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# **AIP CANADA** (ICAO)

# Aeronautical Information Circulars

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Annexes 4 and 15 of the Convention on International Civil Aviation

# AERONAUTICAL INFORMATION CIRCULAR SUMMARY 5a/19

(Supersedes all previous summaries)

The followaing Aeronautical Information Circulars are in effect:

| | |
|---|---|
| 27/06 | Exemption from Subsection 602.34(2) of the *Canadian Aviation Regulations* |
| 40/12 | Notice of Mandate for Data Link Services in the North Atlantic Region (Supersedes AIC 24/12) |
| 13/15 | Inability of Air Traffic Controllers to Issue Clearances (Replaces AIC 26/13) |
| 23/15 | Recommended Use of ARINC 424 Identifiers for Half-Degree Waypoints in the Gander Oceanic Control Area |
| 25/15 | Gander Flight Information Region (FIR)/Control Area (CTA) Airspace Design Changes for Reduced Lateral Separation Minimum Implementation |
| 1/16 | Pilot Procedures When Intending to Operate an Aircraft Above 250 Knots Indicated Airspeed Below 10,000 Feet Above Sea Level in Canadian Domestic Airspace |
| 11/16 | Depiction of Five-Nautical-Mile Buffers Around Special Use Airspace Contained Within Canadian Flight Information Regions (Supersedes AIC 19/15) |
| 1/17 | Glide Path Fluctuations Caused by Movement of Ground Traffic |
| 4/17 | Requirement to Maintain Listening Watch and Establish Communication When Using Datalink |
| 12/17 | Laser Attacks |
| 18/17 | Tofino/Long Beach Remote Aerodrome—Advisory Service Provision Transfer of Service—Port Hardy Flight Service Station (Replaces AIC 15/17) |
| 19/17 | Obstacle Clearance |
| 29/17 | Aircraft Identification and Automatic Dependent Surveillance-Broadcast Flight Identification |
| 34/17 | Notice of Commencement of Phase 2B of Mandate for Data Link Services in the North Atlantic Region |
| 4/18 | Expansion of Restricted Airspace CYR301 Camp Dundurn, Saskatchewan (Replaces AIC 1/18) |
| 5/18 | Toronto International Lester B. Pearson Airport—Automatic Terminal Information Service Message Changes |
| 8/18 | Decommissioning of the Sept-Îles (ZV) Non-directional Beacon—Sept-Îles, Quebec |
| 17/18 | Instrument Landing System (ILS) Replacement Program (Replaces AIC 16/15) |
| 21/18 | Decommissioning of the Windsor “YQG” VOR/DME—Windsor, Ontario |
| 25/18 | Maximum Indicated Airspeeds for Holding Patterns |
| 26/18 | New Procedures for the Use of a Ground Advisory Frequency at Mirabel (CYMX) and Red Deer (CYQF) Aerodromes (Supersedes AIC 9/18) |
| 28/18 | Toronto/Lester B. Pearson International (CYYZ) New Night-Time Approach Procedures |
| 30/18 | Area Navigation as Primary Approach on Automatic Terminal Information Service (Replaces AIC 13/16) |
| 31/18 | Established on RNP AR (EoR): Implementation at Calgary International Airport (CYYC) |
| 33/18 | Introduction of Charted Communication Failure Missed Approach Procedures for use During Communication Failure |

| | |
|---|---|
| 36/18 | Airport Information Publication Enhancements for Obstacle-Free Environment Certification Level |
| 39/18 | End of Foreign NOTAM Database at Canadian NOTAM Office (NOF) |
| 40/18 | Engine Fan Blade Ice Shedding Procedures—Toronto/Lester B. Pearson International Airport (CYYZ) |
| 4/19 | Change in Hours of Airport Air Traffic Control Services—Winnipeg/St. Andrews, Manitoba (CYAV) |
| 7/19 | Notice of Expansion of ATS Surveillance Services in the Edmonton Flight Information Region (FIR) |
| 8/19 | Revoke Supplemental Instrument Approach Procedures: National |
| 9/19 | Revoke Low Frequency Air Routes: National |
| 10/19 | Revoke the Lines of Circling Minima on Instrument Approach Procedures: National |
| 11/19 | Navigation Aid Modernization (Replaces AIC 6/19) |
| 12/19 | Notice of Amendment to Runway Selection Criteria at Toronto/Lester B. Pearson International Airport (Replaces AIC 5/19) |
| 13/19 | Review of Airspace Classification—Chicoutimi/St-Honoré, Quebec Control Zone |
| 14/19 | Titling of Performance Based Navigation Instrument Approach Procedures |
| 16/19 | Notice of Amendment to Wake Turbulence Separation Standards on Final Approach at Toronto/Lester B. Pearson International Airport (CYYZ) |
| 18/19 | Change in Hours of Air Traffic Services—Wabush, Newfoundland and Labrador (CYWK) |
| 19/19 | Transition to the International Civil Aviation Organization (ICAO) NOTAM Format for All Canadian NOTAMs |
| 20/19 | Decommissioning of the Localizer and Distance Measuring Equipment (LOC/DME)—Chevery, Quebec |
| 21/19 | Decommissioning of the Localizer and Distance Measuring Equipment (LOC/DME)—Roberval, Quebec |
| 22/19 | Notice of Planned Expansion of Satellite Voice Communications Services in Edmonton and Gander Flight Information Regions (Replaces AIC 22/18) |
| 23/19 | New Aircraft Operations Procedures—Red Deer, Alberta |
| 24/19 | Notice to Industry |
| 25/19 | Use of Controller-Pilot Data Link Communications Route Clearance Messages in the Edmonton Flight Information Region |
| 26/19 | Aviation Weather Service—Pickle Lake, Ontario |
| 27/19 | Notice of Mandate to Apply Airport Collaborative Decision Making (A-CDM) Procedures at Toronto/Lester B. Pearson International Airport |
| 28/19 | Expansion of Advanced Surveillance Enhanced Procedural Separation Trial in the Gander Oceanic Control Area (Supersedes AIC 2/19) |
| 29/19 | Visual Approach Expectations |
| 30/19 | Establish New Visual Flight Rules (VFR) Check Point—Vancouver and Victoria, British Columbia |
| 31/19 | Victoriaville (Quebec) Aerodrome—Migratory Bird Activity—September 15 – November 30, 2019 |
| 32/19 | Aviation Weather Service—Buffalo Narrows, Saskatchewan |
| 33/19 | Aviation Weather Service—Island Lake, Manitoba |
| 34/19 | Terminal 1 Apron Transition Line 7S—Toronto International Airport (CYYZ) |
| 35/19 | New Transition Area Airspace—Kamloops, British Columbia |
| 36/19 | NAVAID Modernization Plan—Phase 2 |

# AERONAUTICAL INFORMATION CIRCULAR 36/19

## NAVAID MODERNIZATION PLAN—PHASE 2

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirements for non-directional beacons (NDBs) and very-high frequency (VHF) omnidirectional rangefinders (VORs).

The study concluded that given the comprehensive radar surveillance coverage, and the capabilities of area navigation (RNAV) with global navigation satellite system (GNSS) equipped aircraft, many navigation aids (NAVAIDs) are no longer required and should be decommissioned.

Where a current NAVAID identified in the study serves as an instrument approach aid or anchors an airway segment, NAV CANADA will ensure that an RNAV (GNSS) instrument approach procedure (IAP) or RNAV airway segment is published, where required, before the identified NAVAID is removed.

Implementation is ongoing and will progress for the next several years. The second phase is described below. Subsequent aeronautical information circulars (AICs) will be published for each upcoming phase.

**Phase 2:**

| Indicator | NAVAID Facility Name |
|---|---|
| CN | Cochrane, ON, NDB |
| UWP | Argentia, NL, NDB |
| XBE | Bearskin Lake, ON, NDB |
| YFH | Fort Hope, ON, NDB |
| YJF | Fort Liard, NT, NDB |
| YQ | Churchill, MB, NDB |
| YUB | Tuktoyaktuk, NT, NDB |
| YYU | Kasing (Kapuskasing), ON, NDB |
| ZW | Teslin, YT, NDB |
| TK | Telkwa (Smithers), BC, NDB |
| VG | Vermilion, AB, NDB |
| YD | Smithers, BC, NDB |
| YGO | Gods Lake Narrows, MB, NDB |
| YOP | Rainbow Lake, AB, NDB |
| YSQ | Atlin, BC, NDB |
| YXR | Earlton, ON, NDB |
| ZFM | Fort McPherson, NT, NDB |

**Phase 2 will take effect on 10 October 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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James Ferrier
Director, Aeronautical Information Management

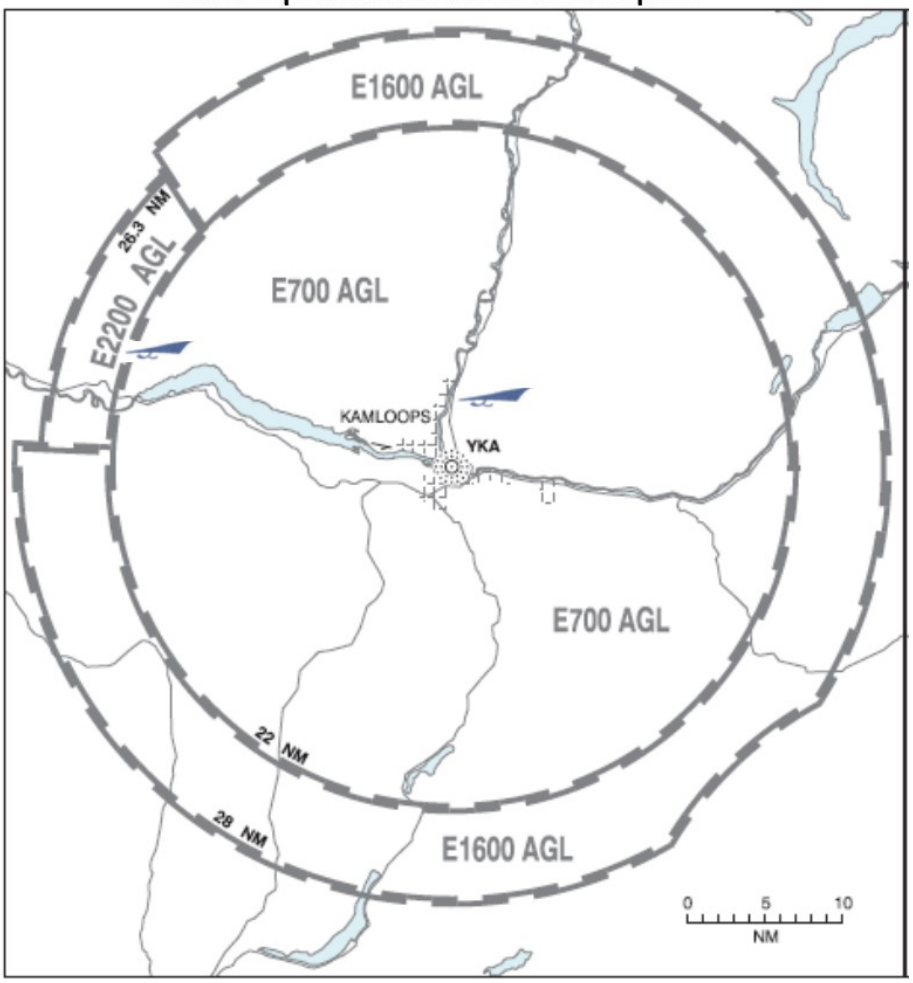
# AERONAUTICAL INFORMATION CIRCULAR 35/19

## NEW TRANSITION AREA AIRSPACE
## KAMLOOPS, BRITISH COLUMBIA

Required navigation performance (RNP) instrument approach procedures (IAPs) have been designed for the Kamloops airport. To ensure that these new IAPs are contained within controlled airspace, the transition area (TA) Class E airspace surrounding the Kamloops airport is being redesigned. To simplify the overall airspace structure, a ”reverse wedding cake” layout was used in the design. With Kamloops 'YKA' NDB as centre, the primary TA consists of two circles of Class E controlled airspace. A 22 nautical mile (NM) radius circle extends upwards from 700 feet altitude above ground level (AGL). A 28 NM radius circle extends upwards from 1,600 fee AGL (see map sketch below).

**The establishment of the new IAPs and TA airspace is planned to take effect 10 October 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended. Refer to AIP Supplement 75/19 until the next edition of the Vancouver visual flight rules (VFR) navigation chart (VNC) AIR 5004 is available in July 2020.

**Kamloops New Transition Area Airspace**




**NOT SUITABLE FOR NAVIGATION**

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# AERONAUTICAL INFORMATION CIRCULAR 34/19

## TERMINAL 1 APRON TRANSITION LINE 7S
## TORONTO INTERNATIONAL AIRPORT (CYYZ)

As per taxi instructions from the Apron Management Unit (AMU), transition line 7S (as illustrated in Figure 1 on the following page), shall be used for guidance to gates 151 and 161A for the following specific aircraft types:

**Gate 151:**

| Aircraft Type | Variant | Approach |
|---|---|---|
| B767 | 200/300/300W/400 | Shall use transition line 7S. |
| B777 | 200/200LR | Shall use transition line 7S. |
| B787 | 8/9 | Shall use transition line 7S. |

**Gate 161A:**

| Aircraft Type | Variant | Approach |
|---|---|---|
| A330 | 300/800/900 | Shall use transition line 7S. |
| B767 | 300 | Shall use transition line 7S. |
| B777 | 200LR | Shall use transition line 7S. |
| B777 | 300ER | Shall use transition line 7S. |
| B787 | 8/9 | Shall use transition line 7S. |

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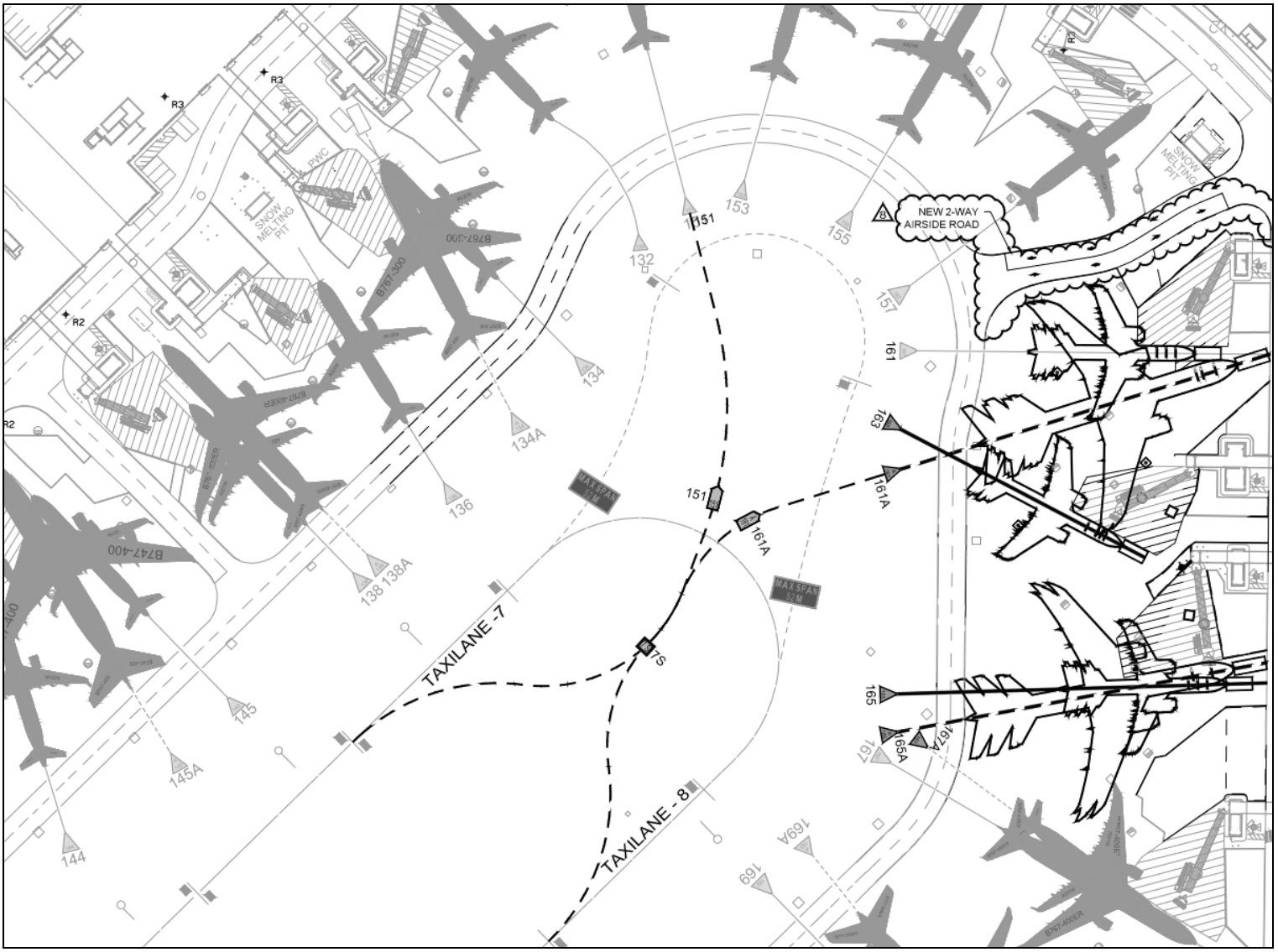


**Figure 1: Transition Line 7S for Gate 151 and Gate 161A from Taxilane 7 and Taxilane 8.**

# AERONAUTICAL INFORMATION CIRCULAR 33/19

## AVIATION WEATHER SERVICE
## ISLAND LAKE, MANITOBA

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirements for the aviation weather service provided at the Island Lake airport.

The study recommended that the contract weather office (CWO) be replaced with a NAV CANADA Automated Weather Observation System (AWOS). The AWOS installation will include a Voice Generator Sub-System (VGSS) and digital aviation weather cameras.

AWOS information will be broadcast via the VGSS on very high frequency (VHF) at 128.100 MHz, and digital weather camera images of the airport and surrounding area will viewable on the NAV CANADA Aviation Weather Web Site (AWWS). This change will provide 24-hour per day aerodrome routine meteorological reports/aerodrome special meteorological reports (METAR/SPECI) and maintain the 24-hour aerodrome forecast (TAF).

**This change will take effect 5 December 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 32/19

## AVIATION WEATHER SERVICE
## BUFFALO NARROWS, SASKATCHEWAN

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirements for the aviation weather service provided at the Buffalo Narrows airport.

The study recommended that the contract weather office (CWO) be replaced with a NAV CANADA Automated Weather Observation System (AWOS). The AWOS installation will include a Voice Generator Sub-System (VGSS) and digital aviation weather cameras.

AWOS information will be broadcast via the VGSS on very high frequency (VHF) at 128.600 MHz and digital weather camera images of the airport and surrounding area will viewable on the NAV CANADA Aviation Weather Web Site (AWWS). This change will provide 24-hour per day aerodrome routine meteorological reports/aerodrome special meteorological reports (METAR/SPECI) and maintain the 14-hour aerodrome forecast (TAF).

**This change will take effect 10 October 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 31/19

## VICTORIAVILLE (QUEBEC) AERODROME
## MIGRATORY BIRD ACTIVITY
## SEPTEMBER 15 – NOVEMBER 30, 2019

The Beaudet reservoir, located approximately 3NM to the South-West of the Victoriaville aerodrome and just South of the extended runway centerline, attracts a large number of Canada Geese and Snow Geese (White Geese) during the migratory season which is approximately from mid-September to the end of November.

Aircraft flying in proximity to the Beaudet reservoir, at low altitude, may cause a large number of geese to fly off and create a hazard their own aircraft as well as to others in the area.

To ensure aviation safety in the area, we highly recommended that all pilots avoid flying in proximity to the Beaudet reservoir below 2000 AGL, and fly no lower than the altitude required for take-off or landing at the aerodrome.


Bernard Fortin
Associate Director, Operations
Civil Aviation – NAH
Transport Canada, Quebec Region

# AERONAUTICAL INFORMATION CIRCULAR 30/19

## ESTABLISH NEW VISUAL FLIGHT RULES (VFR) CHECK POINT VANCOUVER AND VICTORIA, BRITISH COLUMBIA

In order to improve the de-confliction of visual flight rules (VFR) fixed wing operations and instrument flight rules (IFR) rotary wing operations, floatplanes between Vancouver Harbour Water Aerodrome (CYHC) and Victoria Harbour Water Aerodrome (CYWH), are asked to program a new VFR check point near Sturdies Bay, British Columbia.

| | | |
|---|---|---|
| STRDY | 48° 55.7' N 123° 20.3' W | 48° 55' 40" N 123° 20' 19" W |

When required, operators will be routed to STRDY by Vancouver Tower on frequency 125.65 MHz and 124.02 MHz.

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 29/19

## VISUAL APPROACH EXPECTATIONS

### Purpose of the Circular

This circular is to provide clarity to both pilots and air traffic services (ATS) on visual approach procedures to harmonize expectations.

### Background

The use of visual approaches can increase airport throughput and capacity, and permits aircraft to manage their lateral and vertical flight profiles to the runway.

The following aligns NAV CANADA direction to air traffic controllers (ATC) and *Transport Canada Aeronautical Information Manual* (TC AIM – TP14371E) guidance information pertaining to visual approaches. Existing guidance is clear except for navigation to final and missed approach expectations. The following information provides further guidance and considerations regarding visual approach and missed approach expectations.

### Weather

When the ceiling is at least 500 feet above the minimum instrument flight rules (IFR) altitude and visibility is 3 nautical miles (NM) or greater, ATC may issue a visual approach clearance.

### Navigation to Final

**Pilots** may anticipate the following methods for visual approach clearances:

- ATC will inform the pilot of the airport or preceding aircraft's position in preparation for a visual approach. The visual approach clearance will be issued following the pilot's confirmation of visual contact with the airport **or** preceding traffic as applicable. If the visual approach clearance includes an instruction to follow the sighted traffic ahead, the pilot will be responsible for wake turbulence separation.
- ATC will issue a visual approach clearance and, as required, supplement with additional instructions such as:
  - Heading assignment:
    - To ensure the aircraft stays separated from preceding or succeeding traffic. ATC will consider the aircraft's altitude and remaining distance to the airport when using this technique.
    - To comply with parallel runway operation rules that require a 30-degree intercept heading to final prior to issuing the visual approach clearance.
  - Final intercept distance and/or altitude to establish separation from traffic under the control tower's responsibility using references to:
    - Published navigational aid (NAVAID)/fix/waypoint;
    - Distance from the runway; and
    - Prominent landmark on the final approach course.

**ATC** may anticipate pilots to navigate to the final approach course by using the following methods depending on the aircraft's altitude and distance from the airport:

- Fly the shortest distance to the airport while complying with ATC and noise abatement restrictions; or
- Use the onboard navigation guidance to follow a lateral profile reflecting any remaining portion of the standard terminal arrival (STAR) and the previously planned published instrument approach procedure. This provides the following benefits:
  - Enhanced aircraft energy management;
  - Predictability;
  - Reduced flight deck workload;
  - Flexibility in meeting stabilized approach criteria; and
  - Adherence to altitude restrictions during nighttime conditions.

As both methods differ in terms of flying distance, it is good airmanship for pilots to advise ATC of the planned flight path, especially if it is likely to be unexpected or unpredictable, such as the widening of the base leg or the inability to shorten the flying distance as anticipated by ATC.

## Missed Approach

**Pilots** should anticipate ATC to issue missed approach instructions when a pilot initiates a go-around. It is understood that the execution of a missed approach maneuver involves critical internal flight deck communications and high pilot workload. If required for planning, pilots may request these instructions in advance of the approach clearance or any time prior to initiating the missed approach. ATC instructions will guide the pilot to:

- Continue flying the issued IFR clearance; or
- Integrate into the airport visual flight rules (VFR) circuit.

Until missed approach instructions are issued, **ATC** should anticipate pilots conducting a go-around from a visual approach to:

- Initially fly runway heading;
- Follow the published missed approach instructions of the instrument approach procedure requested by the pilots and acknowledge by ATC; or
- Follow the published missed approach instructions of the instrument approach procedure advertised on the automatic terminal information service (ATIS).

## Other considerations

- A visual approach is an IFR approach when the aircraft is on an IFR flight plan.
- When cleared for an instrument approach procedure, regardless of the visibility or cloud conditions, at no time does the approach revert to a "visual approach" without a specific ATC clearance.

## Further Information

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# AERONAUTICAL INFORMATION CIRCULAR 28/19

## EXPANSION OF ADVANCED SURVEILLANCE ENHANCED PROCEDURAL SEPARATION TRIAL IN THE GANDER OCEANIC CONTROL AREA

(Supersedes AIC 2/19)

## Introduction

The automatic dependent surveillance – broadcast (ADS-B) service, as facilitated by receivers hosted on satellites, has been expanded into oceanic and remote areas previously limited by ground- based air traffic services (ATS) surveillance systems. This makes it possible to maintain a safe, orderly, and expeditious flow of air traffic using smaller air traffic control separation standards than are required today. Used together with the existing ground based ATS surveillance infrastructure, space-based ADS-B permits uninterrupted ATS surveillance for equipped aircraft before, during, and after entry into the North Atlantic (NAT) Region.

With the anticipated expansion of ADS-B availability into oceanic and remote areas, the International Civil Aviation Organization (ICAO) Separation and Airspace Safety Panel (SASP) was tasked to develop proposals for ADS-B separation minima for implementation in oceanic and remote enroute airspace. The proposed minima (described below) can be used between aircraft meeting the specifications for required navigation performance 4 (RNP 4) and required communication performance (RCP) 240 where ADS-B service is provided and controller-pilot data link communications (CPDLC) are available.

