the most efficient routes to destinations in western North America, based on prevailing winds and other conditions.

Similar to organized tracks on the North Atlantic, in existence for many years, the Northern Organized Track System (OTS) uses airline-generated preferred route messages (PRMs) to create the most operationally beneficial tracks, in terms of time saved and fuel burned.

With traffic levels rising, the Northern OTS operational trial is the latest NAV CANADA initiative to make flying the North more efficient and cost effective for air carriers.

In the first month of the Northern OTS trial, NAV CANADA's National Operations Centre (NOC) reported an average of 40 flights per day using the tracks, with time savings of one – three minutes per flight, or aggregate savings of up to 80 minutes daily.

"Approximately 80 per cent of all traffic from Europe to the west coast of North America is now flying on these tracks, and this number is expected to grow," says David Rose, National Operations Manager at the NOC.

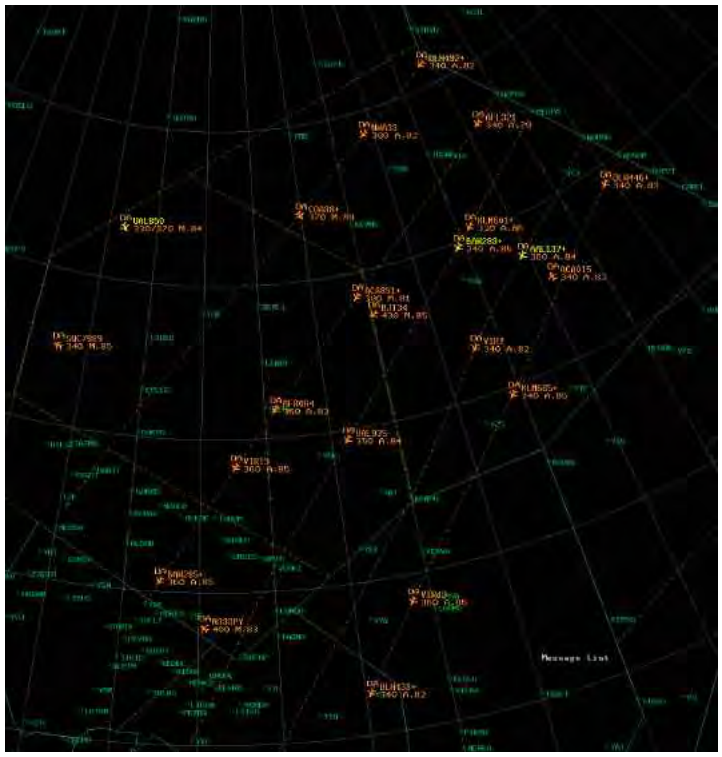
The International Air Transport Association (IATA) has estimated that usage of Northern OTS tracks by westbound NAT (North Atlantic) traffic will save customers a total of US $6 million annually. The fuel savings equate to a reduction of 28 tonnes of CO_2 equivalent annually.

Air Traffic Controllers in the Edmonton Area Control Centre began using an organized track system in January 2007.

In the first month of the trial, there were anywhere from three to seven Northern OTS tracks in use per day.

The tracks begin at the border of the Edmonton and Reykjavik flight information regions, just off the coast of Greenland, and flow in a south-westerly direction until within radar coverage, with waypoints of one or one-half degree of latitude, situated every 10 degrees of longitude.

The NOC determines the location and number of tracks in accordance with lateral separation standards, nominally at 60 nautical miles in Canadian Minimum Navigational Performance Specifications airspace (CMNPS), and reducing to 20 nautical miles in Required Navigational Performance Capability (RNPC) airspace.



A situational display shows a typical layout of the new Northern Organized Track System.

Northern OTS is being gradually phased in to allow customers to become familiar with the procedures. Eventually NAV CANADA intends to expand the tracks to encompass each of the primary traffic flows within the northern portion of the Edmonton FIR and Control Area. Operators will be notified by NOTAM of the Company's intention to introduce new areas.