On 28 March 2019, Shanwick, Gander and Santa Maria Oceanic Control Areas (OCAs) commenced a trial implementation of the following longitudinal separations. The ATS surveillance-based procedural longitudinal separation was applied as per the *Procedures for Air Navigation Services – Air Traffic Management* (PANS ATM), Doc 4444 proposal for amendment from the ICAO SASP, as paraphrased below:

*a)* *17* nautical miles (*NM*) *longitudinal separation of aircraft operating on same track or intersecting tracks provided, that the relative angle between the tracks is less than 90 degrees.*

*b)* *14 NM provided the relative angle between the tracks is less than 45 degrees.*

*c)* *Opposite-direction aircraft on reciprocal tracks may be cleared to climb or descend to or through the levels occupied by another aircraft provided that the aircraft have reported by ADS-B having passed each other by 5 NM.*

**On or soon after 10 October 2019**, Shanwick, Gander and Santa Maria OCAs will commence a trial implementation of 19 NM lateral spacing between parallel or non-intersecting tracks. Operators should not anticipate significant changes to track design on 10 October 2019, as air traffic control (ATC) is expected to only apply 19 NM lateral separation between eligible aircraft pairs along random routes.

## Background

The space-based ADS-B system will consist of a constellation of low earth orbit (LEO) satellites hosting ADS-B receivers. A satellite will receive ADS-B data including position, velocity, and altitude from aircraft, which is then routed through other satellites and down-linked to a satellite operations ground station from where it is on-forwarded to Gander and Shanwick. Santa Maria will use the existing ground-based ADS-B system.

There is no change to non-very high frequency (VHF) direct controller-pilot communications (DCPC) infrastructure or procedures using CPDLC, as contained in the *Global Operations Data Link (GOLD) Manual (Doc 10037)*, and *Satellite Voice Operations Manual (Doc 10038)*.

Flight crews are expected to comply with normal non-surveillance procedures, which include position reports via voice or automatic dependent surveillance – contract (ADS-C), squawking code 2000 while traversing the NAT Region, and all other operator-specific procedures currently used.

Application of the ATS surveillance-based separations, where direct controller-pilot VHF voice communications are not available, requires aircraft to meet the specifications for RNP 4, RCP 240 and Required Surveillance Performance (RSP) 180 as annotated by the appropriate designator in the ICAO flight plan.

The existing Future Air Navigation System 1/A (FANS 1/A) infrastructure, including ADS-C waypoint change event contracts, vertical and lateral event contracts and CPDLC confirm assigned route [UM137/DM40], will continue to be utilised to extract intent data (NEXT and NEXT+1) from the aircraft flight management system (FMS) as part of conformance monitoring.

## Qualifications to Participate in the Trial

Eligible flights are those that meet the following requirements:

- reduced vertical separation minimum (RVSM) / high level airspace (HLA) approval
- ADS-B, with dedicated 1,090 megahertz (MHz) out capability
- Aircraft meeting the specifications for RNP 4
- Aircraft meeting the specifications of RCP 240 and RSP 180

ATS systems use Field 10 (Equipment) of the standard ICAO flight plan to identify an aircraft's data link and navigation capabilities. The operator should insert the following items into the ICAO flight plan (as per the 2012 flight plan format) for FANS 1/A or equivalent aircraft:

a) Field 10a (Radio communication, navigation and approach aid equipment and capabilities):

- insert "J5" to indicate CPDLC FANS 1/A satellite communications (SATCOM) (Inmarsat) or "J7" to indicate CPDLC FANS1/A SATCOM (Iridium) data link equipment;
- insert "P2" to indicate RCP 240 approval;

b) Field 10b (Surveillance equipment and capabilities):

- insert "D1" to indicate ADS-C with FANS1/A capabilities; and
- B1 or B2 to indicate ADS-B.

c) Field 18 (Other Information):

- insert the characters "PBN/" followed by "L1" for RNP4 and SUR/RSP180

Operators do not have to apply to be part of the trial. As long as they meet the qualifications above, they will be participants in the trial.

Gander area control centre (ACC) plans the traffic flow based on aircraft equipage as filed in the ICAO flight plan. To avoid last-minute changes to oceanic clearances it is imperative that operators file in accordance with functioning operational equipage.

## Strategic Lateral Offset Procedures

The strategic lateral offset procedures (SLOP), implemented as a standard operating procedure in the NAT Region since 2004, remain unchanged.

## Contingency Procedures

There are significant revisions to the current *ICAO Doc 4444 Contingency Procedures*. Coincident with the separations listed above, Separation and Airspace Safety Panel (SASP) has proposed changes to *ICAO Doc 4444 Contingency Procedures*. These procedures, along with the revised weather deviation procedures, will be included in a revised version of *North Atlantic Operations and Airspace Manual (NAT Doc 007)* for the duration of the trial and until such time as they are published in *ICAO Doc 4444*. The following are the significant changes to the contingency procedures:

- A reduction in the offset distance to 9.3 km (5 NM) (also included for weather deviation).
- A strong recommendation for pilots to consider a descent below the predominant flow of traffic in a parallel track system where the aircraft's diversion path will likely cross adjacent tracks or routes. A descent below flight level (FL) 290 can decrease the likelihood of: conflict with other aircraft, airborne collision avoidance system (ACAS) resolution advisory (RA) events, and delays in obtaining a revised ATC clearance.

## Trial Period

The trial will run until November 2020 or when the PANS ATM, Doc 4444 proposal for amendment from the ICAO SASP is published, whichever is later. It is anticipated that the amendments will become effective on 5 November 2020.

A review will take place and a decision will be made to implement advanced surveillance-enabled procedural separation (ASEPS) on a permanent operational basis.

## Current Version

The current and updated versions of the NAT Operations, NAT Region Update Bulletins, and related project documents are provided on the ICAO European and North Atlantic (EUR/NAT) Office website:

<www.icao.int/eurnat>
EUR/NAT Documents
NAT Documents

## Further Information

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# AERONAUTICAL INFORMATION CIRCULAR 27/19

## NOTICE OF MANDATE TO APPLY AIRPORT COLLABORATIVE DECISION MAKING (A-CDM) PROCEDURES AT TORONTO/LESTER B. PEARSON INTERNATIONAL AIRPORT

### 1.0 Date of Applicability

The airport collaborative decision making (A-CDM) procedures described in this aeronautical information circular (AIC) are applicable as follows:

- A-CDM trials from 1000Z UTC on 16 September 2019
- A-CDM live operations will be advised via an updated AIC.

### 2.0 Introduction

A-CDM is a method for improving the predictability of airport operations, resulting in more efficient use of available resources and a better passenger experience. A-CDM has been in use for some years in Europe and other parts of the world and its benefits have been amply demonstrated. Toronto/Lester B. Pearson International Airport (CYYZ) will be the first airport in North America where a new, even more powerful version of A-CDM will be introduced.

### 3.0 Purpose of the Circular

This AIC outlines the A-CDM procedures to be followed by operators at CYYZ during the A-CDM trials.

Additional information on the details of the A-CDM Project at CYYZ can be found at <http://torontopearson.com/acdm/>.

The A-CDM web portal for operational purposes can be found at <https://acdm.gtaa.com/>.

### 4.0 Background

A-CDM requires the partners involved in the operation of the airport to exchange certain information that meets prescribed levels of quality and timeliness. Furthermore, aircraft operations will be subject to defined A-CDM procedures. Adherence to these procedures is mandatory, unless an exemption applies as described below.

During the trials, A-CDM activation windows will be used. The A-CDM system and procedures will be in full operation during pre-announced periods (the activation windows) during which time partners will use the A-CDM system as intended. This includes the sequencing of departures based on system-generated target start-up approval times (TSATs). The A-CDM “Call Ready” procedure (subsection 9.2.5 and subsection 10.1.11) will also be introduced and will be in effect 24/7 during the entire trial period. Outside of the activation windows, the A-CDM system will be taken off-line to perform necessary enhancements.

The trial activation windows will be announced via the automatic terminal information service (ATIS) broadcast.

Operators and their designated representatives are reminded to make timely arrangements to ensure their ability to comply with the procedures on the date of their applicability.

## 5.0 Definitions

When used in this AIC and in connection with A-CDM generally, the following terms and abbreviations will have the meaning indicated.

| Terms | Definition |
|---|---|
| Appropriate radio frequency | The radio frequency that a flight crew must use to contact the Apron Management Unit (AMU) or other air traffic services (ATS) unit as part of an A-CDM procedure. The name of the unit to contact in particular cases and the radio frequency are published in Attachment 1 to this AIC. |
| Calculated take-off time (CTOT) | The time calculated and issued by NAV CANADA that indicates when an aircraft should be airborne if it is to meet the constraints arising from the applicable Traffic Management Initiatives (TMIs). |
| Commercial air transport operation | An aircraft operation involving the transport of passengers, cargo, or mail for remuneration or hire. |
| Designated representative | A person or organization authorized by an operator to act and perform tasks on its behalf within the constraints of their representation agreement. |
| Estimated off-block time (EOBT) | The estimated time at which the aircraft will start movement associated with departure.<br>**Note:** This is the time shown in Item 13 of the flight plan. |
| Flight crew member | A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period. |
| Flight plan | Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft. |
| General aviation (GA) operation | An aircraft operation other than a commercial air transport operation. GA operation includes business aviation (BA) operation. |
| Ground handler | Organization offering the ground handling services an aircraft needs during the period it is on the ground. |
| HMI | Human Machine Interface |
| Minimum turnaround time (MTTT) | The minimum turnaround time agreed with an operator or ground handler for a specified flight or aircraft type. |
| Operator | The person, organization, or enterprise engaged in or offering to engage in an aircraft operation. |
| Pilot-in-command (PIC) | The pilot designated by the operator, or, in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight. |
| Scheduled off-block time (SOBT) | The time that an aircraft is scheduled to depart from its parking position.<br>**Note:** SOBT is the coordinated airport slot |

| Terms | Definition |
|---|---|
| Target off-block time (TOBT) | The time that an operator or ground handler estimates that an aircraft will be ready, all doors closed, boarding bridge removed, pushback vehicle available and ready to start-up/push- back immediately upon receiving clearance from the AMU.<br>**Note:** TOBT is equivalent to estimated time of departure (ETD) as used by operators and ground handlers. |
| Target start-up approval time (TSAT) | The time at which an aircraft can expect start-up/push back approval. The TSAT may be equal to the TOBT. |
| Target take-off time (TTOT) | The time at which an aircraft is expected to be airborne based on their TSAT and taxi time to the assigned runway. |

## 6.0 Scope of Applicability

The A-CDM procedures are mandatory for all flights operated as commercial air transport or general aviation operations at CYYZ. Helicopters and flights identified by any one of the following designators in Item 18 of their flight plan, or by any other agreed means that may be applicable, are exempt from adhering to the A-CDM procedures:

| | |
|---|---|
| STS/FFR | Fire fighting |
| STS/HEAD | Flight with Head of State status |
| STS/HOSP | Flight on an actual medical mission |
| STS/MEDEVAC | Flight operated for life critical medical emergency evacuation |
| STS/SAR | Flight engaged in a search and rescue mission |
| STS/STATE | Flight engaged in military, customs or police services |
| STS/FLTCK | Aircraft performing NAVAID flight check |

Exemptions are granted based on the type of mission an aircraft is engaged in and not the identity of the operator.

## 7.0 New A-CDM Working Position – Manager of Operations, Airport Flow

A new working position has been established to provide effective support to the A-CDM operation. This working position is established within the organizational structure of the Greater Toronto Airports Authority (GTAA) Integrated Operations Control Centre (IOCC). The position name is Manager of Operations, Airport Flow (MO-AF). It serves as the single point of contact for all A-CDM related matters.

416-776-ACDM (2236)
E-mail: manageroperationsairportflow@gtaa.com

Operators and handling agents may contact MO-AF by phone to obtain guidance in case of urgent operational issues or by email to report a problem and to obtain information on data exchange methods and A-CDM software tool availability.

The operating hours of the MO-AF are 24/7.

## 8.0 The A-CDM Operational Concept

One of the objectives of A-CDM at CYYZ is to make aircraft turnaround more predictable and create an efficient outbound flow of traffic. This is achieved by requiring a reliable and accurate TOBT for each flight. This TOBT is then used to set up an optimal pushback and start-up sequence that considers all applicable constraints, like de-icing and eventual air traffic flow management restrictions.

Operators and their designated representatives are responsible for keeping the TOBT current by providing updates as necessary. Flight crew are responsible for operating the aircraft, taking the TSAT into account. Failure to comply with these responsibilities will result in an operational penalty.

During the trial period, the flight crew procedures are identical to those described for live operations when the A-CDM trial is active. When the trial activation windows are not active, the procedures described for “Call Ready” (subsection 9.2.5 and subsection 10.1.11) are applicable.

More details about the CYYZ A-CDM Operational Concept and the procedures to follow are contained in the Canada A-CDM Operations Manual – YYZ Edition, available from the GTAA. Send a request to a-cdm@gtaa.com or access the manual at <http://torontopearson.com/acdm/>.

## 9.0 A-CDM procedures – Commercial Air Transport Operations

**Note:** For the A-CDM procedures applicable to general aviation / business aviation operations, refer to section 10 of this AIC.

## 9.1 Procedures for Operators and Handling Agents

### 9.1.1 Requirement for All Flights to Have a Current TOBT

The TOBT is used to indicate when the aircraft will be ready to push back and start its engines. The initial TOBT is obtained by the A-CDM system from one of the following sources, in the order of priority shown:

- Estimated time of departure (ETD) provided by an operator via the appropriate communications channel.
- EOBT from the flight plan.
- SOBT from the airport coordinated schedule data held by the GTAA.

### 9.1.2 Preferred Way of Providing the TOBT

Operators are reminded that using the SOBT may result in an inaccurate TOBT. It is therefore highly recommended to explore the options for providing the ETD via the appropriate communications channel. This can be done by contacting the MO-AF at manageroperationsairportflow@gtaa.com.

### 9.1.3 Access to TOBT

The TOBT will be shown and accessible via the A-CDM application and the A-CDM portal as soon as it is set in the A-CDM system.

### 9.1.4 Pre-Departure Sequencing – TSAT Generation

Based on the TOBT, a TSAT is generated by the A-CDM system for every flight. The TSAT is used to indicate the sequence in which aircraft can expect to receive pushback and start-up approval, ensuring an optimal flow of traffic to the assigned runways. An update to the TOBT will always result in the recalculation of the TSAT. However, this may not always result in a different TSAT or position in the sequence for the flight concerned.

Any applicable constraints, like the CTOT, resulting from TMIs, taxi times, and eventual de-icing time are considered in the calculation of the TSAT to ensure that such constraints are always met.

#### 9.1.5 Access to the TSAT

The TSAT will be shown in the A-CDM system via the A-CDM application and the A-CDM web portal as soon as stand and runway information are both available in the A-CDM system.

#### 9.1.6 TSAT Swapping

An operator or handling agent (as applicable) may swap the TSATs between flights of its own operator family if a given flight is delayed or if a reduction of the waiting time for a flight is desirable. Eligible flights are identified as such on the A-CDM system HMI.

#### 9.1.7 The Importance of Updating the TOBT

Operators and ground handlers, as appropriate, are responsible for updating the TOBT if there is a difference of +/- 5 minutes compared to the initial or previously updated TOBT. Operators and ground handlers are reminded that failing to update the TOBT will result in a TSAT that is no longer operationally correct. This, in turn, may cause the flight to be subject to unnecessary delay.

#### 9.1.8 TOBT Update Limitations

The TOBT may be updated as many times as necessary until 10 minutes prior to the TOBT.; Thereafter, only two more updates are possible. Should a third update be necessary, the operator or handling agent must contact the MO-AF (see section 7.0 of this AIC) for further instructions:

#### 9.1.9 Methods for Updating the TOBT

The TOBT may be updated via any of the available systems providing access to it.

### 9.2 Flight Crew Procedures

#### 9.2.1 TOBT and TSAT Delivery Channels

Several channels are provided for the delivery of the TOBT and TSAT to the flight crew. Operators are free to use any available channel. The following channels are initially available:

- Advanced Visual Docking Guidance System (AVDGS), where available.
- Any specific means of communication that may exist between the operator or ground handler and the flight crew. This means of communication may be shared with other operational communications.
- A-CDM web portal.

#### 9.2.2 Access to TOBT

The TOBT will be displayed for the flight crew on all channels as soon as it is set in the A-CDM system.

#### 9.2.3 Access to the TSAT

The TSAT will be displayed for the flight crew on all channels except the AVDGS as soon as it is set in the A-CDM system.

The TSAT will be displayed for the flight crew on the AVDGS as follows:

- 10 minutes before TOBT; or
- 20 minutes before TOBT if the TSAT is 20 minutes or more later than the TOBT (as may be the case due to TMI).

### 9.2.4 A-CDM Related Information on the AVDGS

The information displayed on the AVDGS depends upon the operating mode of the A-CDM system during the trials as follows:

- Traditional Ramp Information Display (e.g., ETD) = A-CDM trial is not running/A-CDM procedures have been suspended.
- TOBT + time or TOBT + time and TSAT + time = A-CDM trial is running.

### 9.2.5 Call Ready Procedure

The flight crew must call the AMU Apron Coordinator on radio frequency 122.875 MHz at TOBT +/- 5 minutes to confirm that the flight is ready as defined for the TOBT and state the location “gate.” Thereafter, the crew must change to the appropriate radio frequency and monitor it for pushback and start-up approval.

If the flight crew fails to call within the specified time window, it will be assumed that the TOBT is no longer valid and the corresponding TSAT will be removed from the sequence. The operator or ground handler needs to provide a new TOBT for a new TSAT to be generated. This may result in a substantial delay for the flight concerned.

### 9.2.6 Procedures for Extended Times Between TOBT and TSAT

The time difference between the TOBT and the TSAT assigned to the flight may be substantial. The standard airport policy is for aircraft to stay at the gate until the assigned TSAT time. In cases where the gate is required for another flight, or on the specific request of the operator or ground handler, the aircraft concerned will be relocated to a waiting area.

### 9.2.7 A-CDM Imposed Waiting Time and On-Time Performance

Traditionally, on-time performance (OTP) is measured by the point in time when the aircraft releases the brakes, ready for movement associated with departure. If an aircraft waits at the stand for its TSAT, the time between TOBT and TSAT might be counted as a departure delay, adversely impacting the operator's OTP. Operators are recommended to implement procedures whereby the time when the flight crew makes the ready call is considered as the reference for OTP and any waiting time after having met the TOBT can be successfully ignored.

### 9.2.8 Pushback / Start-Up Approval

Except as specified in subsection 9.2.10 below, the detailed pushback instructions and start-up approval will be issued on the appropriate radio frequency by the AMU at TSAT +/- 5 minutes without a need for the flight crew to make an additional call.

If the pushback and start-up process does not commence within 2 minutes of the time the approval was issued, the flight crew must call the AMU (North or South Apron) on the appropriate radio frequency, explain the situation, and request guidance on how to proceed. If this call is omitted, it will be assumed that the TSAT is no longer valid and it will be removed from the sequence. The operator or ground handler needs to provide a new TOBT for a new TSAT to be generated. This may result in a substantial delay for the flight concerned.

If the pushback and start-up process is interrupted for any reason after the aircraft has cleared the stand area or if the start-up process is expected to take longer than normal, the flight crew must call the AMU (North or South Apron) on the appropriate radio frequency, explain the situation, and request guidance on how to proceed.

Flight crew are reminded that the actual order of pushback and start-up approval depends on the operational decisions of the AMU and hence a difference may exist between the system generated sequence and the sequence as established by the AMU. However, even after such manual intervention, the applicable constraints, like CTOT, will be fully met also by the modified sequence.

### 9.2.9 Flight Crew Concerns About Meeting Constraints

All functions of the A-CDM system are designed to ensure that applicable constraints, most importantly those resulting from TMI are always fully met. For example, the TSAT is calculated taking all applicable constraints into account and if duly observed by the flight crew, the runway slot (CTOT) allocated to the flight will not be missed.

Nevertheless, if a flight crew estimates that a TSAT assigned to them and their applicable CTOT are not compatible, they should contact their operator or ground handler to resolve the issue via the MO-AF.

### 9.2.10 Procedures for Flights Proceeding via Taxiway K, the new South Fixed Base Operator (FBO), or to/from Vista Cargo and in the Air Canada Hangar Area

The procedures for such flights are identical to those described above, except that they will call the AMU Apron Coordinator and then contact North Ground or South Ground (South FBO) on the appropriate radio frequency (Attachment 1) at TSAT +/- 5 minutes.

During the trial period, when the A-CDM procedure is not active, flight crew must contact North or South Ground right after having called the AMU Apron Coordinator.

### 9.2.11 De-icing Operations

The need for de-icing has a substantial impact on the standard A-CDM procedures, in particular, the extended taxi times needed to account for the duration of the de-icing operation. To ensure that the de-icing needs of individual flights are properly considered, the following additional procedures described in subsection 9.2.12 and subsection 9.2.13 are applicable during de-icing operations.

### 9.2.12 Standard Request for De-icing

A request for de-icing must be transmitted by the flight crew on the clearance delivery frequency. (Attachment 1)

### 9.2.13 Request for De-icing after Clearance Delivery

If the flight crew determines, following clearance delivery, that de-icing is required, they must contact the AMU Apron Coordinator on the applicable radio frequency (Attachment 1) and request de-icing.

## 10.0 General and Business Aviation Operations

| | |
|---|---|
| **Note:** | For the A-CDM procedures applicable to Commercial Air Transport Operations, refer to section 9 of this AIC. |

### 10.1.1 Prior Permission to Operate Required (Reservation)

Operators or their designated representatives of general and business aviation aircraft, must obtain prior permission to operate (reservation) from the GTAA at maximum 72 hours before EOBT, or minimum 60 minutes before EOBT of the planned operation. CYYZ based GA/ BA Tenant Carriers may book up to 30 days prior to EOBT.

Permission or reservation can be obtained at <https://www.yyzaro.com/ocs>.

### 10.1.2 Requirement to Provide TOBT

All general and business aviation flights must have a TOBT. Operators must use the A-CDM portal at <https://acdm.gtaa.com/> to obtain their TOBT.

### 10.1.3 Pre-Departure Sequencing – TSAT Generation

Based on the TOBT, a TSAT is generated by the A-CDM system for every flight. The TSAT is used to indicate the sequence in which aircraft can expect to receive start-up approval, ensuring an optimal flow of traffic to the assigned runways. An update to the TOBT will always result in the recalculation of the TSAT; however, this may not always result in a different position in the sequence for the flight concerned.

Any applicable constraints, like the CTOT resulting from TMI, taxi times, and eventual de-icing time are considered in the calculation of the TSAT, ensuring that such constraints are always met.

### 10.1.4 Access to the TSAT

The TSAT will be shown in the A-CDM web portal as follows:

- 10 minutes before TOBT; or
- 20 minutes before TOBT if the TSAT is 20 minutes or more later than the TOBT (as may be the case due to TMI).

### 10.1.5 The Importance of Updating the TOBT

Operators or their designated representatives are obliged to update the TOBT if there is a difference of +/- 5 minutes compared to the initial or previously updated TOBT. Failing to update the TOBT will result in a TSAT that is no longer operationally correct. This in turn may cause the flight to be subject to unnecessary delay.

### 10.1.6 TOBT Update Limitations

The TOBT may be updated as many times as necessary until 10 minutes prior to the TOBT. Thereafter, only two more updates are possible. Should a third update be necessary, the operator or their designated representative must contact the MO-AF (see section 7.0 of this AIC) for further instructions:

### 10.1.7 Method for Updating the TOBT

The TOBT must be updated by updating the flight plan EOBT or via the A-CDM web portal at <https://acdm.gtaa.com/>.

### 10.1.8 TOBT and TSAT Delivery Channels

Several channels are provided for the delivery of the TOBT and TSAT to the flight crew. Operators are free to use any available channel. The following channels are initially available:

- A-CDM web portal.
- Any specific means of communication that may exist between the operator or their designated representative and the flight crew.
- AVDGS where available.

### 10.1.9 Access to TOBT

The TOBT will be displayed for the flight crew on all channels as soon as it is set in the A-CDM system.

### 10.1.10 Access to the TSAT

The TSAT will be displayed for the flight crew on all channels as follows:

- 10 minutes before TOBT; or
- 20 minutes before TOBT if the TSAT is 20 minutes or more later than the TOBT (as may be the case due to TMI).

### 10.1.11 Call Ready Procedure

The flight crew must call the AMU Apron Coordinator on radio frequency 122.875 MHz at TOBT +/- 5 minutes to confirm that the flight is ready as defined for the TOBT. They must state the location FBO, Taxiway Kilo, Vista Cargo, or Air Canada Hangar area. The Apron Coordinator will advise the TSAT and then instruct the flight crew to change to the appropriate radio frequency. If the flight crew fails to call within the specified time window, it will be assumed that the TOBT is no longer valid and the corresponding TSAT will be removed from the sequence. The operator or their designated representative needs to provide a new TOBT for a new TSAT to be generated. This may result in a substantial delay for the flight concerned.

### 10.1.12 Start-Up Procedures (Skyservice Business Aviation / 3 Bay Hangar Apron)

The start-up procedure must commence at TSAT +/- 5 minutes without a need for the flight crew to make an additional call.

If the start-up process does not commence within 2 minutes of the TSAT time that was issued, the flight crew must call the AMU South Apron on the appropriate radio frequency, explain the situation, and request guidance on how to proceed. If this call is omitted, it will be assumed that the TSAT is no longer valid and it will be removed from the sequence. The operator or their designated representative needs to provide a new TOBT via the A-CDM web portal or via the MO-AF for a new TSAT to be generated. This may result in a substantial delay for the flight concerned.

If the start-up process is interrupted for any reason or if the start-up process is expected to take longer than normal, the flight crew must call the AMU South Apron on the appropriate radio frequency, explain the situation, and request guidance on how to proceed.

Flight crew are reminded that the actual order of start-up approval depends on the operational decisions of the AMU South Apron. Hence, a difference may exist between the system generated sequence and the sequence as established by the AMU South Apron. However, even after such manual intervention, the applicable constraints, like CTOT, will be fully met also by the modified sequence.

### 10.1.13 Procedures for Flights Proceeding via Taxiway K, the new South FBO or to/from Vista Cargo

The procedures for such flights are identical to those described in 10.1.12, with the difference that after calling the AMU Apron Coordinator, they will need to contact North Ground or South Ground (South FBO) at TSAT +/- 5 minutes to obtain taxi instructions. (Attachment 1)

### 10.1.14 Flight Crew Concerns About Meeting Constraints

All functions of the A-CDM system are designed to ensure that applicable constraints, most importantly those resulting from TMI are always fully met. For example, the TSAT is calculated to take all applicable constraints into account. If duly observed by the flight crew, the runway slot (CTOT) allocated to the flight will not be missed.

Nevertheless, if a flight crew estimates that a TSAT assigned to them and their applicable CTOT are not compatible, they should contact their operator or ground handler to resolve the issue via the MO-AF.

### 10.1.15 De-icing Operations

The need for de-icing has a substantial impact on the standard A-CDM procedures, especially the extended taxi times needed to account for the duration of the de-icing operation. To ensure that the de-icing needs of individual flights are properly considered, the following additional procedures described in subsection 10.1.16 and subsection 10.1.17 are applicable during de-icing operations.

### 10.1.16 Standard Request for De-icing

A request for de-icing must be transmitted by the flight crew on the clearance delivery frequency. (Attachment 1)

### 10.1.17 Request for De-icing After Clearance Delivery

If the flight crew determines after clearance delivery that de-icing is required, they must contact the AMU Apron Coordinator (Attachment 1) and request de-icing.

## 11.0 Contingency Operations

If the A-CDM system fails or becomes unreliable, the A-CDM procedures will be suspended. The suspension and eventual restarting of the procedures will be announced via the ATIS broadcast and a NOTAM.

During suspension of the A-CDM procedures, no TOBT and TSAT will be provided. Flight crew report ready when they are ready to push back and start engines as described in subsection 9.2.5 and subsection 10.1.11 and are ready to follow the guidance of the AMU or North/South Ground as appropriate.

## 12.0 Procedures for Aircraft Engaged in the Calibration and Testing of NAVAIDs

The following procedures shall be followed:

- Plan the calibration and test flights for periods of lower demand and undertake timely coordination with CYYZ.
- Obtain permission to operate as prescribed for general aviation aircraft in subsection 10.1.1. The request must cover the test flight as well as the staging flights coming to CYYZ and leaving after the mission is completed.
- The incoming and outgoing staging flights will be considered as any other general aviation operation and all A-CDM procedures shall be applicable.
- In the flight plan of the test flight, insert STS/FLTCH in Item 18.
- On departure for the test flight, follow the “Call Ready” procedure. The flight will not be subject to TSAT sequencing and will be afforded priority commensurate with the testing to be carried out.

## 13.0 Further Information

For further information, please contact the MO-AF at:

Tel. : 416-776-ACDM (2236)
E-mail : manageroperationsairportflow@gtaa.com

James Ferrier
Director, Aeronautical Information Management

**Attachment 1 – List of Radio Frequencies**

| Service | Frequency |
|---|---|
| Tower – Backup | 118.00 MHz |
| Tower – South | 118.350 MHz |
| Tower – North | 118.700 MHz |
| Ground – Centre | 119.100 MHz |
| Ground – North | 121.650 MHz |
| Ground – South | 121.900 MHz |
| AMU South Apron – Terminal 1 from Stand 143 to 272<br>3 Bay Hangar, Esso Avitat Skyservice, and<br>Terminal 1 Hold – H1 to H14 | 122.075 MHz |
| AMU Centre Apron | TBD (Future State) |
| AMU North Apron – Terminal 3 & T-3 Satellite –<br>Terminal 1 from stand 142 to 101, Infield Concourse (IFC) – Cargo West – Fedex | 122.275 MHz |
| AMU Apron – Backup | 122.825 MHz |
| AMU Apron Coordinator | 122.875 MHz |
| Clearance Delivery | 121.300 MHz |

# AERONAUTICAL INFORMATION CIRCULAR 26/19

## AVIATION WEATHER SERVICE
## PICKLE LAKE, ONTARIO

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirements for the aviation weather service provided at the Pickle Lake airport.

The study recommended that the contract weather office (CWO) be replaced with a NAV CANADA Automated Weather Observation System (AWOS). The AWOS installation will include a Voice Generator Sub-System (VGSS) and digital aviation weather cameras.

AWOS information will be broadcast via the VGSS on very high frequency (VHF) frequency 127.675 MHz. Digital weather camera images of the airport and surrounding area will viewable on the NAV CANADA Aviation Weather Web Site (AWWS). This change will provide 24-hour per day aerodrome routine meteorological reports/aerodrome special meteorological reports (METAR/SPECI) and increase the 12-hour aerodrome forecast (TAF) to 24-hour.

This change will take effect **15 August 2019 at 0901Z Coordinated Universal Time (UTC)**. The appropriate aeronautical publications will be amended.

For further information, please contact:

NAV CANADA
Customer Service Centre
77 Metcalfe Street
Ottawa, ON K1P 5L6

Tel.: 800-876-4693
Fax: 877-663-6656
E-mail: service@navcanada.ca

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 25/19

## USE OF CONTROLLER-PILOT DATA LINK COMMUNICATIONS ROUTE CLEARANCE MESSAGES IN THE EDMONTON FLIGHT INFORMATION REGION

### Introduction

Controller-pilot data link communications (CPDLC) has been in use in the Edmonton flight information region (FIR) since 2012. Commencing on or soon after 15 August 2019, the available CPDLC message set will be expanded to include messages containing route clearances. Edmonton air traffic controllers will be able to accept pilot-initiated CPDLC route requests and uplink the appropriate clearance using flight management system-loadable data, thereby reducing readback/hear-back and transposition errors.

### Implementation Plan

Implementation of CPDLC route clearance messages will occur in two phases, each communicated via NOTAM prior to initiation.

**Phase 1 – Pilot-Initiated Route Requests**

Pilots may initiate either of the following route clearance requests:

DM24 REQUEST *[route clearance]*

or

DM59 DIVERTING TO *[position]* VIA *[route clearance]*

Air traffic controllers will respond to a DM24 with one of the following responses, as appropriate:

UM79 CLEARED TO *[position]* VIA *[route clearance]*

or

UM80 CLEARED *[route clearance]*

or

UM83 AT *[position]* CLEARED *[route clearance]*

Pilots are to respond to the route clearance message with any of the following responses:

DM0 WILCO

or

DM1 UNABLE

or

DM2 STANDBY

**Phase 2 – Controller-Initiated Route Clearances**

Air traffic controllers may initiate a route clearance for separation purposes, to avoid restricted airspace or for other operational requirements.

Air traffic controllers may initiate any of the following route clearances:

UM79 CLEARED TO *[position]* VIA *[route clearance]*

or

UM80 CLEARED *[route clearance]*

or

UM83 AT *[position]* CLEARED *[route clearance]*

Pilots are to respond to the route clearance message with any of the following responses:

DM0 WILCO

or

DM1 UNABLE

or

DM2 STANDBY

Implementation of Phase 2 is expected three to four weeks after Phase 1.

## Pilot Procedures

If a clearance is received that can be automatically loaded into the flight management system (FMS), the pilot should load the clearance into the FMS and review it before responding with “DM0 WILCO.”

| | |
|---|---|
| **Note:** | For additional guidance on pilot procedures for uplink messages containing FMS-loadable data, refer to section 4.3.5 of the International Civil Aviation Organization (ICAO) Doc 10037, *Global Operational Data Link (GOLD) Manual*. |

## Route Verification

To mitigate errors associated with pilots failing to promptly load or execute the new route clearances, controllers may verify the new route using automatic dependent surveillance – contract (ADS-C) reports, or by sending “UM137 CONFIRM ASSIGNED ROUTE”. Pilots are to respond to the “UM137 CONFIRM ASSIGNED ROUTE” with “DM40 ASSIGNED ROUTE *[route clearance]*.”

| | |
|---|---|
| **Note:** | Some aircraft are unable to send “DM40 ASSIGNED ROUTE *[route clearance]*” due to system limitations. In this case, pilots should respond with the free text message “UNABLE TO SEND ROUTE.” |

## Contacts

For further information, please contact:

NAV CANADA
77 Metcalfe Street
Ottawa ON  K1P 5L6
Attn: Noel Dwyer, National Manager
Regulation and International Procedures

Tel.: 613-563-7211
E-mail: noel.dwyer@navcanada.ca

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 24/19

## NOTICE TO INDUSTRY

NAV CANADA will be discontinuing the production and distribution of select Aeronautical Publications in print format. Customers will be able to purchase the electronic printable versions of these publications from the NAV CANADA e-commerce store:

<www.navcanada.ca>
Products & Services
Aeronautical Information Products
Online Store

Effective starting on the 5 November 2020 cycle, the paper format of the *Canada Air Pilot* (CAP and CAP GEN) will no longer be available. The last cycle date to purchase a paper subscription will be 10 October 2019. Single sale purchases of paper publications will be available up to, and including, the 10 September 2020 cycle.

This change is consistent with the requirements set out within the *Canadian Aviation Regulations* (CARs) 602.60 1(b), "Requirements for Power-driven Aircraft." This change also supports NAV CANADA's strategic objective to provide value to stakeholders through modernization, reducing costs to customers, increasing the availability and accessibility of aeronautical information, and reducing the impact on the environment.

In addition, NAV CANADA will discontinue the production, in CD format, of the *AIP Canada (ICAO)* CD, Electronic Publications (ePUB) CD, and the *Restricted Canada Air Pilot* (RCAP) CD.

The content currently found on the RCAP CD and the ePUB CD will be available for purchase in electronic format from NAV CANADA's e-commerce store. The *AIP Canada (ICAO)* is available for download at no charge on NAV CANADA's website:

<www.navcanada.ca>
Products & Services
Aeronautical Information Products
AIP Canada (ICAO)

The *Canada Flight Supplement*, the *Canada Water Aerodrome Supplement* large-format charts (Enroute charts, terminal area charts [TAC], and visual flight rules [VFR] charts) will not be impacted by this initiative. Customers can purchase printed products from the e-commerce store, or from authorized vendors. See the list found on the Purchase Information section of the NAV CANADA website:

<www.navcanada.ca>
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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 23/19

## NEW AIRCRAFT OPERATIONS PROCEDURES
## RED DEER, ALBERTA

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the air traffic service (ATS) and airspace requirements for the Red Deer Regional airport. The study concluded that the current airspace structure and level of ATS – flight service station (FSS) – was appropriate.

To enhance safety and efficiency of aircraft operations, additional guidance for pilots will be published as follows:

- Addition of a Common Frequency Area 122.875 MHz within 25 nautical miles (NM) of the Red Deer airport;
- Modification of visual flight rules (VFR) arrival and departure procedures;
- Modification of VFR call up and check points;
- Addition of recommended altitude of 4,500 feet above sea level (ASL) for entering the Red Deer control zone; and
- Addition of designated flight training areas within 25 NM of the Red Deer airport.

This guidance material will be reflected in the new and revised *Canada Flight Supplement* (CFS) Red Deer VFR Terminal Procedures Chart (VTPC).

**These changes will take effect on 20 June 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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James Ferrier
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# AERONAUTICAL INFORMATION CIRCULAR 22/19

## NOTICE OF PLANNED EXPANSION OF SATELLITE VOICE COMMUNICATIONS SERVICES IN EDMONTON AND GANDER FLIGHT INFORMATION REGIONS

(Replaces AIC 22/18)

### Introduction

The Edmonton and Gander area control centres (ACCs) of NAV CANADA have introduced improvements to their voice communications using satellite voice communications (SATVOICE).

This capability will enable appropriately equipped aircraft operating in the Edmonton and Gander flight information regions (FIRs) to dial a single SATVOICE short code for a call to be automatically routed and connected to the air traffic controller responsible for the flight.

Although this service will enhance the suite of communications for controllers and flight crews and is considered a form of direct controller-pilot communications (DCPC), very high frequency (VHF) voice communication, high frequency (HF) communication, or controller-pilot data link communications (CPDLC) will remain the primary method of communications.

### Background

SATVOICE has been available and approved for routine air traffic service (ATS) communications in Canada for approximately 10 years, but technical limitations have restricted the effectiveness of the service provided. These limitations have related mostly to the ground infrastructure and the ability for an aircraft to contact the controller responsible for the flight. Ongoing development by NAV CANADA has evolved the ground system and technology to overcome the experienced limitations.

### Operator Eligibility and Participation

To take full advantage of the opportunities made available by SATVOICE communications, aircraft must be appropriately configured, and the operator subscribed to the appropriate service with either Inmarsat or Iridium.

Additionally, flight crews will need to ensure familiarity with SATVOICE operations within their respective avionics as there could be instances where the air traffic controllers will be using the service for intervention purposes. It is imperative that flight crews recognize an incoming call and react accordingly. Failure to respond to a call will require the air traffic controllers to attempt contact using other methods of communication.

### Use of SATVOICE

SATVOICE is not a replacement for automatic dependent surveillance – contract (ADS-C), CPDLC, VHF, or HF communications, but rather a means of reducing the risk of communications failure, improving the safety of operations, and alleviating HF congestion.

In the Edmonton FIR, SATVOICE calls should be made directly to the ZEG SATVOICE number.

In the Gander Domestic and Oceanic FIRs, SATVOICE calls should be made to Gander international flight service station (IFSS) except in urgent situations, when the call can be made directly to the appropriate air traffic control (ATC) unit.

Refer to the table below for the updated short and long codes for SATVOICE services provided by Edmonton and Gander FIRs.

**Service Limitations North of 72N in Edmonton FIR**

Inmarsat satellite coverage has limitations in the north so flights operating only with Inmarsat equipment may experience unreliability north of 72N.

There is no Inmarsat satellite coverage north of 80N so flights will **not** be able to avail of SATVOICE services in this area using Inmarsat. Iridium SATVOICE services are available north of 80N.

Operators of aircraft that are equipped with both Inmarsat and Iridium modems should ensure that they switch to the Iridium system before operating north of 72N.

## Flight Planning

Operators should ensure the following is contained in the flight plan for aircraft capable of both Air-to-Ground and Ground-to-Air SATVOICE calling:

- in item 10, as appropriate insert:
  - "M1" for ATC RTF INMARSAT capability and/or
  - "M3" for ATC RTF IRIDIUM capability; and
- in Item 18, insert:
  - the indicator REG/ followed by the aircraft registration; and
  - the indicator CODE/ followed by the aircraft address expressed in the form of an alphanumerical code of six hexadecimal characters.

**Example:**

(FPL-XXX101-IS
-B773/H-SHXWM1M3/S
-EGLL1400
-N0450F310 L9 UL9 STU285036/M082F310 UL9 LIMRI 52N020W 52N030W 50N040W 49N050W
-CYQX0455 CYYR
-EET/EISN0026 EGGX0111 CZQX0228 REG/CFIUV SEL/FQHS CODE/C0173E)

**Note:** Inclusion of SATVOICE capability in the ICAO flight plan indicates to the air traffic controller that both the aircraft equipment is approved for use and that the flight crew has the appropriate qualifications and training to use it.

## SATVOICE Calling Codes

To avoid service disruptions, operators should ensure that the short codes are programmed into their systems as long codes are subject to change.

| Site | City | Long Code | Short Code |
|---|---|---|---|
| **ZEG** | Edmonton, AB | 1-780-890-2775 | 431601 |
| **ZQX (Dom.)** | Gander, NL | 1-709-651-5297 | 431602 |
| **ZQX (Ocean.)** | Gander, NL | 1-709-651-5260 | 431603 |
| **ZQX (IFSS)** | Gander, NL | 1-709-651-5298 | 431613 |

A complete list of the FIRs providing SATVOICE services and their respective long and short codes can be found in the AIP Canada (ICAO), Part 1 – General (GEN), Section GEN 3.4.4.1, “Voice Services”.

## Further Information

For further Information, please contact:

NAV CANADA
Attn: Jeff Dawson, Director
Air Traffic Services (ATS) Standards

Tel.: 613-563-7341

Jeff Dawson
Director, Air Traffic Services (ATS) Standards

# AERONAUTICAL INFORMATION CIRCULAR 21/19

## DECOMMISSIONING OF THE LOCALIZER AND DISTANCE MEASURING EQUIPMENT (LOC/DME) ROBERVAL, QUEBEC

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for the localizer (LOC) and distance measuring equipment (DME) at Roberval, Quebec. The study concluded that there was no ongoing requirement for the LOC/DME and recommended they be decommissioned.

Prior to decommissioning, the LOC/DME supported instrument approach procedures (IAPs) will be replaced with localizer performance with vertical guidance (LPV) global navigation satellite system (GNSS) IAPs.

**This change will take effect on 15 August 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 20/19

## DECOMMISSIONING OF THE LOCALIZER AND DISTANCE MEASURING EQUIPMENT (LOC/DME) CHEVERY, QUEBEC

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for the localizer (LOC) and distance measuring equipment (DME) at Chevery, Quebec. The study concluded that there was no ongoing requirement for the LOC/DME and recommended they be decommissioned.

Prior to decommissioning, the LOC/DME supported instrument approach procedures (IAPs) will be replaced with localizer performance with vertical guidance (LPV) and lateral navigation/vertical navigation (LNAV/VNAV) global navigation satellite system (GNSS) IAPs.

**This change will take effect on 15 August 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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James Ferrier
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# AERONAUTICAL INFORMATION CIRCULAR 19/19

## TRANSITION TO THE INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) NOTAM FORMAT FOR ALL CANADIAN NOTAMs

Commencing on 10 October 2019, all Canadian NOTAMs will be created and disseminated in the internationally recognized format described in Annex 15, “Aeronautical Information Services,” of the Convention on International Civil Aviation. The Canadian domestic format will be discontinued, except for runway surface condition NOTAM format, also known as “NOTAMJ”, which is scheduled to be replaced in November 2020.

NOTAMs currently disseminated in series A, B, Y, and Z will be assigned a different series in accordance with dissemination categories, NOTAM regions, and subject groupings.

Due to the number limitation for each series, three (3) dissemination categories and three (3) NOTAM regions have been created to better serve stakeholders. Each NOTAM region will be assigned two (2) NOTAM series for each dissemination category (for a total of 6 series per NOTAM region).

### Dissemination Categories

- **International:** specific aerodromes of this category and associated facilities and services, navigation aids (NAVAIDs), and airspace.
- **International – United States of America:** specific aerodromes of this category and associated facilities and services, NAVAIDs, and airspace.
- **National:** specific aerodromes of this category and associated facilities and services, obstacles, and obstacle light outages.

### NOTAM Regions

- **Western region:** comprising Vancouver (CZVR) and Edmonton (CZEG) flight information region (FIR).
- **Central region:** comprising Winnipeg (CZWG) and Toronto (CZYZ) FIR, excluding 3 areas where service is provided in English and French.
- **Eastern region:** comprising Montreal (CZUL), Moncton (CZQM), and Gander (CZQX) FIR, including 3 areas from the central region where the service is provided in English and French.

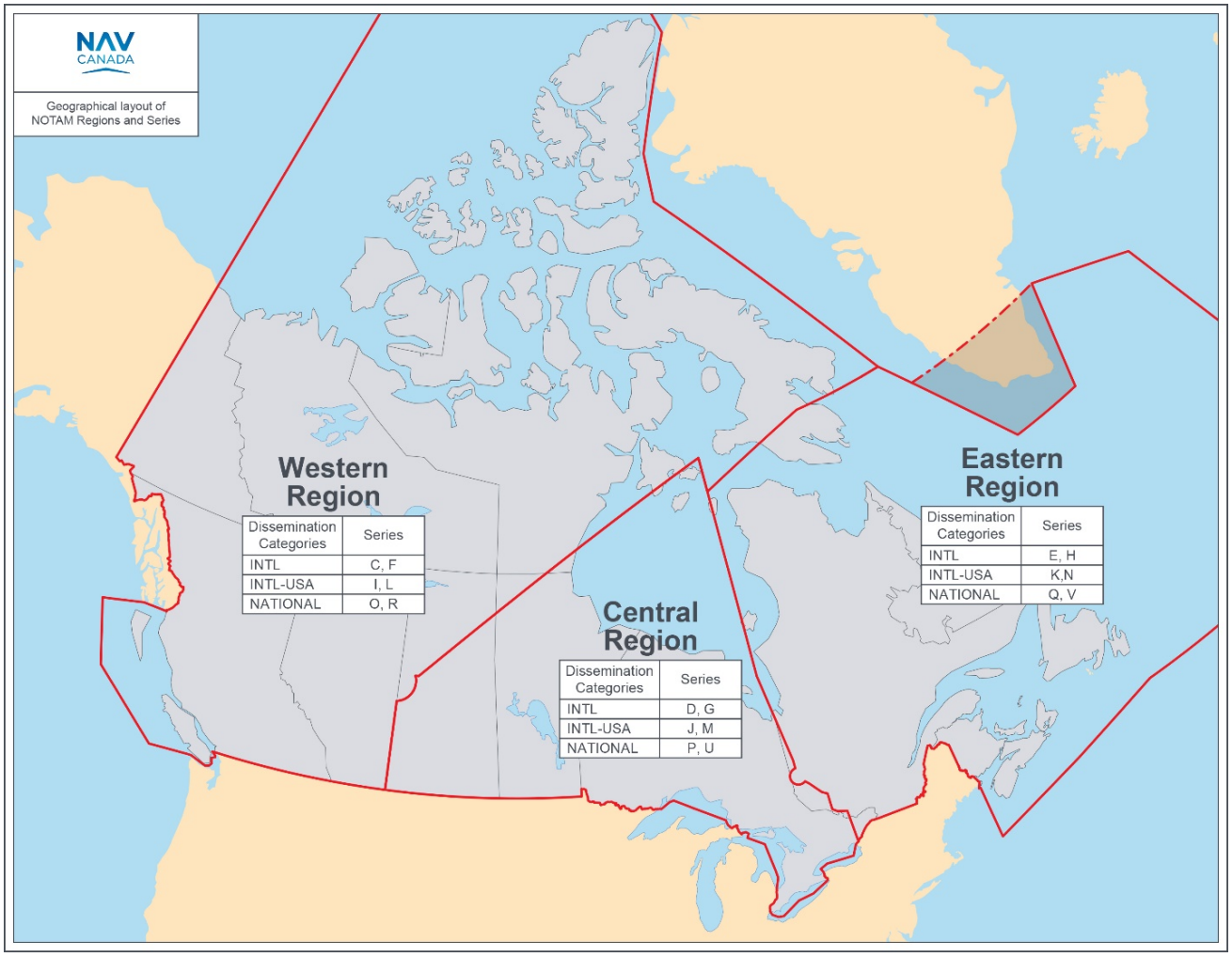


**Figure 1: Map of NOTAM Regions and Series**

On 10 October 2019, the *AIP Canada (ICAO)*, Section GEN 3.1.3.4 will include detailed information on:

- NOTAM series, NOTAM regions, and dissemination categories;
- Lists of specific aerodromes, NAVAIDs, and Class F airspace; and,
- Query or response procedures.

The October version of the *AIP Canada (ICAO)* will be available in advance.

For Canadian users, a briefing comparing the domestic format and international format has been prepared and can be found on the NAV CANADA website at <http://www.navcanada.ca/EN/products-and-services/Pages/Transition-to-ICAO-NOTAM-format.aspx>.

## Further Information

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Jeff Dawson
Director, Air Traffic Services (ATS) Standards

# AERONAUTICAL INFORMATION CIRCULAR 18/19

## CHANGE IN HOURS OF AIR TRAFFIC SERVICES WABUSH, NEWFOUNDLAND AND LABRADOR (CYWK)

NAV CANADA, the country's provider of civil air navigation services, assessed the hours of operation for the flight service station (FSS) at the Wabush Airport (CYWK). The assessment concluded that the hours can be adjusted by opening one hour later each day. This will change the opening time to 1100Z and the closing time to 0330Z.

This aeronautical information circular outlines the operational change resulting from the adjustment in hours. The new hours of the FSS are: 1100Z to 0330Z or 07:00 to 23:00 hours, local time.

**This change takes effect on 29 July 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 16/19

## NOTICE OF AMENDMENT TO WAKE TURBULENCE SEPARATION STANDARDS ON FINAL APPROACH AT TORONTO/LESTER B. PEARSON INTERNATIONAL AIRPORT (CYYZ)

### Purpose of the Circular

This circular is to advise pilots of amended wake turbulence separation standards for aircraft operating on final approach to all runways at Toronto/Lester B. Pearson International Airport (CYYZ).

It is expected that these amended wake turbulence separation standards will be implemented at other capacity-constrained airports in Canada for both the arrival and departure phases of flight. Additional changes will be notified by NOTAM or aeronautical information circulars.

### Background

The demand for airport capacity increases every year, yet the main constraint to increasing airport capacity is the runway, which only accommodates a limited number of flights per unit of time. In less than visual meteorological conditions, this capacity is directly linked with the minimum surveillance and/or wake turbulence separation required between aircraft.

During recent years, knowledge about wake vortex behaviour in the operational environment has increased thanks to measured data and improved understanding of physical characteristics. In addition, the fleet mix has changed significantly since the last update to weight categories and associated wake turbulence separation minima. For these two reasons, International Civil Aviation Organization (ICAO) requested that the Federal Aviation Administration (FAA) and European Organization for the Safety of Air Navigation (EUROCONTROL) jointly undertake an effort to recategorize the existing fleet of aircraft and modify the associated wake turbulence separation minima. A goal of safely increasing capacity at the constrained airports around the world was also given to this joint undertaking, through the optimization of the proposed categories based on today's fleet mix. It is based on existing safety cases, trials and deployments.