"We're matching the procedures as closely as possible to those used on the North Atlantic OTS, so that flight crews and dispatch offices will already be familiar with them," says Jim Strukalo, Manager of Operations at the Edmonton Area Control Centre. "The published times for these tracks are synchronized with the North Atlantic traffic flow."

Airline-provided PRMs for the Northern OTS tracks are accepted every day by the NOC until 1800 Zulu time during the summer, and 1900 Zulu time in the winter.

Approximately an hour-and-a-half later, the NOC publishes a set of tracks on the Traffic Density Analyzer web page, for discussion purposes. The Shift Manager on duty at the Edmonton ACC reviews the tracks to ensure that they are well separated and clear of any restricted airspace.

Once they have been approved by customers, they are published as a track definition message (TDM) at approximately 2130 Zulu time in the summer or 2230 in the winter.

"We then load the tracks onto our Integrated Situational Display (ISiT) system at the Edmonton ACC, for the next day's traffic," says Strukalo.

During a recent teleconference of the NOR Tracks Workgroup (which includes representation from carriers, IATA and NAV CANADA), it was generally agreed that one – three minute reductions in flying time were being observed on a consistent basis, reports Dave Rose of the NOC.

There was also agreement that tracks were within one – three minutes of the Minimum Time Track (MTT) on most days. All participants agreed that the Northern OTS has simplified flight planning and has been well received by dispatch personnel. ✈

New tools make North less forbidding

With long periods of darkness, blistering storms or ice fog that materialize with little warning, and runways comparatively few and far between, the Canadian North is one of the world's most difficult regions to fly.

In recent years, infrastructure and technology improvements have made a significant difference to the safety and efficiency of flight in the North, but the environment remains daunting.

Pilots now have access to GPS, but the magnetic pole, the unchanging whiteness of the interior landscape, the rugged coastline, and the extreme cold can still challenge pilots and make visual flying all but impossible.

"It was always a challenge, especially pre-GPS," says Charles Montgomery, a pilot with First Air from 1981-2003. "But even with GPS the most important trait a pilot can have is common sense, to be practical and decisive.

"You have to know when you should do a go-around, for example, if the runway surface doesn't look right. There are too many risks up there, so you have to be able to make a decision and be independent minded."

A VOR located at Rankin Inlet.

Montgomery, former Fleet Chief Pilot at First Air, is now Director, Aeronautical Information Services and Flight Inspection Operations at NAV CANADA. He says that one of the biggest challenges for pilots in the Arctic is flying across a blanket of white tundra with no major features to pinpoint location.

"Instrument flying is needed most of the time but you have to be careful of 'compass drift' caused by the magnetic pole," says Montgomery.

"At the same time the lines of longitude lie so closely together that it is harder to follow your true track changes, and sometimes you could be off by 15-to-20 degrees. You have to be mindful of all these factors to actually go where you want to go."

Don Henderson, Manager, Level of Service and Aeronautical Studies at NAV CANADA, worked for a decade as a captain with Air Inuit, flying Twin Otters and DC-3s throughout the eastern Arctic and as far west as Inuvik.

"The biggest challenges were maintaining schedules and dealing with the shortage of weather information and communications at that time," says Henderson, who was with Air Inuit from the late '70s to late '80s.

"There was very little in the way of communications once you were in the air. So essentially you didn't know what kind of weather was ahead until you got to your destination."

He recalls that flying to mostly coastal communities often meant landing in low visibility on anything that was level—ice, tundra, and, on occasion, a smoky access road leading to a local garbage dump.

New efficiency tools

No matter what era, the arctic environment has routinely affected the operations of Northern air carriers. But recently, technology and innovation have helped to offset some of the biggest efficiency issues.

The development of modern airport infrastructure across the region, coupled with the expansion of navigational aids and technologies such as GPS, and the broadening of crucial communications and weather services, have given pilots enhanced situational awareness and the opportunity to plan ahead, even against fast-changing conditions.