### Amended Wake Turbulence Separation Standards

The wake turbulence re-categorization will be referred to as Enhanced Wake Separation, while the wake turbulence separation currently in use will be referred to as Standard Wake Separation. Enhanced Wake Separation uses the criteria "as safe as," or "safer than today" in the safety assessment of the proposed change; specifically, Enhanced Wake Separation assures that for all but the heaviest of the heavy aircraft, the potential wake turbulence strength (circulation) encountered from any leading aircraft type is no greater than that possible under today's ICAO separations. In addition, Enhanced Wake Separation increases separation for the smallest, most vulnerable aircraft and as a result reduces the potential wake turbulence circulation that those aircraft might encounter. (While not a specific goal of Enhanced Wake Separation, the risk of the system was also put in better balance because of the increased separation for the most vulnerable aircraft and the reduced separation for the least vulnerable aircraft.)

The seven-group Enhanced Wake Separation is an alternative means of separating aircraft for wake turbulence purposes. The A380 aircraft is assigned to Group A. ICAO Heavy aircraft were assigned to one of two groups, Groups B and C, which are essentially an upper-heavy and lower-heavy group. ICAO Mediums were assigned Groups D, E, and F, which are essentially upper-, middle- and lower-medium groups. A few of the ICAO Mediums at the lowest end of the weight limit were assigned to Group G, along with all the ICAO Light aircraft.

## Enhanced Wake Separation

On or soon after 0500Z Coordinated Universal Time (UTC) on 6 May 2019, Enhanced Wake Separation will be used between aircraft on final approach to all runways at Toronto/Lester B. Pearson International Airport. Confirmation of the specific date and time will be notified by NOTAM. All other phases of operation besides approach will be subject to Standard Wake Separation.

The seven Enhanced Wake Separation groups are based on the wake characteristics of the lead aircraft and the resistance to wake of the following aircraft. These depend primarily on maximum certificated take-off weight, wing characteristics, and speeds. Each aircraft group is described below.

- Group A Aircraft – aircraft types of 136,000 kg or more, and a wing span less than or equal to 80 m but greater than 74.68 m
- Group B Aircraft – aircraft types of 136,000 kg or more, and a wing span less than or equal to 74.68 m but great than 53.34 m
- Group C Aircraft – aircraft types of 136,000 kg or more, and a wing span less than or equal to 53.34 m but greater than 38.1 m
- Group D Aircraft – aircraft types of less than 136,000 kg, but more than 18 600 kg, and a wing span greater than 32 m
- Group E Aircraft – aircraft types less of than 136,000 kg, but more than 18 600 kg, and a wing span of 32 m or less but greater than 27.43 m
- Group F Aircraft – aircraft types less of than 136,000 kg, but more than 18 600 kg, and a wing span of 27.43 m or less
- Group G Aircraft – aircraft types of 18,600 kg or less (no wing span criterion)

**Note:** Minimum runway occupancy times (ROT) and speed compliance on final approach are required by all aircraft due to reduced spacing between aircraft pairs.

| | | FOLLOWER | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Enhanced Group** | **A** | **B** | **C** | **D** | **E** | **F** | **G** |
| | Aircraft Type Examples | A380 | A124/1330/ B777 | MD11/B767 | B757/A320/ B737NG | E190/ DH8D | E170/ CRJ1 | CL30/Light |
| **LEADER** **A** | A380 | | 4 miles | 5 miles | 5 miles | 6 miles | 6 miles | 8 miles |
| **B** | A124/1330/ B777 | | 3 miles | 4 miles | 4 miles | 5 miles | 5 miles | 7 miles |
| **C** | MD11/B767 | | | | 3 miles | 3.5 miles | 3.5 miles | 6 miles |
| **D** | B757/A320/ B737NG | | | | | | | 4 miles |
| **E** | E190/ DH8D | | | | | | | 4 miles |
| **F** | E170/ CRJ1 | | | | | | | |
| **G** | CL30/Light | | | | | | | |

**Note:** Blank spaces only require the minimum surveillance separation.

## Standard Wake Separation

The current wake turbulence separation standards are based on three plus one categories; light, medium, heavy, and super (ICAO TEC/OPS/SEP – 08-0294.SLG) and will continue to be used on departure at Toronto/Lester B Pearson Airport and throughout Canada. Any changes from Standard Wake Separation to Enhanced Wake Separation will be notified by NOTAM or aeronautical information circulars.

| | | FOLLOWER | | | |
|---|---|---|---|---|---|
| | | **Super** | **Heavy** | **Medium** | **Light** |
| **LEADER** | **Super** | 4 miles | 6 miles | 7 miles | 8 miles |
| | **Heavy** | 4 miles | 4 miles | 5 miles | 6 miles |
| | **Medium** | | | | 4 miles |
| | **Light** | | | | |

**Note:** Blank spaces only require the minimum surveillance separation.

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Jeff Dawson
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# AERONAUTICAL INFORMATION CIRCULAR 14/19

## TITLING OF PERFORMANCE-BASED NAVIGATION INSTRUMENT APPROACH PROCEDURES

### Purpose of Circular

This circular advises pilots about changes they may see to the titling of performance-based navigation (PBN) instrument approach procedures at some locations outside of Canada.

### Background

In 2014, the International Civil Aviation Organization (ICAO) revised Document 8168 Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) to change the titles of PBN instrument approach procedures. The revision recommended that States retitle PBN approaches from “RNAV” to “RNP” no later than 1 December 2022. As a result, several States began to make changes in 2015.

ICAO’s new titling convention changes:

| Previous Title | New Title |
|---|---|
| RNAV (GNSS) RWY XX | RNP RWY XX |
| RNAV (RNP) RWY XX | RNP RWY XX (AR) |

### Discussion

In November 2016, the Federal Aviation Administration (FAA) published Information for Operators (InFO) 16020 explaining that the United States does not intend to change the titles of their PBN instrument approach procedures from RNAV to RNP. Canada has similarly decided not to change the titles of Canadian PBN instrument approach procedures, and will continue to use the current **RNAV (GNSS) RWY XX** and **RNAV (RNP) RWY XX** titles.

### Implementation in Other Countries

Implementations in other countries could vary. Pilots flying PBN procedures at locations outside of Canada (and the United States) should pay particular attention to applicable foreign aeronautical information publications to determine eligibility and pertinent operational information.

## Further Information

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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 13/19

## REVIEW OF AIRSPACE CLASSIFICATION
## CHICOUTIMI/ST-HONORÉ, QUEBEC CONTROL ZONE

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the airspace classification within the Chicoutimi/St-Honore, airport (CYRC) control zone.

The study concluded that the airspace within the CYRC control zone should be reclassified from Class D to Class C.

**This change will take effect 20 June 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 12/19

## NOTICE OF AMENDMENT TO RUNWAY SELECTION CRITERIA AT TORONTO/LESTER B. PEARSON INTERNATIONAL AIRPORT

(Replaces AIC 5/19)

### Purpose of the Circular

This aeronautical information circular is to advise pilots of amended runway selection criteria at Toronto/Lester B. Pearson International Airport (CYYZ).

### Background

Guidelines describing *'Runway Selection Criteria'* and the associated maximum crosswind limit are outlined in the *Transport Canada Aeronautical Information Manual* (TC AIM – TP14371E), sub-section 4.1.3.

Weather-related operational delays cause significant disruptions across the Canadian aviation network. This impact is especially significant when Toronto/Lester B. Pearson International Airport is required to use the north/south runways (i.e., 15L/33R and 15R/33L), as arrival capacity is reduced by upwards of 40%. By safely increasing the maximum crosswind component limit (including gusts) outlined within the *'Runway Selection Criteria'* limits, there will likely be improved operational efficiency and reliability of the airport.

### Amended Runway Selection Criteria

**Effective on 28 February 2019 at 0500Z Coordinated Universal Time (UTC),** the '*Runway Selection Criteria'* applicable at CYYZ will be as follows:

| Runway Condition | Current Maximum Crosswind Component Including Gusts | New Maximum Crosswind Component Including Gusts |
|---|---|---|
| Dry | 25 knots | 25 knots* |
| Wet | 15 knots | 20 knots |
| Contaminated (More than 25% contaminated, and no pilot braking action reports that are less than "fair" or "medium.") | Select "most into the wind" runway | 10 knots |
| | | If the contamination is TRACE depth, 15 knots |

***At present, the dry limit will remain unchanged at 25 knots.**

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 11/19

## NAVIGATION AID MODERNIZATION

(Replaces AIC 6/19)

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for non-directional beacons (NDBs) and very-high frequency omnidirectional rangefinders (VORs).

The study concluded that given the comprehensive radar surveillance coverage, and the propensity of area navigation (RNAV) with global navigation satellite system (GNSS) equipped aircraft, many navigation aids (NAVAIDS) are no longer required and should be decommissioned.

Where a current NAVAID identified in the study serves as an instrument approach aid or anchors an airway segment, NAV CANADA will ensure that an RNAV (GNSS) instrument approach procedure or RNAV airway segment is published, where required, before removal of the identified NAVAID.

The implementation of this extensive program will take up to seven years and will be carried out in 15 phases. The first phase is represented below, with the remainder to be removed in phases 2 through 15.

Subsequent aeronautical information circulars (AICs) will be published for each upcoming phase.

The table below indicates the NAVAIDs planned for removal in Phase 1.


| Site | FIR | Ident |
|---|---|---|
| Lac La Biche | CZEG | YLB |
| Déline | CZEG | WJ |
| Tulita | CZEG | ZFN |
| Aklavik | CZEG | YKD |
| Port Hawkesbury | CZQM | PD |
| Deer Lake (NL) | CZQX | DF |
| Smiths Falls | CZUL | YSH |
| Chute-Des-Passes | CZUL | DG |
| Bonaventure | CZUL | YVB |
| Bromont | CZUL | ZBM |
| Salluit | CZUL | YZG |
| Williams Lake | CZVR | WL |
| Ignace | CZWG | ZUC |
| Lansdowne House | CZWG | YLH |
| Ogoki Post | CZWG | YOG |
| Sachigo Lake | CZWG | ZPB |
| Hearst | CZYZ | HF |
| Hornepayne | CZYZ | YHN |
| St-Bruno-De-Guiges | CZYZ | YBM |
| Campbellford | CZYZ | YCF |
| Pelee Island | CZYZ | PT |

**Phase 1 will take effect on 25 April 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 10/19

## REVOKE THE LINES OF CIRCLING MINIMA ON INSTRUMENT APPROACH PROCEDURES: NATIONAL

NAV CANADA, the country's provider of civil air navigation services, conducted an assessment of the circling minima for instrument approach procedures (IAPs) at the 4 major international airports and at 11 international commercial flight aerodromes. Additionally, the circling procedures were assessed at other airports based on the criteria described below.

The assessment concluded that circling approaches are not flown by most customers that prefer to fly straight-in area navigation (RNAV) approaches. The Transportation Safety Board has indicated that unstable approaches including step downs and circling continue to contribute to incidents and accidents.

The current inventory review has been rationalized with the IAP to be revoked as a result of the navigation aid (NAVAID) Modernization Plan (NMP) aeronautical study. A number of very high frequency omnidirectional range (VOR) and non-directional beacon (NDB) procedures will be revoked during NMP implementation. The NMP study is available in the Level of Service – Completed Studies section of the NAV CANADA website.

<www.navcanada.ca>
Products & Services
Level of Service
Completed Studies
NAVAID Modernization Plan

The remaining IAPs were assessed for circling minima revocation based on the following criteria:

- **Major International Airports:** (CYYZ, CYUL, CYYC and CYVR)
  - Remove circling.
- **Other International Commercial Flight Aerodromes:** (CYYT, CYQX, CYJT, CYHZ, CYQB, CYMX, CYOW, CYHM, CYWG, CYEG and CYYJ)
  - Remove all circling minima with the exception of the circling minima tied to a localizer (LOC) approach.
- **All other Airports:** Conventional approaches
  - Remove all circling minima with the exception of the circling minima tied to one LOC approach with the lowest minima.
  - If no LOC approaches, remove all circling minima with the exception of the circling minima associated with the VOR approach with the lowest minima.
  - If no LOC or VOR approaches, remove all circling minima with the exception of the circling minima tied to one NDB approach with the lowest minima.
- **All other Airports:** RNAV approaches
  - RNAV approaches should not have circling minima where at least lateral navigation (LNAV) minima is available to all runway ends at an airport.
  - RNAV approaches should not have circling minima where a conventional (LOC/VOR/NDB) circling minima is available at an airport.
  - Where a runway end is not served by any straight-in approach procedure, an RNAV approach may have circling minima based on the LNAV procedure.

**These changes will take effect starting 25 April 2019 at 0901Z Coordinated Universal Time (UTC)** over multiple publication cycles. The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 9/19

## REVOKE LOW FREQUENCY AIR ROUTES: NATIONAL

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for non-directional beacons (NDBs) and very high frequency omnidirectional rangefinders (VORs).

The study concluded that given the comprehensive radar surveillance coverage, and the capabilities of area navigation (RNAV) with global navigation satellite system (GNSS) equipped aircraft, many navigation aids (NAVAID) are no longer required and should be decommissioned. Rationalized with the NAVAIDs Modernization Plan (NMP), the current air route inventory was assessed for the possibility of removing unnecessary air route segments and maintaining continuity with the new RNAV route structure. Low frequency (LF) airways and air-routes not addressed in the NMP were assessed for revocation based on the following criteria:

- LF airway/air-route underlies an existing VICTOR airway allowing navigation and airport accessibility to be maintained; and
- The minimum enroute altitude (MEA) is 10,000 feet above sea level (ASL) or below.

The table below indicates the LF air route segments planned for removal in addition to those affected by NMP implementation.

| Air Route | Segment Start | Point Type | Segment End | Point Type | LO Chart |
|---|---|---|---|---|---|
| **R5** | ZW (TESLIN) | NDB | QH (WATSON LK) | NDB | 5 |
| **R36** | ZW (TESLIN) | NDB | PJ (ROBINSON) | NDB | 5 |
| **R19** | YKA (KAMLOOPS) | NDB | NY (ENDERBY) | NDB | 2 |
| **R19** | NY (ENDERBY) | NDB | WHATS (BC) | WPT | 2 |
| **G1** | YCD (NANAIMO) | NDB | VR (VANCOUVER) | NDB | 2 |
| **G1** | VR (VANCOUVER) | NDB | MAIPL (BC) | WPT | 2 |
| **G1** | MAIPL (BC) | WPT | HE (HOPE) | NDB | 2 |
| **G1** | HE (HOPE) | NDB | DC (PRINCETON) | NDB | 2 |
| **G1** | DC (PRINCETON) | NDB | YYF (PENTICTON) | NDB | 2 |
| **G1** | YYF (PENTICTON) | NDB | JULLY (BC) | WPT | 2 |
| **G1** | JULLY (BC) | WPT | CG (CASTLEGAR) | NDB | 2 |
| **G1** | CG (CASTLEGAR) | NDB | XC (CRANBROOK) | NDB | 2 |
| **B8** | DC (PRINCETON) | NDB | YKA (KAMLOOPS) | NDB | 2 |
| **A2** | ZU (WHITECOURT) | NDB | QU (GRAND PARARIE) | NDB | 1 |
| **A2** | QU (GRAND PARARIE) | NDB | DQ (DAWSON CREEK) | NDB | 1 |
| **A2** | DQ (DAWSON CREEK) | NDB | XJ (FT ST JOHN) | NDB | 1 |
| **A2** | XJ (FT ST JOHN) | NDB | YE (FT NELSON) | NDB | 5 |
| **B84** | MM (FT MCMURY) | NDB | PY (FT CHIPWN) | NDB | 1 |

| Air Route | Segment Start | Point Type | Segment End | Point Type | LO Chart |
|---|---|---|---|---|---|
| **B84** | PY (FT CHIPWN) | NDB | SM (FT SMITH) | NDB | 1 |
| **B84** | SM (FT SMITH) | NDB | FR (FT RESOLTN) | NDB | 5 |
| **B84** | FR (FT RESOLTN) | NDB | ZF (YELLOWKNIFE) | NDB | 5 |
| **B3** | ZU (WHITECOURT) | NDB | PE (PEACE RVR) | NDB | 1 |
| **B3** | PE (PEACE RVR) | NDB | OJ (HI LEVEL) | NDB | 1 |
| **A7** | XD (EDMONTON) | NDB | DETBA (AB) | WPT | 1 |
| **A7** | DETBA (AB) | WPT | RAGUR (AB) | WPT | 1 |
| **A7** | RAGUR (AB) | WPT | PE (PEACE RIVER) | NDB | 1 |
| **B6** | QR (REGINA) | NDB | PA (PR ALBERT) | NDB | 2 |
| **R24** | PA (PR ALBERT) | NDB | QV (YORKTON) | NDB | 2 |
| **R24** | QV (YORKTON) | NDB | BR (BRANDON) | NDB | 4 |
| **B23** | QW (N BATTLEFORD) | NDB | PA (PR ALBERT) | NDB | 2 |
| **B23** | PA (PR ALBERT) | NDB | QD (THE PAS) | NDB | 2 |
| **B23** | QD (THE PAS) | NDB | TH (THOMPSON) | NDB | 3 |
| **B23** | TH (THOMPSON) | NDB | YQ (CHURCHILL) | NDB | 3 |
| **A13** | QD (THE PAS) | NDB | VC (LA RONGE) | NDB | 2 |
| **A14** | VC (LA RONGE) | NDB | YL (LYNN LAKE) | NDB | 2 |
| **B12** | QV (YORKTON) | NDB | QD (THE PAS) | NDB | 2 |
| **B12** | QD (THE PAS) | NDB | YL (LYNN LAKE) | NDB | 2 |
| **B1** | TH (THOMPSON) | NDB | YGX (GILLAM) | NDB | 3 |
| **B1** | YGX (GILLAM) | NDB | YQ (CHURCHILL) | NDB | 3 |
| **B15** | TH (THOMPSON) | NDB | YL (LYNN LAKE) | NDB | 3 |
| **R6** | XE (SASKATOON) | NDB | VX (DAFOE) | NDB | 4 |
| **R6** | VX (DAFOE) | NDB | QV (YORKTON) | NDB | 4 |
| **R6** | QV (YORKTON) | NDB | UDE (DELTA) | NDB | 4 |
| **R6** | WG (WINNIPEG) | NDB | RL (RED LAKE) | NDB | 4 |
| **R22** | ML (CHARLEVOIX) | NDB | RI (RIV-DU-LOUP) | NDB | 7 |
| **R9** | QB (QUEBEC) | NDB | RI (RIV-DU-LOUP) | NDB | 7 |
| **B14** | YY (MT JOLI) | NDB | GP (GASPE) | NDB | 7 |
| **G1** | IRGUB (NB) | WPT | FC (FREDRICTON) | NDB | 8 |
| **G1** | FC (FREDRICTON) | NDB | ADRAX (NB) | WPT | 8 |
| **G1** | ADRAX (NB) | WPT | QM (MONCTON) | NDB | 8 |
| **B16** | QI (YARMOUHT) | NDB | SJ (SAINT JOHN) | NDB | 8 |
| **B16** | SJ (SAINT JOHN) | NDB | QM (MONCTON) | NDB | 8 |
| **B21** | QX (GANDER) | NDB | AY (ST ANTHONY) | NDB | 8 |
| **R11** | EMBIM (NB) | WPT | FC (FREDRICTON) | NDB | 8 |
| **R11** | FC (FREDRICTON) | NDB | ADRAX (NL) | WPT | 8 |

| Air Route | Segment Start | Point Type | Segment End | Point Type | LO Chart |
|---|---|---|---|---|---|
| **R11** | ADRAX (NL) | WPT | SJ (SAINT JOHN) | NDB | 8 |
| **R13** | QY (SYDNEY) | NDB | QX (GANDER) | NDB | 8 |
| **R14** | QY (SYDNEY) | NDB | UWP (ARGENTIA) | NDB | 8 |
| **R14** | UWP (ARGENTIA) | NDB | ZNF (WABANA) | NDB | 8 |
| **R29** | UM (CHURCHILL FALLS) | NDB | YR (GOOSE BAY) | NDB | 7 |

**This change will take effect 25 April 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 8/19

## REVOKE SUPPLEMENTAL INSTRUMENT APPROACH PROCEDURES: NATIONAL

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for non-directional beacons (NDBs) and very high frequency omnidirectional rangefinders (VORs).

The study concluded that given the comprehensive radar surveillance coverage, and the capabilities of area navigation (RNAV) with global navigation satellite system (GNSS) equipped aircraft, many navigation aids (NAVAIDS) are no longer required and should be decommissioned. In combination with the reduction in NDB and VOR NAVAIDs, the study also considered the remaining inventory of instrument approach procedures (IAP) available at Canadian airports and aerodromes. In addition to the instrument approach procedures to be revoked because of NAVAID decommissioning, the following instrument approach procedures are assessed to be supplemental and can be revoked without reducing airport access.

| Aerodrome | Ident. | IAP to be Revoked |
|---|---|---|
| Baie-Comeau, QC | CYBC | VOR/DME RWY 10<br>VOR/DME RWY 28<br>VOR RWY 28 |
| Gaspé (Michel-Pouliot), QC | CYGP | VOR/DME RWY 10 |
| Iqaluit, NU | CYFB | NDB A |
| La Grande Rivière, QC | CYGL | VOR/DME RWY 13<br>VOR/DME RWY 31 |
| Natashquan, QC | CYNA | VOR/DME RWY 14<br>VOR/DME RWY 32 |
| Puvirnituq, QC | CYPX | NDB/DME RWY 01<br>NDB/DME RWY 19 |
| Val-d'Or, QC | CYVO | VOR/DME RWY 36 |
| Wabush, NL | CYWK | VOR/DME RWY 36 |
| Kitchener/Waterloo, ON | CYKF | NDB/DME RWY 26 |
| Moosonee, ON | CYMO | VOR/DME RWY 06<br>VOR/DME RWY 24 |
| Baker Lake, NU | CYBK | NDB A (TRUE) |
| Cambridge Bay, NU | CYCB | VOR/DME RWY 13 (TRUE)<br>VOR/DME RWY 31 (TRUE) |
| Churchill, MB | CYYQ | VOR/DME RWY 25 |
| Gillam, MB | CYGX | NDB/DME RWY 05<br>NDB/DME RWY 23 |
| La Ronge (Barber Field), SK | CYVC | VOR/DME RWY 18<br>VOR/DME RWY 36 |
| Lynn Lake, MB | CYYL | VOR/DME RWY 17<br>VOR/DME RWY 35 |

| Aerodrome | Ident. | IAP to be Revoked |
|---|---|---|
| Red Lake, ON | CYRL | VOR/DME RWY 08<br>VOR/DME RWY 26 |
| Fort Smith, NT | CYSM | VOR/DME RWY 12<br>VOR/DME RWY 30 |
| Grande Prairie, AB | CYQU | VOR/DME RWY 25 |
| Hall Beach, NU | CYUX | VOR/DME RWY 12 (TRUE)<br>VOR/DME RWY 30 (TRUE)<br>NDB RWY 12 (TRUE)<br>NDB RWY 30 (TRUE) |
| Inuvik (Mike Zubko), NT | CYEV | NDB A |
| Norman Wells, NT | CYVQ | VOR B<br>NDB RWY 28 |
| Peace River, AB | CYPE | VOR A |
| Rankin Inlet, NU | CYRT | VOR/DME RWY 13 (TRUE)<br>NDB RWY 31 (TRUE) |
| Whitecourt, AB | CYZU | VOR/DME RWY 11 |
| Yellowknife, NT | CYZF | VOR/DME RWY 10<br>VOR/DME RWY 16<br>NDB RWY 34 |
| Campbell River, BC | CYBL | NDB A |
| Terrace, BC | CYXT | NDB/DME A |
| Thompson, MB | CYTH | VOR/DME RWY 06 |

**This change will take effect 25 April 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 7/19

## NOTICE OF EXPANSION OF ATS SURVEILLANCE SERVICES IN THE EDMONTON FLIGHT INFORMATION REGION (FIR)

### Introduction

Automatic dependent surveillance – broadcast (ADS-B) service, as facilitated by receivers hosted on satellites, will be expanded into oceanic and remote areas previously limited by ground-based air traffic service (ATS) surveillance systems. This will make it possible to maintain a safe, orderly, and expeditious flow of air traffic using smaller air traffic control (ATC) separation standards than those required today. Used together with the existing ground-based ATS surveillance infrastructure, space-based ADS-B will permit uninterrupted ATS surveillance for equipped aircraft operating over Northern Canadian Airspace in the Edmonton flight information region (FIR).

### Phased Approach

On or soon after 25 March 2019, the Edmonton area control centre (ACC) will use space-based ADS-B signals to augment the existing ground-based ADS-B service, using the current 5 nautical miles (NM) separation within existing very high frequency (VHF) / ADS-B surveillance airspace (Figure 1).

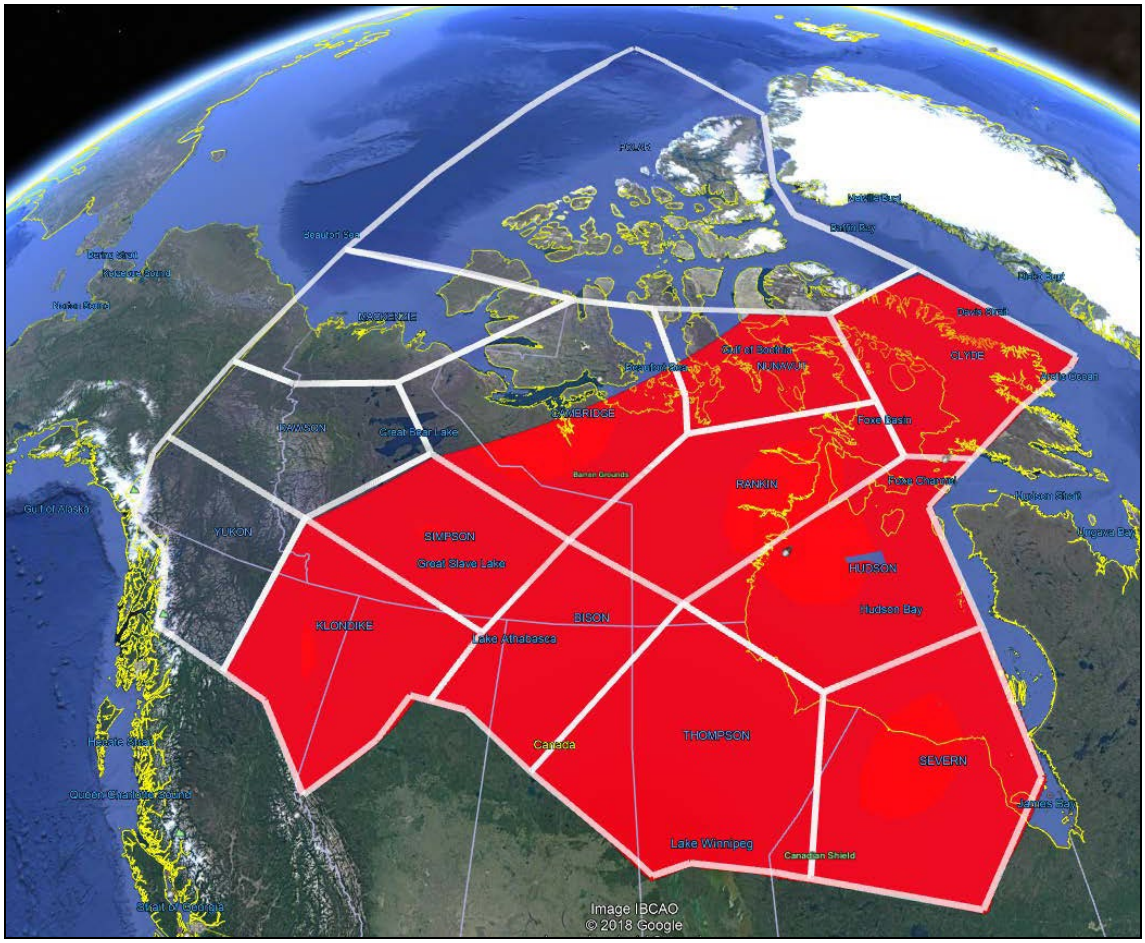


**Figure 1 (NOT SUITABLE FOR NAVIGATION)**

On or soon after 30 April 2019, the Edmonton ACC will expand the use of 5 NM ATS surveillance separation, using space-based ADS-B signals, to all airspace within the Edmonton FIR where VHF communications are available. (Figure 2).

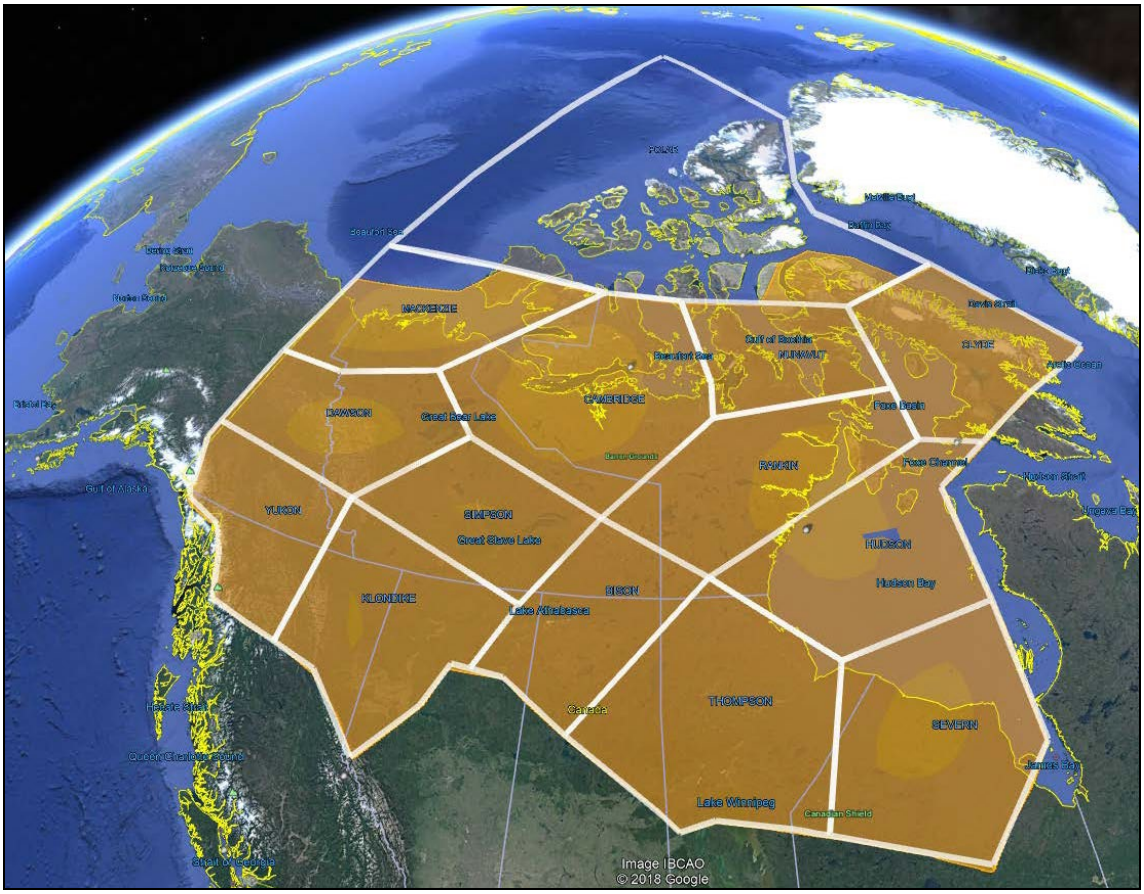


**Figure 2 (NOT SUITABLE FOR NAVIGATION)**

On or soon after 7 October 2019, the Edmonton ACC will begin applying the following separation minima using ATS surveillance systems, where VHF voice communication is not available, by means of space-based ADS-B ATS surveillance signals in pair with controller-pilot data link communications (CPDLC). (Figure 3):

- 14 NM longitudinal separation, provided the relative angle between the tracks is less than 45 degrees.
- 17 NM longitudinal separation, provided the relative angle between the tracks is less than 90 degrees.
- 19 NM lateral separation between parallel or non-intersecting tracks.
- Opposite-direction aircraft on reciprocal tracks may be cleared to climb or descend to or through the levels occupied by another aircraft, provided that the aircraft have reported by ADS-B that they passed each other by 5 NM.

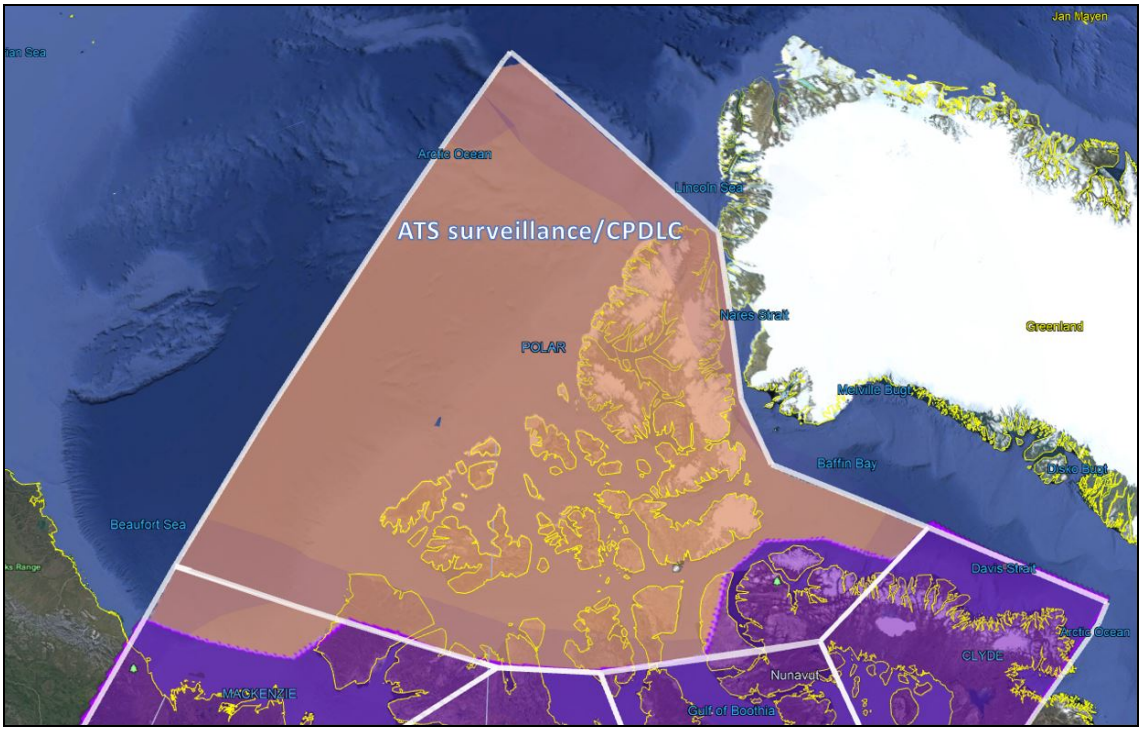


**Figure 3 (NOT SUITABLE FOR NAVIGATION)**

## Background

The space-based ADS-B system will consist of a constellation of low Earth orbit (LEO) satellites hosting ADS-B receivers. A satellite will receive ADS-B data including position, velocity, and altitude from aircraft, which is then routed through other satellites and down-linked to a satellite operations ground station from where it is on-forwarded to the Edmonton ACC.

There will be no change to non-VHF direct controller-pilot communications (DCPC) infrastructure or procedures using CPDLC, as contained in the *Global Operations Data Link (GOLD) Manual* (Doc 10037), and *Satellite Voice Operations Manual* (Doc 10038).

Flight crews are expected to comply with normal non-surveillance procedures, which include position reports via voice or automatic dependent surveillance – contract (ADS-C), and all other operator-specific procedures currently used.

Application of the ATS surveillance-based procedural separations will require that aircraft meet the specifications for required navigation performance 4 (RNP 4) and required communication performance (RCP) 240 and required surveillance performance (RSP) 180, as annotated by the appropriate designator in the International Civil Aviation Organization (ICAO) flight plan.

## Qualifications to Participate

Eligible flights are those that meet the following requirements:

- ADS-B, with dedicated 1090 MHz out capability
- Aircraft meeting the specifications for RNP 4
- Aircraft meeting the specifications of RCP 240

ATS systems use Field 10 (Equipment) of the standard ICAO flight plan to identify an aircraft's data link and navigation capabilities. The operator should insert the following items into the ICAO flight plan (as per the 2012 flight plan format) for Future Air Navigation System 1/A (FANS 1/A) or equivalent aircraft:

a) Field 10a (Radio communication, navigation and approach aid equipment and capabilities):

- insert "J5" to indicate CPDLC FANS1/A SATCOM (Inmarsat) or "J7" to indicate CPDLC FANS1/A SATCOM (Iridium) data link equipment. To be eligible for the space-base ADS-B with CPDLC separations, flights must maintain an active J5/J7 connection. Edmonton ACC will monitor all active datalink connections to ensure compliance
- insert "P2" to indicate RCP 240 approval;

b) Field 10b (Surveillance equipment and capabilities):

- insert "D1" to indicate ADS with FANS1/A capabilities
- insert "B1" or "B2" to indicate ADS-B.

c) Field 18 (Other Information):

- insert "PBN/" followed by "L1" for RNP4 and SUR/RSP180

## Service Limitations North of 72° North

In Edmonton FIR, Inmarsat satellite coverage has limitations in the north, so flights operating only with Inmarsat equipment may experience unreliability north of 72° North (N). There is no Inmarsat satellite coverage north of 80° N, so flights will not be able to use satellite voice communications (SATVOICE) services in this area using Inmarsat. Iridium SATVOICE services are available north of 80° N. Operators of aircraft that are equipped with both Inmarsat and Iridium modems should ensure that they switch to the Iridium system before operating north of 72° N.

Based on these service area limitations, operators are advised that Iridium-equipped flights (J7 in the ICAO flight plan) will be eligible for the space-based ADS-B with CPDLC separations in the entirety of the Edmonton FIR. For flights that are Inmarsat only (J5 in the ICAO flight plan), the separation would be available only within Inmarsat coverage.

## Contacts

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James Ferrier
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# AERONAUTICAL INFORMATION CIRCULAR 4/19

## CHANGE IN HOURS OF AIRPORT AIR TRAFFIC CONTROL SERVICES WINNIPEG/ST. ANDREWS, MANITOBA (CYAV)

NAV CANADA, the country's provider of civil air navigation services (ANS), has assessed the hours of operation for the air traffic control (ATC) service at the Winnipeg/St. Andrews airport (CYAV). As a result, we concluded that the hours could be increased by opening one hour earlier in the morning each day.

This aeronautical information circular (AIC) outlines the operational change that resulted from the addition of hours. The new hours of the airport ATC service are 07:00 to 22:00 local time (1300Z to 0400Z central standard time [CST] or 1200Z to 0300Z central daylight time [CDT]).

- The control zone (CZ) becomes Class D airspace at the new published control tower hours beginning each day at 07:00 local time (1300Z CST or 1200Z CDT); and
- Outside of the hours of operation of the control tower, the airport will continue to revert to a Class E control zone with an aerodrome traffic frequency (ATF), on 118.5 MHz.

**This change took effect on 7 January 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 40/18

## ENGINE FAN BLADE ICE SHEDDING PROCEDURES TORONTO/LESTER B. PEARSON INTERNATIONAL AIRPORT (CYYZ)

The completion of aircraft engine run-up for engine fan blade ice shedding must be conducted on taxiway areas outlined in the chart below. Strict adherence to the centerline is mandatory during engine fan blade ice shedding. Proper coordination with air traffic control (ATC) (clearance delivery, ground, or tower) is required.

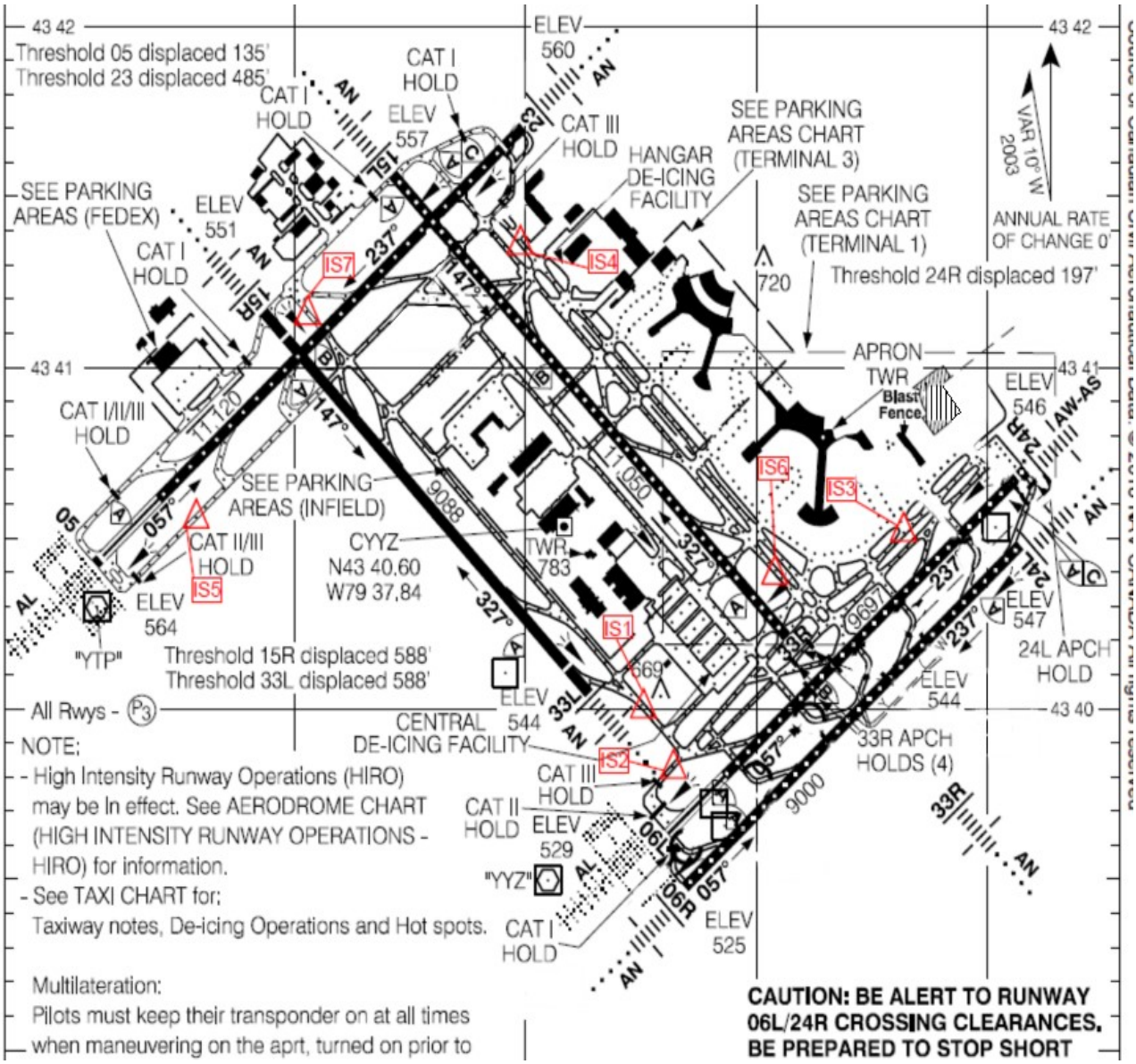
On initial contact with clearance delivery (121.3 MHz), flight crews shall advise:

- Deicing requirements
- Runup requirement prior to takeoff
- Duration of run-up (if required)

Subsequently, if engine run-up requirements change, flight crews shall notify ATC as soon as practicable.

| Departing Runway | Ice Shed Area (IS) see chart on following page | Engine Fan Blade Ice Shedding Area |
|---|---|---|
| 06L or 06R | IS1 or IS2 | Taxiway F between Taxiway T and V or Taxiway D at the CAT III hold line |
| 24R or 24L | IS3 | Taxiway D between Taxiway D3 and D5 |
| 23 | IS4 | Taxiway A between Taxiway H and Taxiway AE |
| 05 | IS5 | Taxiway H between CAT III hold line and Taxiway H4 |
| 33R | IS1 or IS6 | Taxiway F between Taxiway T and V or Taxiway B between Taxiway T and Taxiway V |
| 33L | IS1 | Taxiway F between Taxiway T and Taxiway V |
| 15L | IS4 | Taxiway A between Taxiway H and Taxiway AE or Taxiway F between Runway 05/23 and Taxiway J |
| 15R | IS7 | Taxiway F between Runway 05/23 and Taxiway J |

**The Airport Authority will ensure engine fan blade ice shedding areas in use are inspected and treated as required. Should taxiway surface conditions make engine run-up unsafe, flight crews shall coordinate with ATC to have the run-up conducted at the takeoff position.**




**ENGINE FAN BLADE ICE SHEDDING CHART**

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 39/18

## END OF FOREIGN NOTAM DATABASE AT CANADIAN NOTAM OFFICE (NOF)

NAV CANADA, the country's provider of civil air navigation services, assessed the requirement for the Canadian NOTAM Office (NOF) to store and maintain a database of NOTAMs originating from other ICAO States.

The assessment concluded that there was no requirement for the Canadian NOF to maintain a foreign NOTAM database and recommended that:

- Canadian stakeholders continue to manage NOTAMs that originate from other ICAO States received through set aeronautical fixed service (AFS) predetermined distribution addresses and to query originating states directly when missing NOTAMs; and
- the Canadian NOF provide assistance to Canadian stakeholders that encounter difficulties in accessing NOTAMs from other ICAO States.

**This change will take effect 29 March 2019 at 0901Z Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 36/18

## AIRPORT INFORMATION PUBLICATION ENHANCEMENTS FOR OBSTACLE-FREE ENVIRONMENT CERTIFICATION LEVEL

Commencing in early 2019, the *Canada Flight Supplement* (CFS) will contain the Obstacle-Free Environment certification level of runways and taxiways at certified Canadian aerodromes (airports).

This new information is required so that aircrews may assess the obstacle-free environment at the airport as being "…suitable for the intended operation," such as for scheduled passenger service, as required under 602.96 (2) (b) of the *Canadian Aviation Regulations* (CARs). The information will be presented in the CFS using wingspan groups (Aircraft Group Number I - VI) similar to the groupings A-F used in ICAO Annex 14 Volume 1.

For more detailed information regarding these publication changes, please consult Transport Canada Advisory Circular 602-005.

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Jeff Dawson
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# AERONAUTICAL INFORMATION CIRCULAR 33/18

## INTRODUCTION OF CHARTED COMMUNICATION FAILURE MISSED APPROACH PROCEDURES FOR USE DURING COMMUNICATION FAILURE

### Introduction

Missed approach procedures that incorporate a heading or track to an altitude from which air traffic services (ATS) will commence vectors are being introduced at some aerodrome sites within Canada. Since ATS vectors rely on direct controller-pilot communication (DCPC), a communication failure missed approach procedure will be provided within the chart's plan view to mitigate against potential communication failure events.

### Purpose of Circular

This aeronautical information circular (AIC) is meant to inform Canadian airspace users of the implementation of this concept at Thunder Bay, Ontario (CYQT). Other Canadian aerodrome sites may also have this concept introduced as future airspace reviews are conducted.

### Background

ICAO Annex 4, Chapter 11 provides the standards and recommended practices (SARPS) for providing a description of the missed approach procedure within the profile view of the instrument approach chart (IAC).

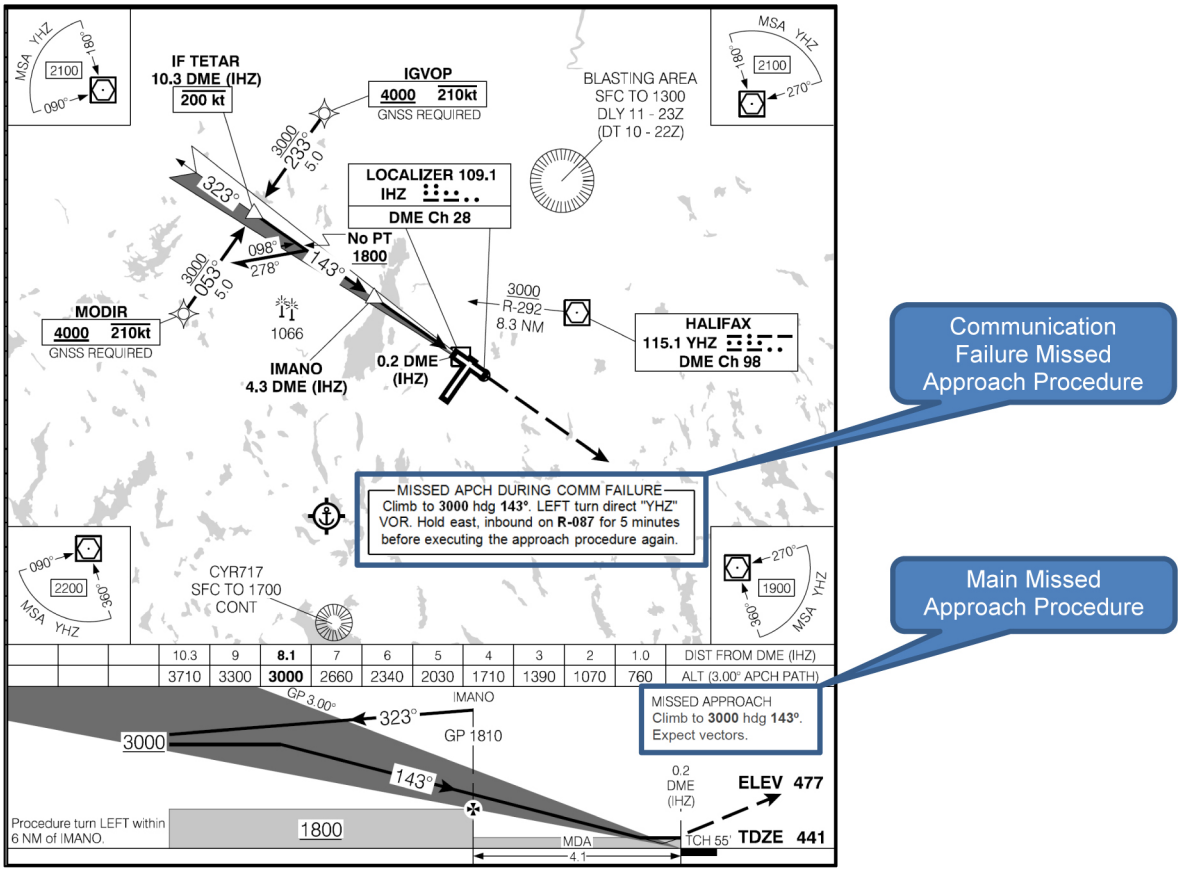
Current Canadian conventional missed approach procedures all terminate at either a radio navigation aid facility or a suitably defined terminal area fix. This often leads to:

- Complex missed approach procedures; and
- Missed approach procedures that double back into the arrival traffic flow, conflict with other site traffic flows, or both.

For these reasons, at many aerodrome sites the preferred missed approach procedure used by ATS is one that incorporates the use of a heading or track to an altitude from which vectors will commence. When this is the case, this type of missed approach procedure will be the one described within the profile view of the IAC in accordance with Annex 4.