Operators at northern Community Aerodrome Radio Stations (CARS) provide pilots with local weather and airport information.

Henderson has firsthand knowledge of how Northern services have evolved over the past decade. In the 1990s, he headed NAV CANADA's Northern Level of Service Review, which led to the implementation of new technologies and service changes.

A cornerstone of this improved service has been surveillance coverage that began with the installation of six radar systems starting in 2001—a first for Northern Canada.

In 2008, GPS-based Automated Dependent Surveillance-Broadcast (ADS-B), is planned to go operational over the Hudson Bay area, the first time ADS-B will be deployed in the country.

Moreover, the coming implementation of GPS-based approaches at qualified runways will improve safety and efficiency by allowing aircraft to land at many more runways during times of low visibility.

Complementing plans for increased surveillance is the expansion of VHF PAL stations across the region, a major step forward in service that will ensure reliable voice communications between controllers and pilots flying in northern airspace.

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New Vice President, Operations named

Rudy Kellar, incoming Vice President, Operations

Rudy Kellar has been appointed to the position of Vice President, Operations, effective with the retirement of the current Vice President, Operations Kathy Fox on June 30. Kathy is retiring after almost 33 years combined service with Transport Canada and NAV CANADA.

Since October 2005, Rudy has been General Manager, Edmonton Flight Information Region.

Prior to joining NAV CANADA, Rudy was CEO of Air Contractors, a cargo transport airline based in Dublin.

Rudy began his career with Bradley Air Services Ltd. (now First Air) occupying several positions within that company, from Dispatcher in Resolute Bay to Manager, Western Arctic Services.

After a number of years in the North, Rudy moved to Ottawa and progressed through a number of Senior Director positions in Commercial Operations, Marketing and Sales and Charter Sales and Business Development.

Rudy has also served as the Vice Chairman of the Irish Airline Operators Group, the Federation of Aerospace Enterprises, Ireland.

Additionally, Larry Lachance has been named Assistant Vice President, Operational Support, effective June 30. Larry and his team will continue to focus on safety and system performance.

Joe Farrell has also been named Assistant Vice President, Service Delivery, effective June 30. In this role Joe will be responsible for operational delivery in all seven Flight Information Regions (FIRs) with the six GMFIRs reporting to him.

ANS Plan released

The Air Navigation System (ANS) Plan has been updated. The ANS plan describes the products and services that NAV CANADA expects to provide during the next three to five years, and presents an outlook extending beyond fifteen years.

It is also a reference document answering *why* NAV CANADA is undertaking initiatives in response to customers' requirements, *what* those initiatives are, and generally *where* and *when* they will be implemented.

In addition to updating product and service provision initiatives, this year's update includes concepts of future operations for Northern Air Traffic Management and the North Atlantic.

Customers and other stakeholders are strongly encouraged to take some time to review the Company's outlook for the future described in the document.

The ANS Plan is available at **www.navcanada.ca**.

Modernizing Aeronautical Information Services: the migration to aeronautical information management

The Canadian Flight Supplement's new cover marks only the beginning of significant changes to aeronautical publications in order to improve quality and better meet customer needs.

The modernization of the Air Navigation System includes the operation of a modern Aeronautical Information Service (AIS). NAV CANADA's efforts in this regard are well underway.

Traditionally AIS was focused on publishing aeronautical information in a series of paper-based documents, such as the Canada Flight Supplement and Canada Air Pilot. However, these processes don't support our customers' need for accurate digital data.

As a result, NAV CANADA has joined the growing group of Air Navigation Service providers that are directing their efforts to ensure more effective management of aeronautical data.

Aeronautical Information Management (AIM) requires processes that are more data-centric, with digital input and outputs and the use of a single logical data source to create a consistent set of products.

AIS goal

The goal is to improve aeronautical data quality and make it quicker and easier to provide data and products to customers.

By focusing on managing the data, NAV CANADA can support publication of the traditional aeronautical documents and, more importantly, support new product formats. AIM also supports accuracy and the rapid exchange of aeronautical data to other service providers and customers.