Because this type of missed approach procedure relies on vectors and DCPC, a communication failure missed approach procedure that does not rely on vectors or DCPC is required to mitigate against potential communication failures. In these cases, the communication failure missed approach procedure for use during communication failure events will be charted as boxed text within the plan view of the IAC.

An example of this depiction is provided in the following figure.




**NOT FOR NAVIGATION**

## Validity

This AIC is effective 8 November 2018. For further information, please contact:

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Jeff Dawson
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# AERONAUTICAL INFORMATION CIRCULAR 31/18

## ESTABLISHED ON RNP AR (EoR): IMPLEMENTATION AT CALGARY INTERNATIONAL AIRPORT (CYYC)

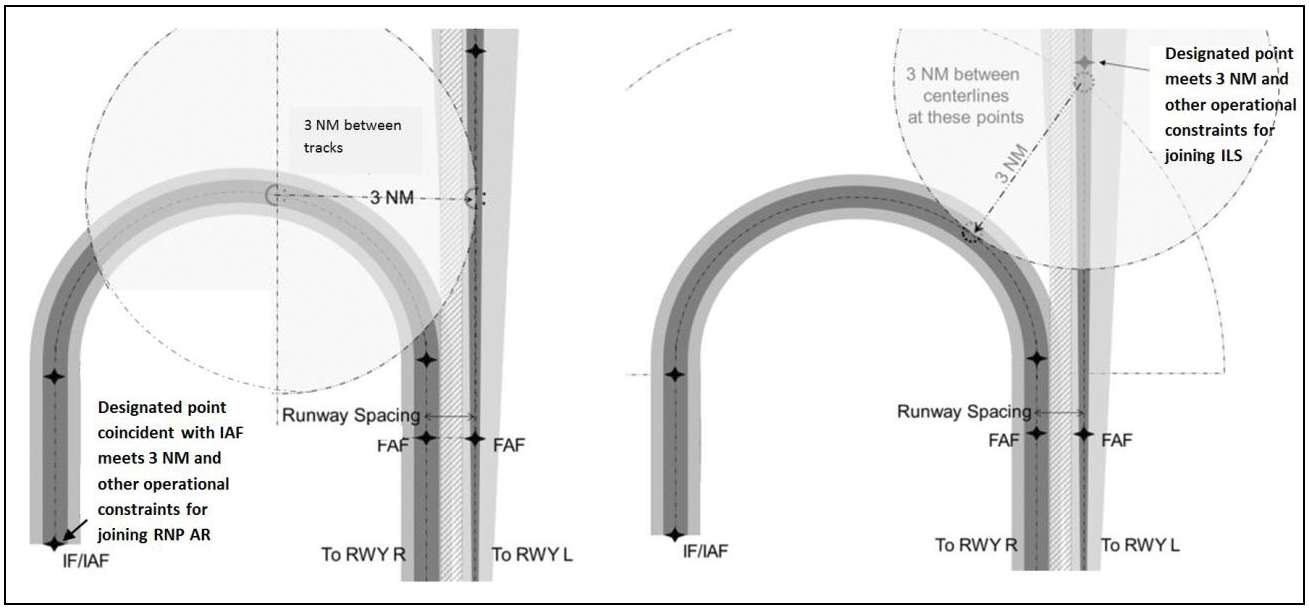
### Introduction

On 8 November 2018 the International Civil Aviation Organization (ICAO) will implement separation standards related to Required Navigation Performance Authorization Required (RNP AR) approaches in Document 4444, Procedures for Air Navigation Services – Air Traffic Management (PANS ATM), Section 6.7.3.5, “Determination that an aircraft is Established on RNP AR APCH.” NAV CANADA intends to incorporate the new separation standard “Established on RNP AR (EoR)” for parallel operations at Calgary International Airport (CYYC), effective 8 November 2018.

### EoR Concept

Established on RNP AR (EoR) refers to a new separation standard used during simultaneous parallel runway operations, taking advantage of the benefits of RNP AR containment. For the purpose of simultaneous parallel approach separation, the operation considers aircraft that are stabilized on an RNP AR approach procedure to be similarly-established to aircraft flying a straight-in instrument landing system (ILS) procedure.

When an aircraft is cleared for an RNP AR approach and past the intermediate approach waypoint (IWP) (intermediate approach fix [IF]), the aircraft is deemed to be **established** on the approach. The 1,000 feet vertical or 3 nautical miles (NM) lateral separation standard is not required between an aircraft established on RNP AR approach and an aircraft established on the approach for the adjacent parallel runway by a designated point on the approach.




**Established on RNP AR concept depicting the designated points at which aircraft are to be established on the approach**

RNP AR procedures at Calgary International Airport provide shorter track miles and optimized descent profiles, resulting in increased operational efficiency while also providing environmental benefits such as a reduction in noise and greenhouse gas emissions. EoR maximizes RNP AR benefits in busy parallel runway environments.

Use of EoR enhances safety for close-proximity parallel runway operations since there is a significant reduction in the exposure time where both aircraft are “side by side,” (e.g., at the same altitude on final approach.) In addition, the procedure enables earlier aircraft approach stabilization.

## EoR Operations at Calgary International Airport

EoR will be used during simultaneous parallel runway operations in both visual meteorological conditions (VMC) and instrument meteorological conditions (IMC). Automatic terminal information service (ATIS) shall indicate when simultaneous parallel runway operations are in effect.

Calgary International Airport RNP AR approach procedures are charted with the title RNAV (RNP) Y to all runways. Some approach procedure transitions commence at the same IWP (IF), serving different, adjacent parallel runways. All planned RNAV RNP procedures and the associated TRANSITION must be retrieved from the aircraft’s flight management system (FMS) database.

**CAUTION:** Due to the nature and proximity of simultaneous independent parallel approaches and procedures that commence at the same IWP (IF), incorrect runway selection will jeopardize separation and will likely require controller-initiated breakout intervention.

Arrivals planning RNAV (RNP) Y approaches at Calgary International Airport shall request the approach on initial contact with Calgary Arrival. To support EoR operations, RNAV (RNP) Y approaches shall be flown using autopilot until the aircraft passes the final approach fix (FAF). The use of autopilot assists air traffic control (ATC) in track conformance monitoring and reduces the likelihood of unnecessary ATC intervention.

If, at any stage of an RNP AR approach, a flight is **unable** to comply with an ATC clearance due to an avionics malfunction fault, FMS input error, or other non-normal condition, crews shall immediately advise ATC. Pilots shall **not** attempt to self-navigate or manually correct an RNP AR approach procedure deviation. The following phraseology must be used:

**Pilot:** UNABLE approach, REQUEST {*proposed course of action*}

**Example:**

**Pilot:** NAVCAN123 UNABLE MUPUV TRANSITION, REQUEST VECTORS TO FINAL

## Break-out Instructions

Due to the nature and proximity of independent simultaneous parallel runway operations, navigation errors and approach irregularities in the proximity of final approach may require ATC intervention to ensure safety. Should a situation arise where an aircraft being sequenced to the adjacent parallel runway appears to be "non-compliant" with the expected final approach course or track, ATC will intervene and issue break-out instructions to the non-blundering aircraft. It is essential that pilots follow the ATC break-out instructions precisely and expeditiously.

**CAUTION:** When issued break-out instructions, reaction time may be critical. If expeditious compliance is required, an ATC break-out instruction may include the word IMMEDIATELY.

ATC instructions associated with a break-out shall normally include a heading and/or altitude instruction using the following phraseology:

**Example:**

**ATC:** NAVCAN123, turn left immediately heading 310 degrees, climb to 7 000'

Break-out instructions will be issued on the arrival or final-approach monitor frequency. No dual-frequency monitoring is required.

## Further Information

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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 30/18

## AREA NAVIGATION AS PRIMARY APPROACH ON AUTOMATIC TERMINAL INFORMATION SERVICE

(Replaces AIC 13/16)

### Introduction

With the continued successful expansion of performance-based navigation (PBN), area navigation (RNAV) approach procedures are becoming the predominant and preferred approach type at many airports across Canada. Also, as more PBN procedures are developed and implemented, more than one RNAV approach procedure may be available for an active runway.

As such, NAV CANADA conducted an advertising trial to raise awareness of available RNAV approaches on automatic terminal information service (ATIS) as the primary approaches at several airports across the country. As a result of the trial and through extensive consultation with airline customers and operational staff, NAV CANADA will now adopt the practice of advertising RNAV approaches, where available and in suitable weather conditions, as the primary instrument flight rules (IFR) approach on ATIS.

### Purpose and Benefits

An ATIS broadcast is used by air traffic control (ATC) to reduce frequency congestion and provide essential, accurate and current information, such as local weather, active runways, approaches in use, and more. It is expected that pilots will also use the information to plan their arrival and approach.

Having RNAV as the primary approach can provide the following benefits:

- Avoids instrument landing system (ILS) glide path (GP) interruption and/or flight profile guidance interference from ground traffic.
- Provides for seamless transition from area navigation standard terminal arrival (RNAV STAR) to RNAV approach.
- Takes advantage of global navigation satellite system (GNSS) space-based systems and advancing aircraft avionics capabilities.
- Reduces the length and complexities of ATC clearances.

### Notifying Air Traffic Control on Initial Contact of Requested Approach Procedure

Pilots should plan their arrival based on the information on ATIS. Therefore, if RNAV is advertised as the primary approach, ATC will expect the aircraft to be set up for the RNAV approach.

At some airports in Canada, more than one RNAV approach (RNAV GNSS or RNAV RNP) may be available for one or more runways. Based on this, the ATIS message at airports where multiple RNAV approaches are available shall direct aircrews to inform ATC on initial contact of the requested approach procedure. ATC makes use of different control methods depending on the type of approach—failing to communicate the requested approach on initial contact may result in inefficient flight profiles, increased flying distances, and additional crew workload. When pilots inform ATC on initial contact of the requested approach, this assists ATC in planning and sequencing considerations, and reduces transmissions on the ATC frequency.

The intent of this inclusion to the ATIS message is for pilots to advise ATC of the requested approach on the **ACTIVE** IFR runway advertised on the current ATIS message. If planning to fly any procedure other than the one advertised on ATIS, pilots are reminded of the requirement to advise ATC regardless of the reason (training, weather, equipment, preference, etc.).

## ATIS message format

At airports where Terminal Control service is provided and RNAV approach procedures are being advertised as the primary approach on ATIS, the ATIS message shall request pilots to inform the Arrival controller on initial contact of their requested approach. At airports without a designated Terminal or Arrival controller, the ATIS message shall stipulate an ATC unit and frequency for pilots to inform ATC of their requested approach procedure.

ATIS message examples:

**Visual Metrological Conditions (VMC) weather conditions (Cloud ceiling 500 feet or more above minimum IFR altitude and visibility 3 miles or better):**

IFR APPROACH RNAV Z OR RNAV Y RWY XX, **PILOTS SHALL INFORM <ATS UNIT> ARRIVAL** OF REQUESTED APPROACH ON INITIAL CONTACT. LANDING AND DEPARTURES RWY XX

or

IFR APPROACH RNAV Z OR RNAV Y RWY XX, **PILOTS SHALL INFORM <ATS UNIT> CENTRE ON FREQUENCY 119.0** OF REQUESTED APPROACH ON INITIAL CONTACT. LANDING AND DEPARTURES RWY XX

**Instrument Metrological Conditions (IMC) weather conditions (Cloud ceiling less than 500 feet above minimum IFR altitude or visibility less than 3 miles – Include "ILS"**

IFR APPROACH RNAV Z, RNAV Y OR ILS RWY XX, **PILOTS SHALL INFORM ARRIVAL** OF REQUESTED APPROACH ON INITIAL CONTACT. LANDING AND DEPARTURES RWY XX

or

IFR APPROACH RNAV Z, RNAV Y OR ILS RWY XX, **PILOTS SHALL INFORM WINNIPEG CENTRE ON FREQUENCY 119.0** OF REQUESTED APPROACH ON INITIAL CONTACT. LANDING AND DEPARTURES RWY XX

In IFR weather conditions, pilots must not assume that ATC is expecting the flight to be setup for an ILS approach. Notifying ATC of the requested approach as per the ATIS message instruction is essential.

## Sample Phraseology

"Generic Airlines 123 …FL 200 for 16,000, information Delta, request RNAV Y Runway 32"

"Generic Airlines 123 …FL 200 for 16,000, information Delta, request ILS Runway 32"

The requested approach information should be included in the very first radio transmission with the unit/frequency identified in the ATIS message that will sequence the arrival to final and issue the approach clearance.

## Further Information

For further information, please contact:

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Jeff Dawson
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# AERONAUTICAL INFORMATION CIRCULAR 28/18

## TORONTO/LESTER B. PEARSON INTERNATIONAL (CYYZ) NEW NIGHT-TIME APPROACH PROCEDURES

### Purpose of Circular

This circular advises pilots of new night-time instrument approach procedures at Toronto/Lester B. Pearson International Airport (CYYZ).

### Background

While traffic levels are significantly lower at night than during the day, aircraft noise can be more noticeable for some residents during these periods as ambient community and household noise levels are typically lower. Lower demand and fewer aircraft at night provide the opportunity to employ routes that impact fewer people.

### New Procedures

Effective 8 November 2018, NAV CANADA will publish six new night-time approach procedures for CYYZ that better avoid residential areas. The new procedures will include:

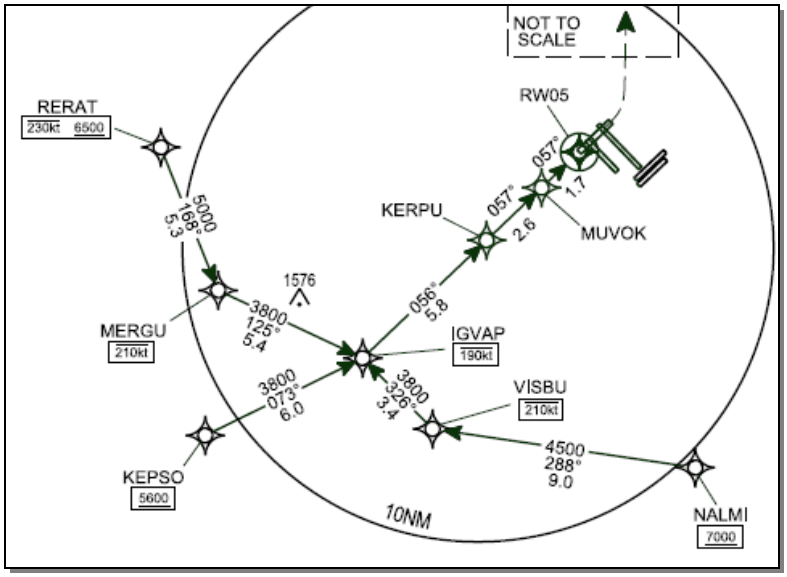
- RNAV (GNSS) X RWY 05
- RNAV (GNSS) X RWY 06L
- RNAV (GNSS) X RWY 06R
- RNAV (GNSS) X RWY 23
- RNAV (GNSS) X RWY 24L
- RNAV (GNSS) X RWY 24R

Rather than using straight-in or “T” transitions, these approach procedures employ transitions to final that, in some cases, could include multiple legs in the initial approach segment. Pilots can expect to be cleared directly to the initial approach waypoint, then subsequently cleared for the approach including the appropriate transition.

**Example clearance:**

> “GENERIC AIRLINES 123 PROCEED DIRECT RERAT. CLEARED RNAV X RWY 05 APPROACH, RERAT TRANSITION.”

Pilots would be expected to fly by RERAT and then follow the lateral and vertical profile of the area navigation (RNAV) approach procedure.




**Example of multiple leg segments on the new night-time approach for runway 05**

## Vertical Profile Considerations

The flight path for these approaches has been designed to minimize the noise footprint for the approach phase of the arrival. Therefore, their vertical profile has not been optimized for the transition from the standard terminal arrival (STAR) procedures for CYYZ. As the clearance to the initial approach waypoint (IAWP) will typically be issued in the terminal area, pilots should anticipate a possible change in vertical profile, after setting direct, that may leave the aircraft high. In some instances, pilots may need to use additional drag to regain the vertical profile or request additional spacing from air traffic control (ATC) in some STAR/runway pairings.

## Times of Use

The new CYYZ night-time approaches will be used between the hours of 12:30 a.m. and 6:30 a.m. local time. These procedures require relatively low traffic levels to be operationally feasible; spikes in traffic increase complexity and may result in vectors to final or other approach types to be used. If possible, usage would start earlier, but use will be limited to very low traffic periods overnight.

When the night-time approaches are in use, the CYYZ automatic terminal information service (ATIS) will advertise the appropriate RNAV (GNSS) X as the primary instrument flight rules (IFR) approach, and ATC will expect the aircraft to be set up for that approach. If unable to fly the approach advertised on ATIS, pilots are reminded of the requirement to advise Toronto Arrival on first contact that they are unable to comply with the ATIS, and that an alternate approach is necessary.

The night-time RNAV (GNSS) X approaches will only be advertised as the primary approach when conditions permit (cloud ceilings of 1,000 feet or more, visibility of 3 statute miles (SM) or better, GNSS expected to be available, etc.).

## Further Information

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# AERONAUTICAL INFORMATION CIRCULAR 26/18

## NEW PROCEDURES FOR THE USE OF A GROUND ADVISORY FREQUENCY AT MIRABEL (CYMX) AND RED DEER (CYQF) AERODROMES

(Supersedes AIC 9/18)

The purpose of this aeronautical information circular (AIC) is to inform pilots and air traffic services (ATS) of new procedures associated with the introduction of a ground advisory (GND ADV) frequency for use at **Montréal International / Mirabel Aerodrome (CYMX)** and **Red Deer Regional Aerodrome (CYQF)**.

### Procedures

- When the GND ADV frequency is operational, pilots operating on the apron and taxiways up to the hold line for runways in use at Mirabel or Red Deer Aerodromes will be exempt from maintaining a continuous listening watch and making reports on the mandatory frequency (MF) (*Canadian Aviation Regulations* [CARs] subsections 602.97 [2], 602.98 [1], and section 602.99). While operating on the ground, ATS will instruct pilots to make all frequency changes.
- New operating restrictions regarding communications on the MF and the GND ADV frequency will be specified by the Minister in the *Canada Flight Supplement* (CFS).
- New procedures for use of the GND ADV frequency at Mirabel and Red Deer Aerodromes will be published in appropriate aeronautical publications, as noted below.

Pursuant to CARs subsection 602.98 (1), the Minister has authorized NAV CANADA ATS to specify operating restrictions regarding communications intended for the MF, and assign a GND ADV frequency for use at Mirabel or Red Deer Aerodromes, for aircraft operating on the apron and taxiways up to the hold line before the runway in use. This action has been taken to reduce the frequency congestion on the MF and reduce safety hazards associated with such congestion.

Coincident with this action, during periods when the GND ADV frequency is operational, pilots will be exempt from the requirements of CARs sections 602.97, 602.98, and 602.99. Pilots must still adhere to CARs sections 602.100 to 602.103, inclusive.

Referenced CARs are reproduced in Appendix A on page 3 of this AIC. The exemption number and title are as follows: NCR-023-2018, “Exemption from Subsections 602.97 (2), 602.98 (1), and Section 602.99 of the Canadian Aviation Regulations.”

Commencing immediately NAV CANADA will provide ground traffic information, pre-taxi clearances (where available), and other advisory information on the GND ADV frequency.

During this change, the automatic terminal information service (ATIS) message will contain information to pilots regarding use of the GND ADV frequency.

The following aeronautical publications will be amended to reflect this additional frequency:

- *Canada Flight Supplement* (CFS).
- *Canada Air Pilot* (CAP) Instrument Procedures, General (GEN) Pages.
- CAP Instrument Procedures, Volume 3: Alberta, Saskatchewan, Manitoba.
- CAP Instrument Procedures, Volume 5: Quebec.
- CAP Instrument Procedures, Volume 6: Québec.

Refer to the CFS General section, CAP Volume 6 and the CAP GEN for a definition of Ground Advisory. Refer to the CFS Aerodrome Facility Directory, CAP Volume 3, CAP Volume 5, and CAP Volume 6 for more detailed information specific to these aerodromes, such as frequency and procedures.

Phraseology examples that pilots can expect from flight service specialists include:

- Instruction to change to the appropriate frequency (after receipt of advisory information):

| | |
|---|---|
| Pilot: | GOLF ALFA BRAVO CHARLIE ON BRAVO FOR RUNWAY TWO THREE AT ALFA |
| GND ADV | ROGER, CONTACT RADIO ON (*frequency*) |

- Recommended taxi routing during complex ground traffic situations:

  SUGGEST TAXI VIA BRAVO, ECHO, JULIET, ALFA. HOLD SHORT RUNWAY ONE ONE

  or

  RECOMMEND TAXI VIA TANGO, BRAVO, RUNWAY TWO FOUR

- When transferring aircraft to either frequency (if the FSS positions are combined):

  CHANGE TO MY FREQUENCY (*frequency*)

This AIC supersedes AIC 9/18 and will not expire unless superseded by a change in the level of service, or by amendment of, exemption from, or interpretation of the *Canadian Aviation Regulations*.

If you have any questions or concerns, please contact:

NAV CANADA
Attn: Neil Bennett, National Manager
Air Traffic Services, Operational Procedures and Proficiency

E-mail: Neil.Bennett@navcanada.ca

Jeff Dawson
Director, Standards, Procedures and International Coordination

## APPENDIX A

### Division V — Operations at or in the Vicinity of an Aerodrome

**General**

**602.96** (1) This section applies to persons operating VFR or IFR aircraft at or in the vicinity of an uncontrolled or controlled aerodrome.

(2) Before taking off from, landing at or otherwise operating an aircraft at an aerodrome, the pilot-in-command of the aircraft shall be satisfied that

(a) there is no likelihood of collision with another aircraft or a vehicle; and

(b) the aerodrome is suitable for the intended operation.

(3) The pilot-in-command of an aircraft operating at or in the vicinity of an aerodrome shall

(a) observe aerodrome traffic for the purpose of avoiding a collision;

(b) conform to or avoid the pattern of traffic formed by other aircraft in operation;

(d) where the aerodrome is an airport, comply with any airport operating restrictions specified by the Minister in the Canada Flight Supplement;

**VFR and IFR Aircraft Operations at Uncontrolled Aerodromes within an MF Area**

602.97 (1) Subject to subsection (3), no pilot-in-command shall operate a VFR or IFR aircraft within an MF area unless the aircraft is equipped with radio communication equipment pursuant to Subpart 5.

(2) The pilot-in-command of a VFR or IFR aircraft operating within an MF area shall maintain a listening watch on the mandatory frequency specified for use in the MF area.

**General MF Reporting Requirements**

**602.98** (1) Every report made pursuant to this Division shall be made on the mandatory frequency that has been specified for use in the applicable MF area.

(2) Every report referred to in subsection (1) shall be

(a) directed to the ground station associated with the MF area, if a ground station exists and is in operation; or

(b) broadcast, if a ground station does not exist or is not in operation.

**MF Reporting Procedures before Entering Manoeuvring Area**

**602.99** The pilot-in-command of a VFR or IFR aircraft that is operated at an uncontrolled aerodrome that lies within an MF area shall report the pilot-in-command’s intentions before entering the manoeuvring area of the aerodrome.

# AERONAUTICAL INFORMATION CIRCULAR 25/18

## MAXIMUM INDICATED AIRSPEEDS FOR HOLDING PATTERNS

The maximum holding airspeeds will be updated to reflect upcoming changes in instrument procedure design.

Unless otherwise noted on the charts, the following airspeeds will apply to all aircraft entering and flying holding patterns:

| Altitude (ASL) | Maximum Holding Airspeed (KIAS) |
|---|---|
| At or below 6 000 ft | 200 |
| Above 6 000 ft up to and including 14 000 ft | 230 |
| Above 14 000 ft | 265 |
| Shuttle climbs (all altitudes) | 310 (subject to CAR 602.32) |

**NOTES:**

1. At Canadian military airfields, the size of the protected airspace is for a maximum of 310 KIAS, unless otherwise noted.
2. For helicopter procedures (COPTER), the maximum holding airspeed is 90 KIAS for all altitudes, unless otherwise noted.

RAC subparts 10.7 and 10.9 of the *Transport Canada Aeronautical Information Manual* (TC AIM) will be amended to reflect these changes.

**These changes will take effect and will be reflected in the TC AIM on 11 October 2018 at 0901 Coordinated Universal Time (UTC).**

**The changes will be reflected in the *AIP Canada (ICAO)* on 08 November 2018 at 0901 UTC.**

For further information, please contact:

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Pierre Ruel
Chief Flight Standards

# AERONAUTICAL INFORMATION CIRCULAR 21/18

## DECOMMISSIONING OF THE WINDSOR "YQG" VOR/DME WINDSOR, ONTARIO

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for the Windsor "YQG" very high frequency omnidirectional range (VOR) / distance measuring equipment (DME).

The study concluded that given the comprehensive radar surveillance coverage, the numerous other nearby DMEs, and the propensity of area navigation (RNAV) global navigation satellite system (GNSS) equipped aircraft, the "YQG" VOR/DME was no longer required and should be decommissioned. This will result in the following changes:

- Establish RNAV (GNSS) instrument procedures (IPs) for both the Windsor and Leamington airports;
- Decommission the "YQG" VOR/DME; and
- Revoke the associated VOR/DME IPs at Windsor and Leamington airports.

**This change will take effect 13 September 2018 at 0901 Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

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# AERONAUTICAL INFORMATION CIRCULAR 17/18

## INSTRUMENT LANDING SYSTEM (ILS) REPLACEMENT PROGRAM

(Replaces AIC 16/15)

In accordance with NAV CANADA's Air Navigation System Plan (ANS Plan) and as part of life-cycle management, NAV CANADA will be continuing the national instrument landing system (ILS) replacement program in 2018.

This project involves replacing outdated localizers and glide path units with new state-of-the-art equipment. For the locations and timelines for replacements, please refer to the National ILS Replacement Program Schedule 2009-2018 on the NAV CANADA website:

<www.navcanada.ca>
Products and Services
OnBoard
Operational Initiatives
Instrument Landing System Replacement
National ILS Replacement Program Schedule 2009-2018

During the replacement period, ILS availability at the location where the replacement is taking place will be affected for approximately one to three months, depending on weather and installation factors. As well, new ILS systems do not generate a useable back-course signal; consequently, localizer back-course procedures will be replaced with global navigation satellite system (GNSS) approaches, where applicable.

Actual dates of scheduled outages will be published via NOTAM. Pilots should carefully monitor NOTAMs before and during the construction period for specific dates of outages or other related disruptions.

If you require any additional information regarding this notice, please contact:

NAV CANADA
ANS Programs Coordination
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Fax: 613-563-5602

James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 8/18

## DECOMMISSIONING OF THE SEPT-ÎLES (ZV) NON-DIRECTIONAL BEACON SEPT-ÎLES, QUEBEC

NAV CANADA, the country's provider of civil air navigation services, conducted an aeronautical study that reviewed the requirement for the non-directional beacon (NDB) at Sept-Îles, QC (ZV). The study concluded that there was no requirement for the NDB and recommended it be decommissioned.

**This change will take effect 19 July 2018 at 0901 Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended.

For further information, please contact:

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James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 5/18

## TORONTO INTERNATIONAL LESTER B. PEARSON AIRPORT AUTOMATIC TERMINAL INFORMATION SERVICE MESSAGE CHANGES

The purpose of this aeronautical information circular (AIC) is to inform flight crews and air traffic control (ATC) of an upcoming change to the CYYZ automatic terminal information service (ATIS) message.

On 1 April 2018, NAV CANADA will commence a 90-day trial of the CYYZ ATIS message containing the anticipated arrival/departure runways following quiet hour operations. This information will be available on the CYYZ ATIS message by 05:45 local time. The ATIS message will contain information only for flight crews regarding the anticipated CYYZ operation to be used following quiet hours; the ATIS message does not constitute a runway assignment. The current practice of runway assignment for aircraft arriving in CYYZ will remain on check-in on the arrival frequency. The Toronto area control centre enroute controllers will continue to inform the flight crews of the expected arrival runway between 60-80 distance measuring equipment (DME) from CYYZ. This does not preclude the possibility that a late runway change could occur for unforeseen circumstances; however, ATC will endeavour to avoid these situations.

This information is being provided to assist flight crews with their arrival briefings and flight management system (FMS) programming prior to “top of descent.” Flight crews are requested to refrain from asking questions on the frequency regarding the anticipated runway operations. Any concerns by flight crews during the trial period should be addressed through the chief pilot of the specific operator.

During the trial period, the ATIS message will contain one of the following information only statements after the current runway operation information:

- Flight crews should anticipate runway 23, 24L, 24R for arrival and departure after 1030Z.
- Flight crews should anticipate runway 05, 06L, 06R for arrival and departure after 1030Z.
- Flight crews should anticipate runway 33L and 33R for arrival and departure after 1030Z.
- Flight crews should anticipate runway 15L and 15R for arrival and departure after 1030Z.

**Example:**

CYYZ ATIS INFO V 0900Z

33011KT 15SM FEW018 FEW075 FEW240 M22/M27 A3000

THE APPROACH IS ILS RUNWAY 23. DEPARTURES RUNWAY 23.

VA. FLIGHT CREWS SHOULD ANTICIPATE RUNWAY 23, 24L, 24R FOR ARRIVAL AND DEPARTURE AFTER 1030Z. AIRCRAFT ARRIVING TORONTO WITH PERMISSION TO LAND PRIOR TO 1030Z SHALL NOTIFY TORONTO ATC ON INITIAL CONTACT.

GOOSE & SMALL BIRD ACTIVITY IN THE TORONTO INTERNATIONAL AREA.

MONITOR FREQUENCY 133.1 FOR NOTAM INFORMATION NOT AVAILABLE BY DATA LINK.

INFORM ATC THAT YOU HAVE INFORMATION VICTOR.

In the event that the trial is ended early, a subsequent AIC will be issued.

If you have any questions or concerns, please contact:

NAV CANADA
Attn: Neil Bennett, National Manager
Air Traffic Services, Operational Procedures and Proficiency Operations

E-mail: Neil.Bennett@navcanada.ca

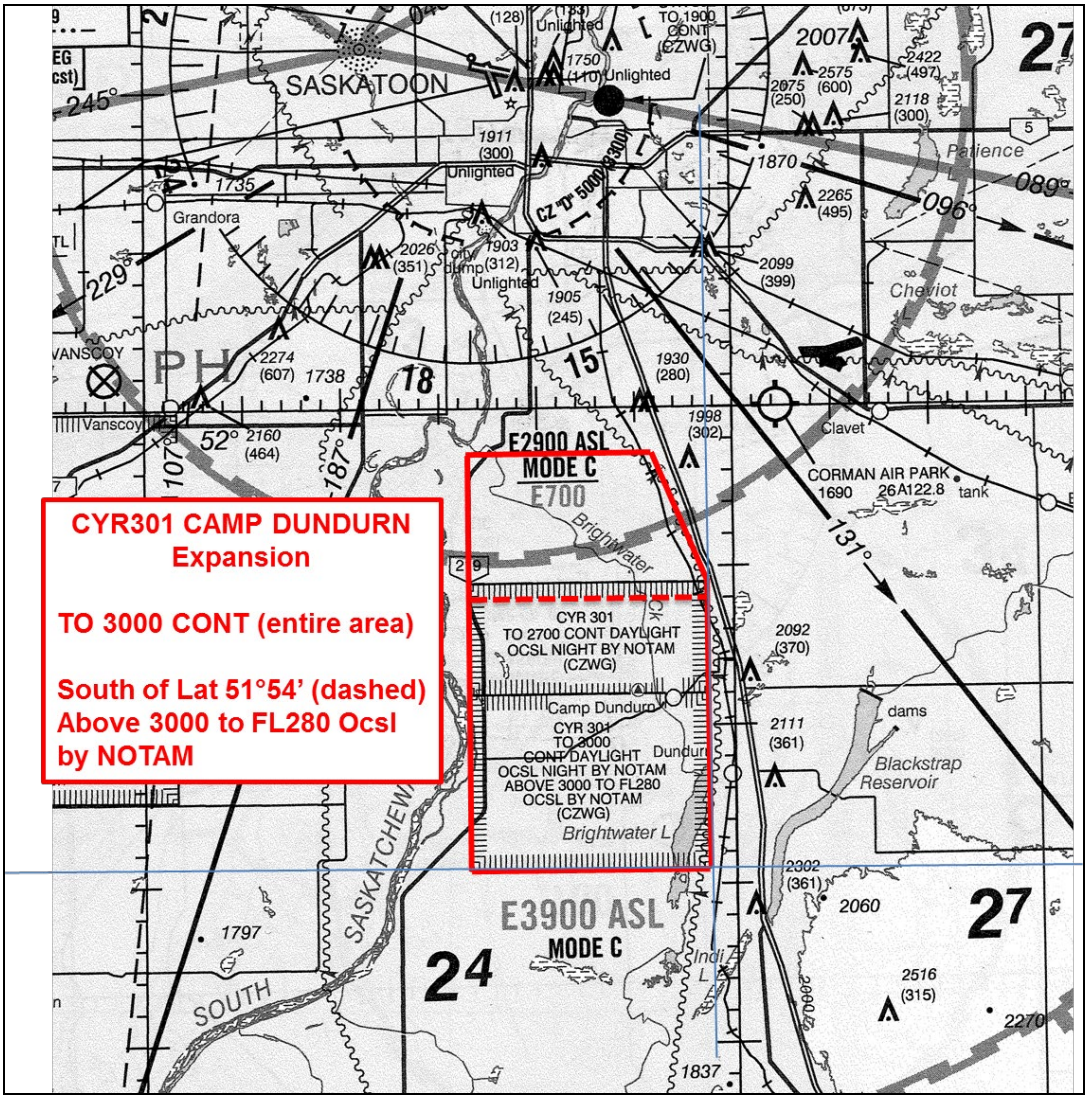
James Ferrier
Director, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 4/18

## EXPANSION OF RESTRICTED AIRSPACE
## CYR301 CAMP DUNDURN, SASKATCHEWAN

(Replaces AIC 1/18)

To facilitate military operations at Canadian Forces Base (CFB) Camp Dundurn, Saskatchewan, the Department of National Defence (DND) has requested a revision to the Class F restricted airspace CYR301 Camp Dundurn located 13 nautical miles (NM) south of the Saskatoon airport (see map sketch below for details on the revision). NAV CANADA conducted an aeronautical study that concluded the CYR expansion can be accommodated without impacting the safety and efficiency of aircraft operations.




**NOT FOR NAVIGATION**

**This change is planned to take effect 24 May 2018 at 09:01 Coordinated Universal Time (UTC).** The appropriate aeronautical publications will be amended. Note that on this publication date, this AIC will revert to an AIP Supplement for reference until the amended Regina visual flight rules (VFR) navigation chart (VNC) (AIR 5006) is published in July 2018.

For further information please contact:

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# AERONAUTICAL INFORMATION CIRCULAR 34/17

## NOTICE OF COMMENCEMENT OF PHASE 2B OF MANDATE FOR DATA LINK SERVICES IN THE NORTH ATLANTIC REGION

### Introduction

The mandate for data link services in the North Atlantic (NAT) region commenced 07 February 2013, initiating a phased approach that would see the area of applicability expand incrementally until completion in 2020. In accordance with the vertical and horizontal boundaries described below, all aircraft are required to be fitted with, and using, controller-pilot data link communications (CPDLC) and automated dependent surveillance–contract (ADS-C) equipment (see North Atlantic Operations Bulletin 2012-031).

### Purpose of Circular

This aeronautical information circular (AIC) confirms plans to implement Phase 2B of the NAT Data Link Mandate (DLM) on 07 December 2017, which encompasses flight level (FL) 350 to FL 390 (inclusive) throughout the International Civil Aviation Organization (ICAO) NAT region.

The information provided is intended for publication in the Spring 2018 Transport Canada Aeronautical Information Manual (TC AIM – TP 14371E).

### Background

As agreed at the 49th meeting of the North Atlantic Systems Planning Group (NAT SPG), the objectives of the NAT DLM are to enhance communication, surveillance and air traffic control (ATC) intervention capabilities in the NAT region. This is done to reduce collision risk and enable the NAT target level of safety to be met, particularly in the vertical plane. ADS-C provides capabilities for conformance monitoring of aircraft adherence to cleared route and FL, thereby significantly enhancing safety in the NAT region. ADS-C also facilitates search and rescue operations and the capability to locate the site of an accident in oceanic airspace. CPDLC significantly enhances air/ground communication capability and therefore controller intervention capability.

The NAT SPG goals for the expansion of the NAT DLM to increase the level of aircraft data link system equipage, are in concert with the International Civil Aviation Organization (ICAO) Global Air Navigation Plan (GANP) (Doc 9750) Aviation System Block Upgrade (ASBU) Block 0, Module B0-40 (2013-2018). This module calls for safety and efficiency improvements for enroute operations supported by data link. The NAT SPG objectives are that by 2018, 90% of aircraft operating in the NAT region airspace at FL 290 and above will be equipped with Future Air Navigation Systems 1/A (FANS 1/A) (or equivalent) ADS-C and CPDLC systems and that by 2020, 95% of aircraft operating in that airspace, will be so equipped.

## Planned Vertical and Horizontal Boundaries for NAT Region DLM Airspace

| | |
|---|---|
| **Phase 2A, commenced 05 February 2015** | FL 350 to FL 390 (inclusive) all tracks within the NAT OTS. This phase applies to all aircraft operating on or at any point along the tracks. |
| **Phase 2B, commencing 07 December 2017** | FL 350 to FL 390 (inclusive) throughout the ICAO NAT region. |
| **Phase 2C, commencing 30 January 2020** | FL 290 and above throughout the ICAO NAT region. |

## Airspace Not Included in NAT Region DLM Airspace

- Airspace north of 80° North (N). (Airspace north of 80°N lies outside the reliable service area of geostationary satellites);
- New York Oceanic flight information region (FIR); and
- Airspace where an air traffic service (ATS) surveillance service is provided by means of radar, multilateration, and/or automatic dependent surveillance–broadcast (ADS-B) coupled with very high frequency (VHF) voice communications, as depicted in State Aeronautical Information Publications (AIP), provided the aircraft is suitably equipped (transponder/ADS-B extended squitter transmitter).

## Estimated Extent of ATS Surveillance Airspace in the NAT Region

For overall awareness purposes, Figure 1 depicts the estimated extent of ATS surveillance airspace where non-data link equipped aircraft might be allowed to operate within the NAT DLM airspace:

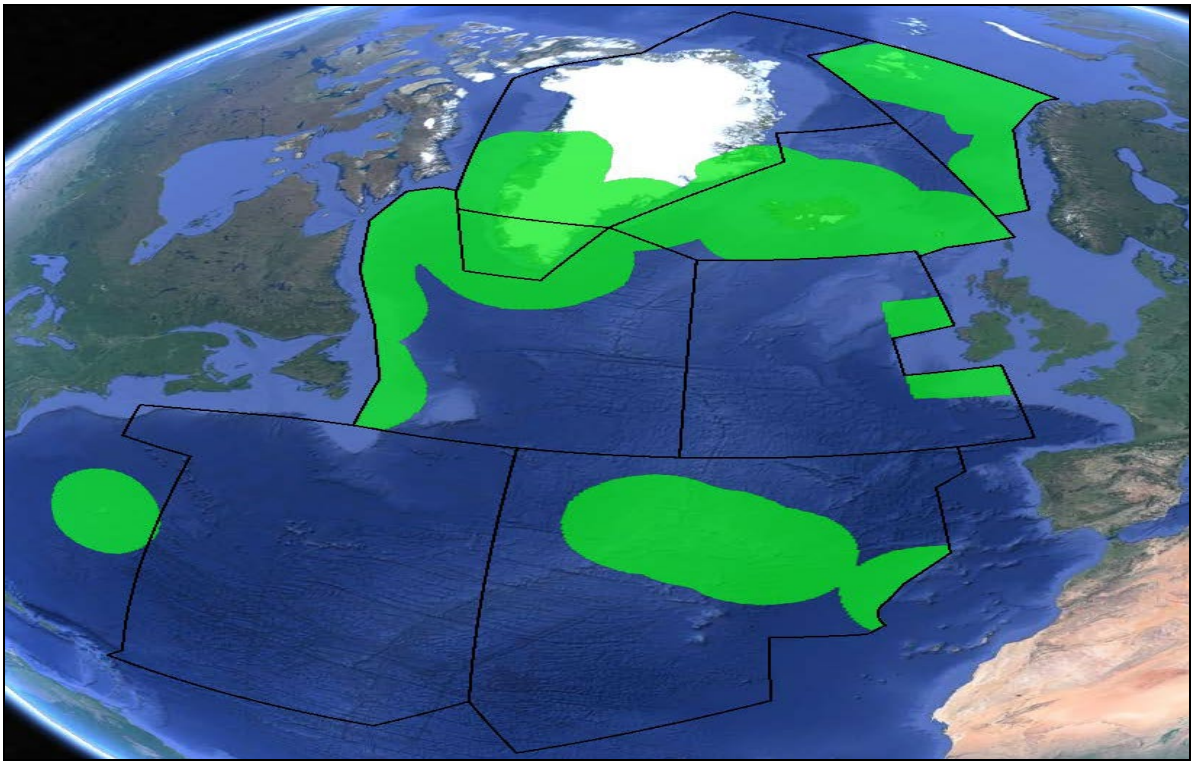

**Figure 1**

## Guidance for Trans-Atlantic Flight Planning by Non-Data Link Aircraft

Figure 2 depicts the ATS surveillance airspace where suitably equipped aircraft (transponder/ADS-B extended squitter transmitter) will be allowed to operate without restrictions.

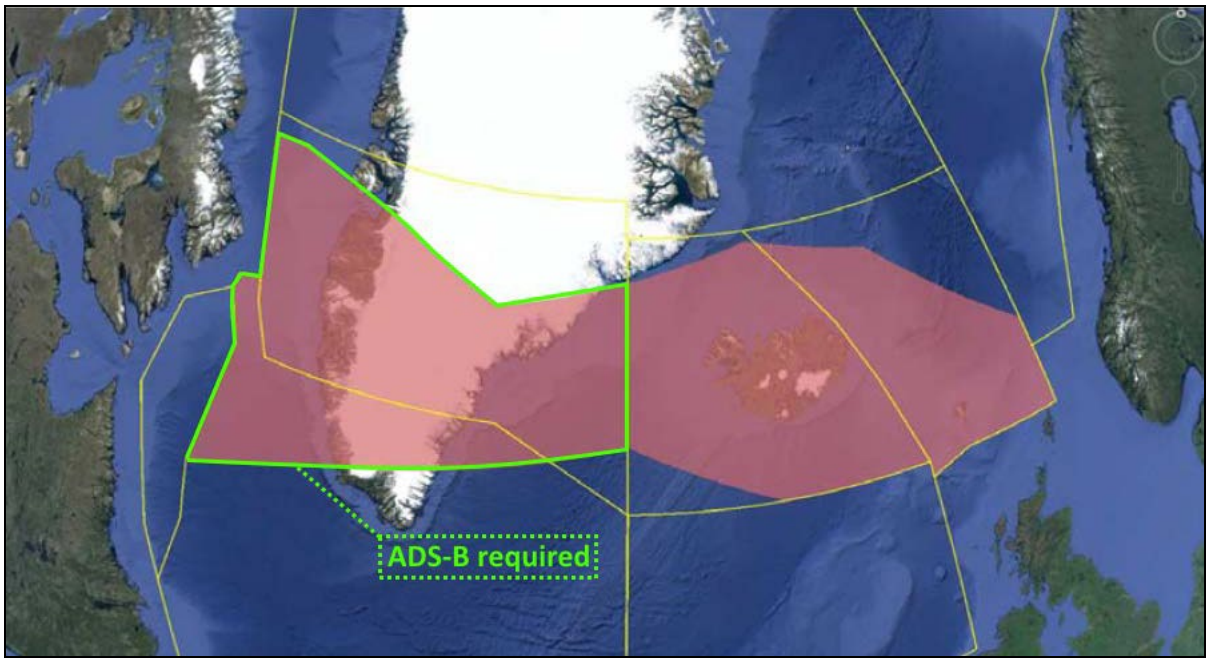


**Figure 2**

Commencing 07 December 2017, aircraft not equipped with FANS 1/A (or equivalent) systems will be allowed to operate within the area depicted above at DLM-designated flight levels, provided the aircraft is suitably equipped (transponder/ADS-B extended squitter transmitter).

For planning purposes, this area is bounded by the following:

| | |
|---|---|
| **Northern boundary:** | 64N000W – 68N010W – 69N020W – 68N030W – 67N040W – 69N050W – 69N060W – BOPUT. |
| **Southern boundary:** | GUNPA (61N000W) – 61N007W – 6040N010W – RATSU (61N010W) – 61N020W – 63N030W – 62N040W – 61N050W – SAVRY |

## Flights Allowed to Flight Plan into NAT Region DLM Airspace

The following flights will be permitted to flight plan to enter the NAT DLM airspace:

1. Flights equipped with and prepared to operate FANS 1/A (or equivalent) CPDLC and ADS-C data link systems. (NAT Regional Supplementary Procedures (ICAO Doc 7030) paragraphs 3.3.2 and 5.4.2 apply for CPDLC and ADS-C respectively); and
2. Non-equipped flights that file STS/FFR, HOSP, HUM, MEDEVAC SAR, or STATE in Item 18 of the flight plan. (Depending on the tactical situation at the time of flight, however, such flights may not receive an ATC clearance that fully corresponds to the requested flight profile).

## Operational Policies Applicable to NAT Region DLM Airspace

Any aircraft not equipped with FANS 1/A (or equivalent) systems may request to climb or descend through the NAT DLM airspace. Such requests, as outlined below, will be considered on a tactical basis. This provision will not be applicable after commencement of Phase 2C.

- Altitude reservation (ALTRV) requests will be considered on a case-by-case basis (as is done today regarding NAT minimum navigation performance specifications [MNPS] airspace), irrespective of the equipage status of the participating aircraft.
- If a flight experiences an equipment failure **AFTER DEPARTURE** that renders the aircraft unable to operate FANS 1/A (or equivalent) CPDLC and/or ADS-C systems, requests to operate in the NAT DLM airspace will be considered on a tactical basis. Such flights must notify ATC of their status **PRIOR TO ENTERING** the airspace.
- If a FANS 1/A data link equipment failure occurs while the flight is **OPERATING WITHIN NAT DLM AIRSPACE**, ATC must be immediately advised. Such flights may be re-cleared so as to avoid the airspace, but consideration will be given to allowing the flight to remain in the airspace, based on tactical considerations.
- If a flight experiences an equipment failure **PRIOR** to departure that renders the aircraft non-DLM compliant, the flight should re-submit a flight plan so as to remain clear of the NAT regional DLM airspace.

## European and North Atlantic (EUR/NAT) Interface Flight Planning

Where the NAT interfaces with the European (EUR) data link implementation rule airspace, procedures will be established by the air navigation service providers (ANSP) concerned to facilitate the vertical transition of traffic to and from the NAT region DLM and the EUR data link implementation rule areas. The transition will be conducted as soon as is practicable by the initial EUR domestic area along the common FIR/upper flight information region (UIR) boundary bordering the NAT region DLM. The operator and the ANSP must ensure that the vertical transition is complete prior to crossing any **subsequent** FIR/UIR boundary.

## Further Information

For further information, please contact:

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# AERONAUTICAL INFORMATION CIRCULAR 29/17

## AIRCRAFT IDENTIFICATION AND AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST FLIGHT IDENTIFICATION

### Purpose of Circular

This aeronautical information circular highlights the requirement for Aircraft Identification (ACID) and Automatic Dependent Surveillance-Broadcast (ADS-B) Flight Identification (Flight ID) to match.

### Background

ADS-B is a surveillance system that uses an aircraft's Mode S transponder to relay a range of aircraft parameters such as identification, position, and altitude to air traffic services. ADS-B uses two means of identifying transmitting aircraft. The first is the aircraft's Mode S address, also known as the International Civil Aviation Organization (ICAO) 24-bit aircraft address. The second is the Flight ID which is the aircraft's call sign.

Every aircraft has a unique 24-bit aircraft address assigned by the State of aircraft registry. In Canada, the aircraft address is printed at the bottom of the aircraft's certificate of registration in three formats: binary (24 ones and zeros), octal (eight numerical digits), and hexadecimal (six alpha-numeric digits). The aircraft address is entered into the transponder during installation, and it remains associated with that specific aircraft registration.

Flight ID is the ACID entered on the ICAO flight plan in item 7. The Flight ID enables the air traffic service's surveillance displays to correctly correlate with the flight plan information. To ensure uninterrupted surveillance separation services, the Flight ID must **exactly** match the ACID entered in item 7 of the ICAO flight plan.

### Use of Flight ID without an Assigned Radiotelephony Designator or Flight Number

For general aviation transponder installations, Flight ID will be equal to the aircraft registration. In these cases, ADS-B installers should program Flight ID during the initial configuration. After this, the Flight ID will not be an editable field during normal operation. Aircraft operators should obtain confirmation from installers that the Flight ID entered into the transponder matches the aircraft registration, without any leading zeros, hyphens, dashes or added spaces. Aircraft operators are also reminded that trading transponders between aircraft or using a loaner transponder will necessitate reprogramming the correct aircraft address and flight ID into the configuration settings.

### Use of Flight ID with an Assigned Radiotelephony Designator followed by a Flight Number

Air operators that use assigned three-letter radiotelephony designators followed by a flight number may require a different Flight ID for each flight segment. In these operations, prior to taxi for each departure, the flight crew enters the Flight ID through either a transponder control panel or through the flight management system (FMS). Pilots must always ensure that the Flight ID entered is **exactly** the same as the ACID that was filed in item 7 of the ICAO flight plan. Flight ID should never contain hyphens, dashes, or added spaces, and zeros should only appear if they form part of the ACID.

**Example**

Generic Airlines Flight 045, using ICAO assigned airline code GEN. If entered in item 7 on the ICAO Flight Plan as GEN045, then the Flight ID input by pilot in the FMS must be entered as GEN045 (and not GEN45, GEN_045, or as the aircraft registration CFABC).

Air operators are strongly encouraged to include proper Flight ID entering procedures on checklists for FMS initialization, particularly for departures where the avionics have not been reset through a power-down cycle.

## Further Information

For further information please contact:

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# AERONAUTICAL INFORMATION CIRCULAR 19/17

## OBSTACLE CLEARANCE

When a direct route is given, air traffic control (ATC) is responsible for obstacle clearance. Provided that the altitude is at or above the minimum instrument flight rules (IFR) altitude for the controlled airspace where the pilot intends to operate, ATC may use “direct” in a route clearance. ATC may clear aircraft that are traversing airways or air routes below the minimum en route altitude (MEA), but not below the applicable minimum IFR altitude.

Within air traffic service (ATS) surveillance coverage, it is common for controllers to issue the minimum vectoring altitude (MVA) when issuing direct routes. An MVA can be lower than a published minimum IFR altitude (minimum sector altitude [MSA], minimum obstacle clearance altitude [MOCA], MEA, or area minimum altitude [AMA]).

### Conclusion

All ATC assigned altitudes provide obstacle clearance.

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# AERONAUTICAL INFORMATION CIRCULAR 18/17

## TOFINO/LONG BEACH REMOTE AERODROME ADVISORY SERVICE PROVISION TRANSFER OF SERVICE PORT HARDY FLIGHT SERVICE STATION

(Replaces AIC 15/17)

Effective 1 June 2017 Tofino/Long Beach remote aerodrome advisory service (RAAS) will be provided by Port Hardy flight service station (FSS) (Hardy Radio).