The cornerstone of a more efficient AIS operation, streamlined data management and improved product production is an improved AIM database. NAV CANADA recently purchased an industry-leading aeronautical data management system that supports current and future aeronautical data requirements as well as the production of paper-based products.

Migration to the new system is currently underway. As the project proceeds, customers will begin to see changes and improvements to the structure and information contained in some of NAV CANADA's traditional aviation products.

More information on specific changes will be published through Aeronautical Information Circulars and Special Notices.

A Virtual Dispatch Office: using the AWWS effectively

NAV CANADA kiosks provide direct access to the AWWS and NAV CANADA FICs at many airports across Canada.

In recent years the Internet has changed many industries, allowing them to deliver services in easier and more effective ways to their customers.

For NAV CANADA, the power of the Internet has been harnessed to provide all pilots with more convenient flight planning and flight plan filing as a complement to our staffed Flight Information Centres. This is especially useful for general aviation and small and medium-sized operators that don't have the benefits of their own dispatch office.

The features of NAV CANADA's Aviation Weather Web Site (AWWS) can be used to provide the benefits of a virtual dispatch office by allowing customers to access weather information, NOTAM, aeronautical publications and manuals and other information and even file flight plans online from anywhere at anytime.

AWWS has been recently updated so that it is even more user friendly with more updates to come.

To begin, you access the Aviation Weather Web Site, which is organized into five main categories: "My Wx Data/Wx Mail", "Route Data", "Regional Area Data", "Local Data" and the default page "Forecasts and Observations."

All of these functions give the customer more flexibility in retrieving aviation weather information. Additionally, all selection page menu and output pages have been further modified for faster, easier selection and viewing, especially for NOTAM.

"My Wx Data/ Wx Mail"

This feature allows the customer to save frequently flown routes in a personal folder with their own choice of the weather or NOTAM products to be retrieved. Following a simple enrolment and set up, desired products can be received via e-mail on the days and times chosen, or accessed at anytime online without having to re-enter the same routes and product selections.

You can now avoid long waits in front of a fax machine, as well as the requirement to be anywhere near a fax machine. You can receive it at home, on your laptop, in the pilots lounge and coming soon in the cockpit of your aircraft—anywhere with Internet access.

This feature is especially useful for small Air Taxi-Commuter flight operators who generally fly the same routes, but is also used by private pilots for favourite routes.

The NOTAM selection pages now allow customers to select "Weather with NOTAM" or "Weather without NOTAM". If choosing to include NOTAM, an additional menu is automatically displayed.

The output displays all requested NOTAM types on one page, making it easier to consult and print. This also means users can avoid going back and forth between pages.

"Route Data"

Here you can define and save your own routes for subsequent recall and select the type of weather data that you want to view. All selected weather information within 50 nautical miles either side of track will be returned to you.

As with the "My Wx Data/Wx Mail" you will need to register as a user before you can save a route so that the web site will subsequently be able to recognize you and retrieve the data that you have requested. When you log on next you will be able to retrieve your saved routes by going to "My Wx Data."

"Regional Area Data"

The weather information is organized by graphic area forecast coverage area. You can select the type of data that you prefer to view. Weather data for a very large area will be retrieved for you, so be careful about how much of it you select to print.

"Local Data"

The weather information selected will be retrieved for within 50 nautical miles of any aerodrome in the Canada Flight Supplement (CFS) by using this menu selection.

"Forecasts and Observations"

The Forecasts and Observations feature is organized by type of weather product—alphanumeric (text), charts, and imagery.

But now, in addition to the textual weather descriptions, a new "Live RVR" feature shows real-time runway visibility for 28 Canadian airports—a useful tool for aircraft flight dispatchers, flight followers, and pilots, especially for those operating IFR.

Up-to-date colour weather camera images are also accessible here. With the aid of distance and height reference markers, these images provide valuable information to aid in decision making and flight planning.

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Weather Camera images available on the AWWS facilitate flight planning by providing up-to-date colour views of aerodromes. NAV CANADA intends to expand the number of sites with weather cameras significantly during the next few years.

New surveillance technology to improve air traffic safety and customer efficiency

NAV CANADA will be addressing the need for surveillance coverage in the Vancouver Harbour area and at Fort St. John, B.C. with the introduction of multilateration technology. This is the first operational use of multilateration in Canada.

Multilateration, along with ADS-B being implemented in the Hudson Bay area, provide the safety and efficiency benefits of surveillance with a more cost effective technology than the traditional radar.

Wide Area Multilateration is a method of position determination by measuring the time difference of arrival of aircraft transponder signals by at least three ground receivers.

Eleven multilateration receivers will be installed around Vancouver Harbour, to assist air traffic controllers in the Vancouver Area Control Centre and the Harbour Control Tower by allowing them to "see" aircraft in what is often a complex flow of commercial and recreational traffic, especially at low altitudes.

The multilateration system slated for Fort St. John will also provide surveillance of an area where there is no low-level radar coverage today, and which has recently experienced traffic growth due to increased oil and gas exploration.

Eight receivers will be installed around the Fort St. John area, leading to safer and more efficient air traffic control provided by Controllers at the Edmonton Area Control Centre, as well as an extra layer of safety for Flight Service Specialists providing local traffic advisories at the Fort St. John Flight Service Station.

Controllers at the Vancouver Harbour Control Tower will be some of the first in Canada to use multilateration technology for traffic surveillance.

The installation work is being undertaken this summer by Sensis Corporation. NAV CANADA expects to begin providing airspace separation using multilateration beginning early in 2008.

Virtual Dispatch Office
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NAV CANADA intends to significantly expand the network of weather cameras across the country in the coming years. As existing AWOS installations are gradually replaced, new stand-alone AWOS will include weather cameras.

The changes to the AWWS provide pilots with more timely and convenient access to the flight planning services that they want. NAV CANADA is committed to streamlining its web site and making information more accessible to pilots wherever they might be, using whatever technology they may have.

The NAV CANADA Flight Information Centres continue to provide 24/7 access to specialists able to provide tailored interpretive weather briefings.

If you have any suggestions on to how we can improve the web site, please let us know. We are continually working to ensure that it is a convenient one-stop shop for all flying enthusiasts.

Tools make North less forbidding
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NAV CANADA has also over the past decade expanded the use and improved the performance of Community Aerodrome Radio Stations (CARS), which provide pilots with local weather and airport information.

At the same time, the Company is increasing the number of remote communications outlets (RCOs) that provide pilots access to real-time weather and other flight-planning information, along with the consolidation of Arctic Radio services at the North Bay Flight Information Centre.

Other improvements have included the installation of more Automated Weather Observations Systems (AWOS) and Limited Weather Information Systems (LWIS) adding further to the availability of weather information across the Arctic.

"Theses services make for more informed decision making and that means the system is safer and more efficient," says Henderson.

"Where before we used to land on ice and tundra, now you have real airports with real terminal buildings. And that also makes a big difference. We've reached the point where level of service issues are not much different from the South."

New communications and navigation systems have made flying in the North much safer and efficient than just a decade ago. But the Arctic climate and terrain will continue to test pilots who work near the top of the world.

For NAV CANADA pilot Norm Charlebois, who flew 747s for Nationair and worked for a decade with First Air, the sudden extreme changes in weather and the distances between airports were among the most challenging aspects of Northern flying.

"The weather can change very rapidly, and the airports are located far apart which means it's a longer trip to your alternate, with only a few airports in the North having runways big enough to handle a jet," says Charlebois, who once flew to the North Pole three times in a single week.

"Just the extreme cold can make everything a little more difficult. Even the simplest of tasks, such as starting a small gas engine, can be a nightmare when the temperature drops."

Adds Henderson: "Things have improved a lot but it's still a challenging place to fly. You need to do a lot of pre-planning. You have to keep your eye on things, and be a good observer of your environment."