The following publications will be updated to reflect these changes: *Canada Flight Supplement* (CFS), *Canada Air Pilot* (CAP) Volume 2, and *General Pilot Handbook* (GPH) 200 Volume 2.

The following publications will be updated to reflect these changes at the next publication date: visual flight rules (VFR) navigation chart (VNC) (AIR 5004), En route Low Altitude (LO) Chart 01/LO Chart 02, En route High Altitude (HI) Chart 03/HI Chart 04, and *Canada Water Aerodrome Supplement* (CWAS).

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# AERONAUTICAL INFORMATION CIRCULAR 12/17

## LASER ATTACKS

### Introduction

NAV CANADA recently sent out a memorandum to all air traffic services (ATS) personnel that provided more direction regarding laser attacks. The new direction will be integrated into the next full release of Manual of Air Traffic Services (MATS).

### Purpose of this circular

Laser attacks constitute an ever-increasing problem across Canada. The purpose of this aeronautical information circular (AIC) is to standardize the reporting process for laser attacks and the information gathered by ATS personnel. Although some regions seem to encounter few incidents compared to other regions, it is important that this problem be addressed uniformly and be taken seriously. Laser Attacks are the second most reported item when it comes to aviation occurrences, most of which are reported in the Montreal, Toronto, and Vancouver flight information regions (FIRs).

### ATS Direction in MATS

ATS personnel are directed to obtain the following information when informed that an aircraft has been illuminated by a laser or other directed bright light:

- Date, time, and location of occurrence
- Aircraft identification, type, altitude, heading, and flight conditions
- If known, light source location, direction, beam colour, and length of exposure
- Effect of illumination on crew members
- Actions taken by the crew
- Pilot opinion about whether illumination was accidental or intentional

It is important that pilots continue to make these reports and pass on as much information as possible.

ATS personnel will also warn other aircraft operating in the same area, advise local law enforcement, pass the information on to the area control centre (ACC) shift manager, and file an aviation occurrence report (AOR). Pilots will be asked to contact the shift manager once the aircraft is on the ground.

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# AERONAUTICAL INFORMATION CIRCULAR 4/17

## REQUIREMENT TO MAINTAIN LISTENING WATCH AND ESTABLISH COMMUNICATION WHEN USING DATALINK

NAV CANADA has implemented controller-pilot data link communications (CPDLC) throughout most of the Canadian Domestic Airspace (CDA) and within the Gander oceanic control area (OCA). Automatic dependent surveillance – contract (ADS-C) is used in lieu of voice position reporting in the Gander OCA and in some parts of the CDA. Details on the CPDLC and ADS-C services supported by NAV CANADA are provided in the *Transport Canada Aeronautical Information Manual* (TC AIM) and in other aeronautical information circulars (AIC).

Data link communications provide many benefits over voice communications. However, CPDLC and ADS-C do not negate certain requirements associated with voice communications. Regardless of whether CPDLC or ADS-C is being used, pilots shall ensure that a listening watch is maintained and communication is established with the air traffic control unit, on the appropriate frequency.

This AIC will remain in effect until 30 April 2018.

### Further Information

For further Information, please contact:

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# AERONAUTICAL INFORMATION CIRCULAR 1/17

## GLIDE PATH FLUCTUATIONS CAUSED BY MOVEMENT OF GROUND TRAFFIC

This aeronautical information circular (AIC) will advise operators of the conditions under which glide path signals will be protected, and will detail pilot responsibilities to notify air traffic controllers (ATC) when conducting auto-land or similar approaches.

## Background

In recent years, there has been an increase in reports from both pilots and air traffic controllers of instances of glide path fluctuations while an aircraft is navigating on the instrument landing system (ILS). This may occur when aircraft or vehicles are moving through the glide path critical area, causing interference with the signal. In several cases, the aircraft automation/autopilot followed momentary ILS fluctuations, causing the aircraft to pitch and roll.

It has become evident that further clarity is required regarding when ILS signals are protected while an aircraft is established on an ILS approach. ILS signals will only be protected under the conditions described below.

### Glide Path Signal Protection Procedures

A controller will protect the glide path signal when:

1. The ceiling is less than 1,000 feet or visibility is less than 3 miles, or both; and
2. The arriving aircraft is inside the final approach fix (FAF) on an ILS approach.

**Note:** At uncontrolled airports, aircraft maneuvering on the ground may enter ILS critical areas during taxi, takeoff, or landing.

The ILS critical areas are **not** protected when aircraft are outside the FAF. Furthermore, with the exception of CAT II/III operations, localizer signal protection is not applied when a preceding aircraft will pass over or through the critical area while taking off, landing, or executing a missed approach on the same or another runway. Pilots must be aware of the ILS signal interference threats as well as flight display indications and autopilot functionality during manual or fully coupled ILS approaches.

### Auto-Land or Practice Low Visibility Approaches

In situations where protection of the ILS signal is not required and pilots wish to conduct auto-land or practice low visibility approach procedures, advise the controller of your intentions early enough so that they can either protect the ILS critical area or advise you that, due to traffic, ILS critical area protection is not possible. If ILS critical area protection is not possible, the controller will use the phrase “ILS CRITICAL AREA NOT PROTECTED.” It then becomes the pilot’s responsibility to continue or discontinue in the particular approach mode.

## Advisory Notice

An ILS performance report is available for all Canadian runways on the NAV CANADA website.

**Note:** COM Sections 3.12.1 to 3.12.3 of the TC AIM should be reviewed to ensure an understanding of ILS operating characteristics. Appendix A, items 1, 2, and 3 of TP 1490, MANUAL of ALL WEATHER OPERATIONS should also be reviewed for an understanding of ILS CRITICAL SENSITIVE AREAS.

## Publication

The *Transport Canada Aeronautical Information Manual* (TC AIM – TP14371E) will be amended in the April 2017 release.

## Validity

Effective 5 January 2017. For further information, please contact:

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# AERONAUTICAL INFORMATION CIRCULAR 11/16

## DEPICTION OF FIVE-NAUTICAL-MILE BUFFERS AROUND SPECIAL USE AIRSPACE CONTAINED WITHIN CANADIAN FLIGHT INFORMATION REGIONS

(Supersedes AIC 19/15)

### Introduction

To assist in efficiently planning routes that avoid restricted areas in Canadian flight information regions (FIRs), NAV CANADA is providing customers with depictions of currently published special use airspace that also show a surrounding five-nautical-mile buffer zone through which flight will not be permitted. The depictions are intended to provide a visual representation for operators to consider when preparing flight plans involving operations at and above flight level (FL) 290.

This aeronautical information circular (AIC) supplements the information contained in AIC 19/15 with three additional restricted areas (CYR664, CYR665, and CYR666) and associated five-nautical-mile buffer zones from the Montreal FIR.

The information provided is intended for publication in the Fall 2016 AIP Canada (ICAO).

### Background

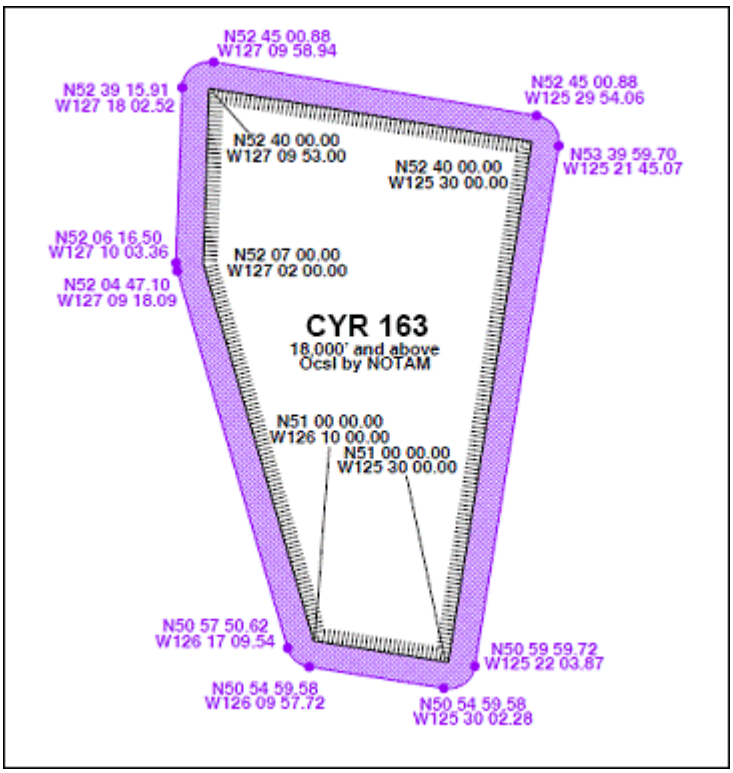
As described in the TC AIM – TP 14371E, special use airspace may be classified as “Class F advisory” or as “Class F restricted” within Canadian Domestic Airspace (CDA). In accordance with International Civil Aviation Organization (ICAO) requirements, special use airspace may also be classified as a danger area when established over international waters, but controlled by Canadian air traffic control (ATC). Class F airspace is described in the *Designated Airspace Handbook* (DAH, TP 1820E) and depicted on HI or LO charts, as applicable.

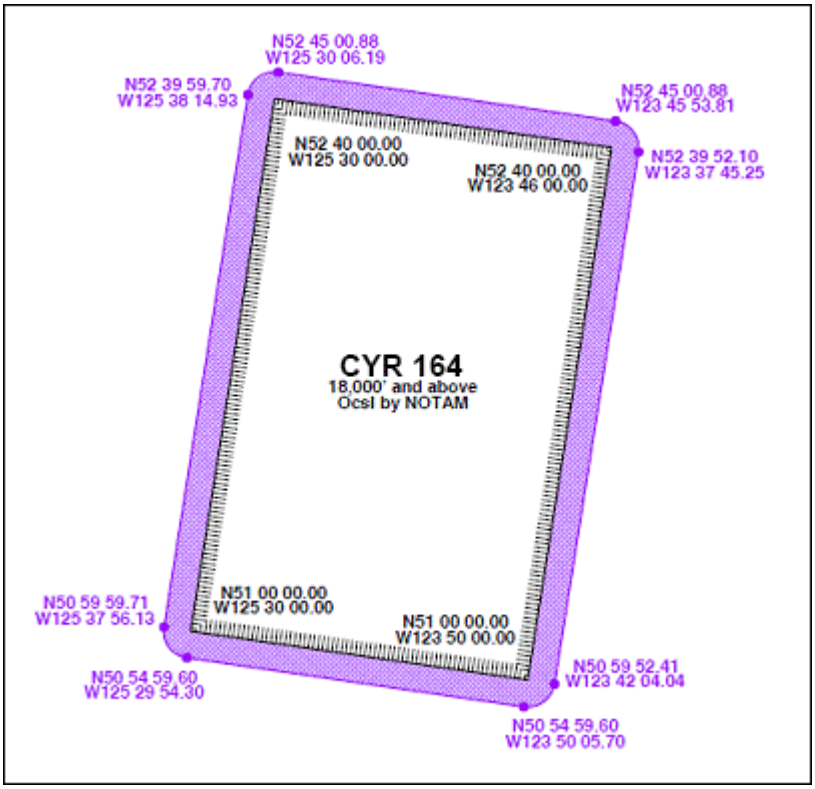
Canadian controllers apply a five-nautical-mile separation minimum to en route aircraft being provided with air traffic service (ATS) surveillance service from the boundary of special use airspace. NAV CANADA customers have indicated that it would be beneficial to have visual indication of this buffer zone.

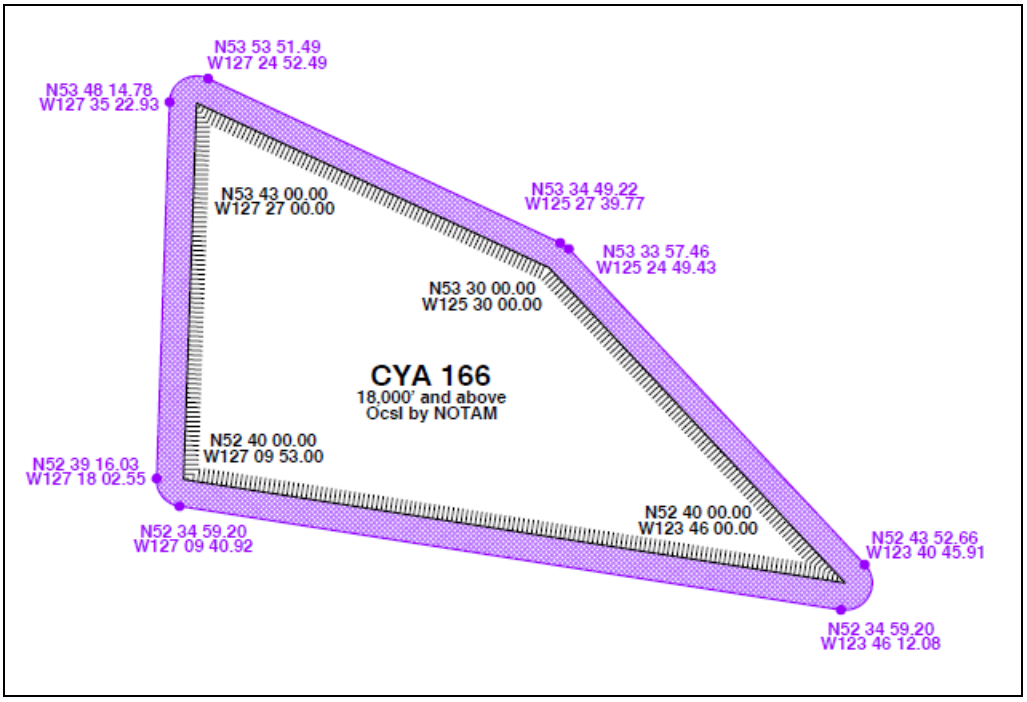
### Flight Planning Considerations

The depicted buffers around the boundaries of special use airspace that is at or above flight level (FL) 290 have been constructed using parallel lines measuring five nautical miles from the straight segments and using five-nautical-mile arcs from the curved portions. Operators are advised that the arc points represented as coordinates of latitude and longitude are not to be used as routing waypoints.

**Vancouver FIR**

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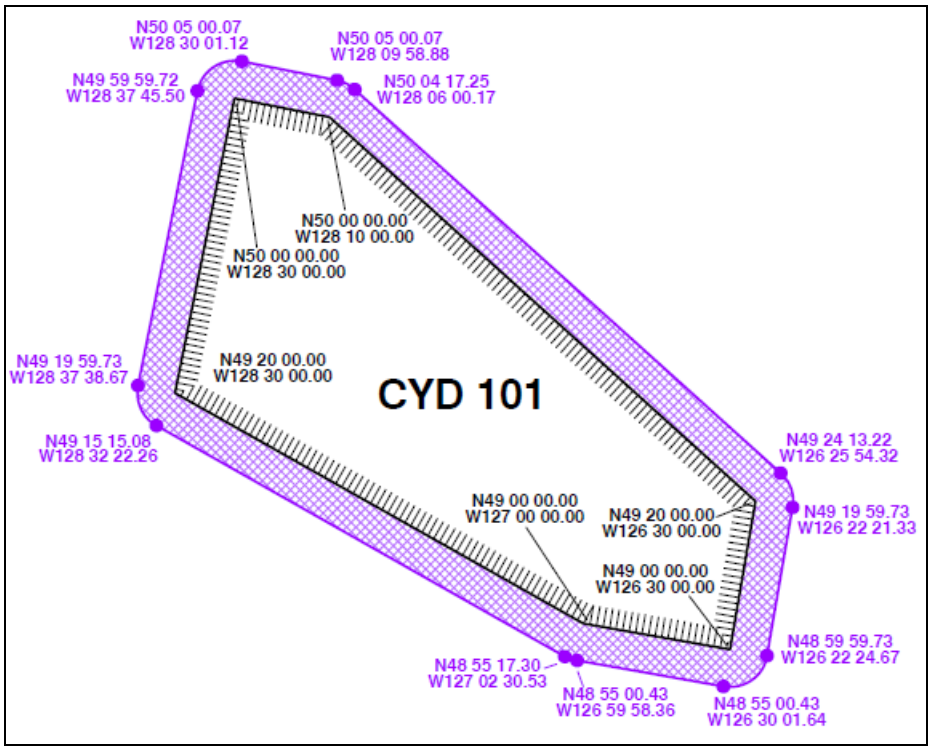
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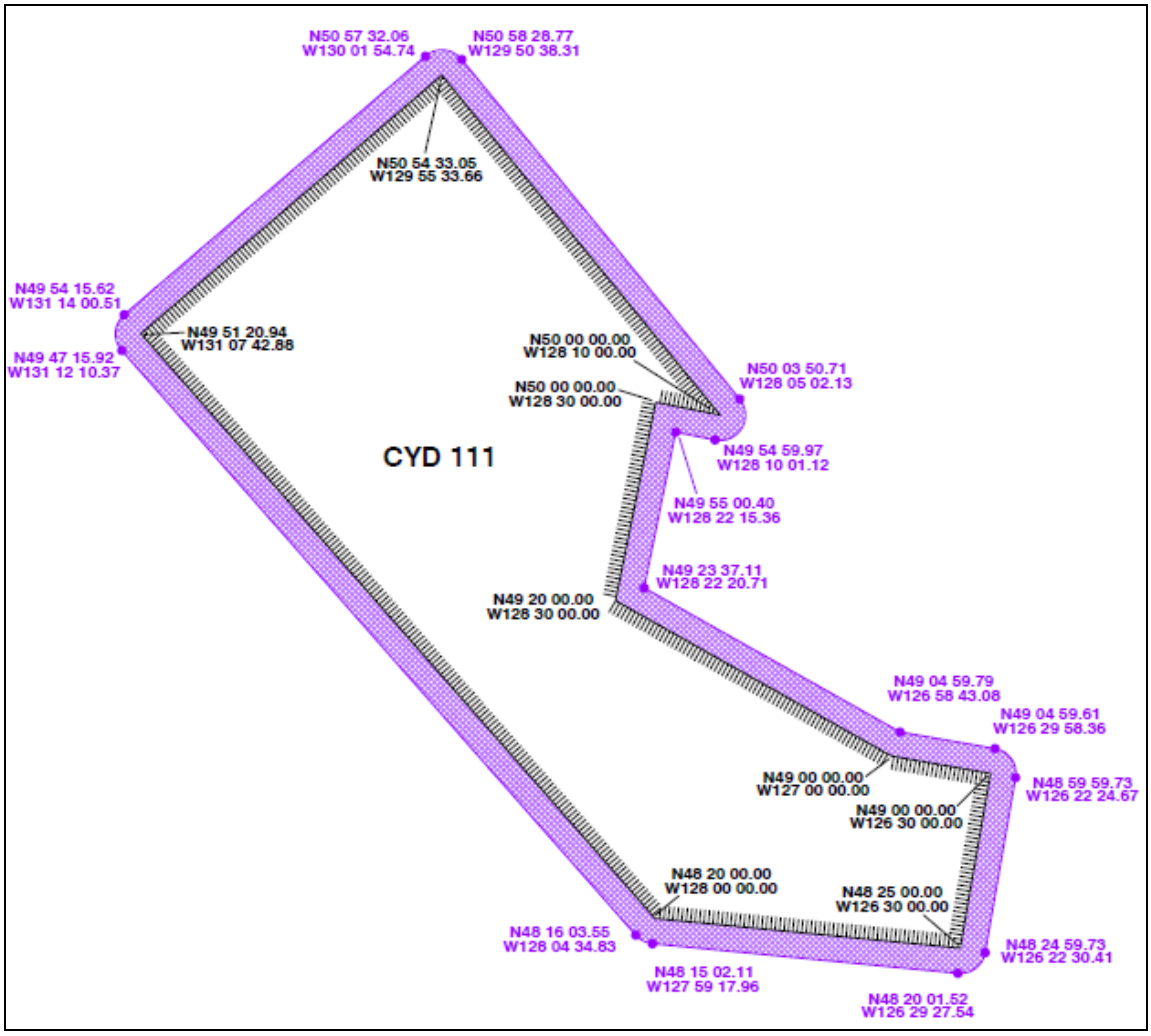
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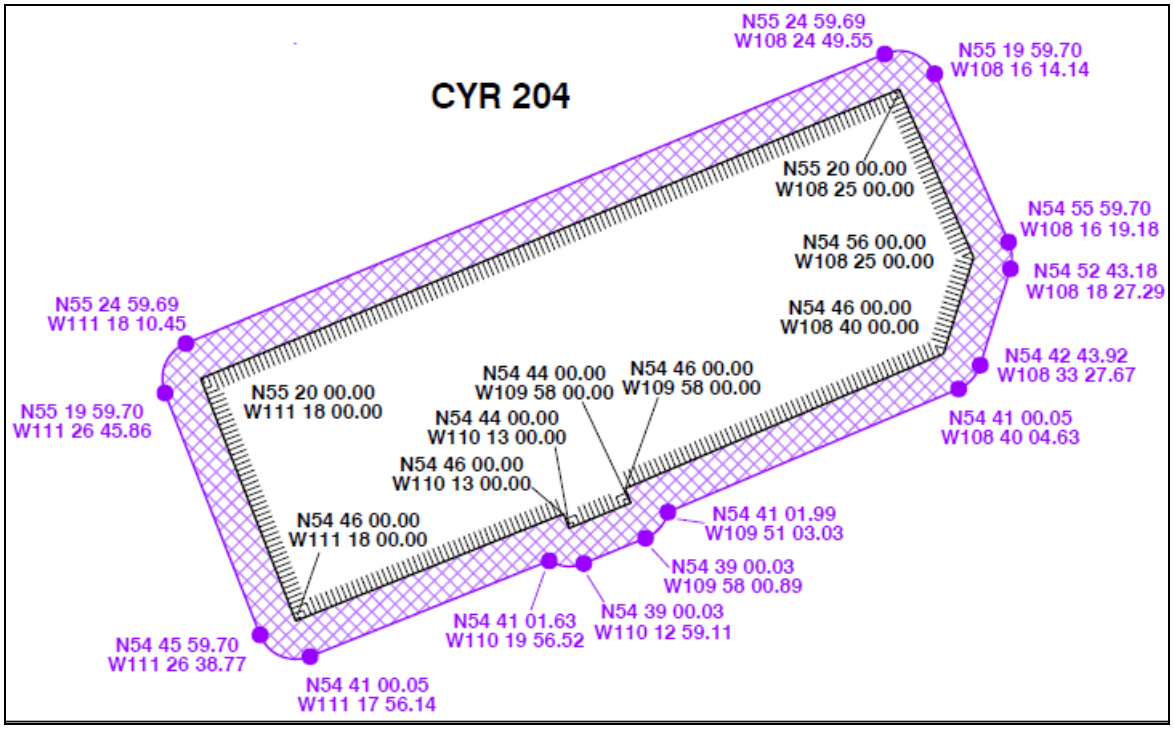
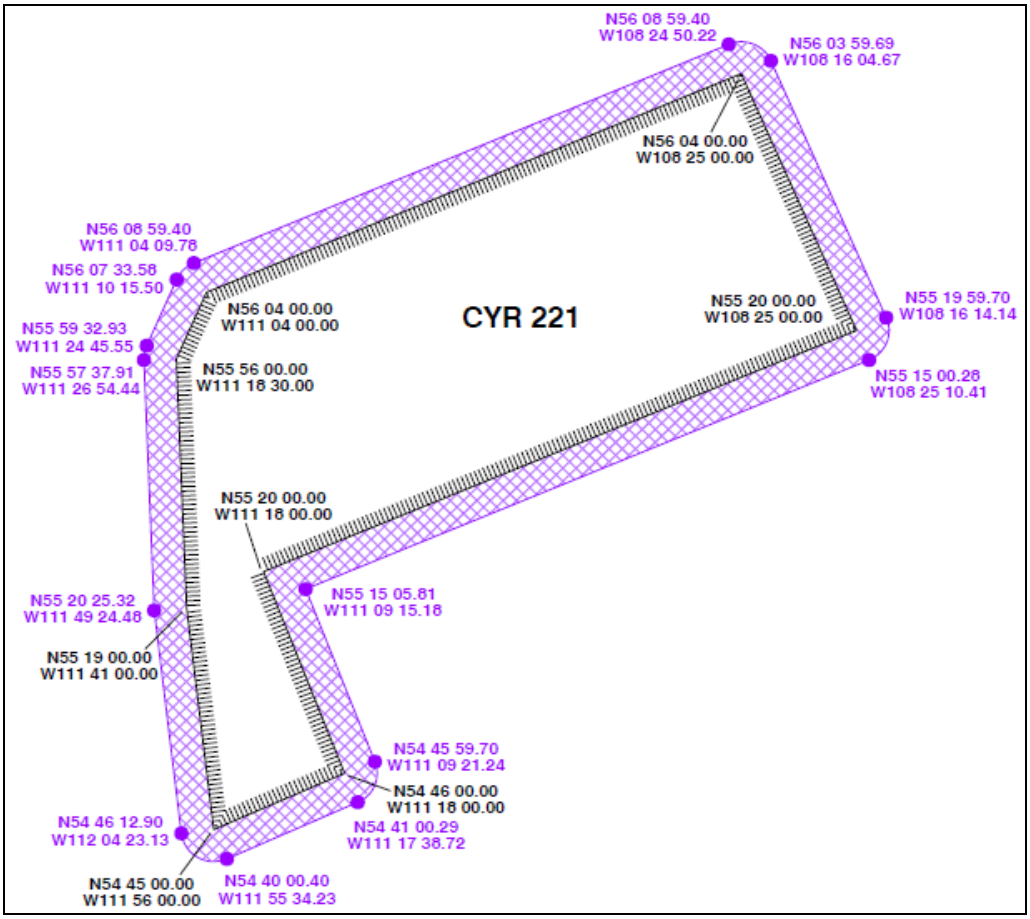
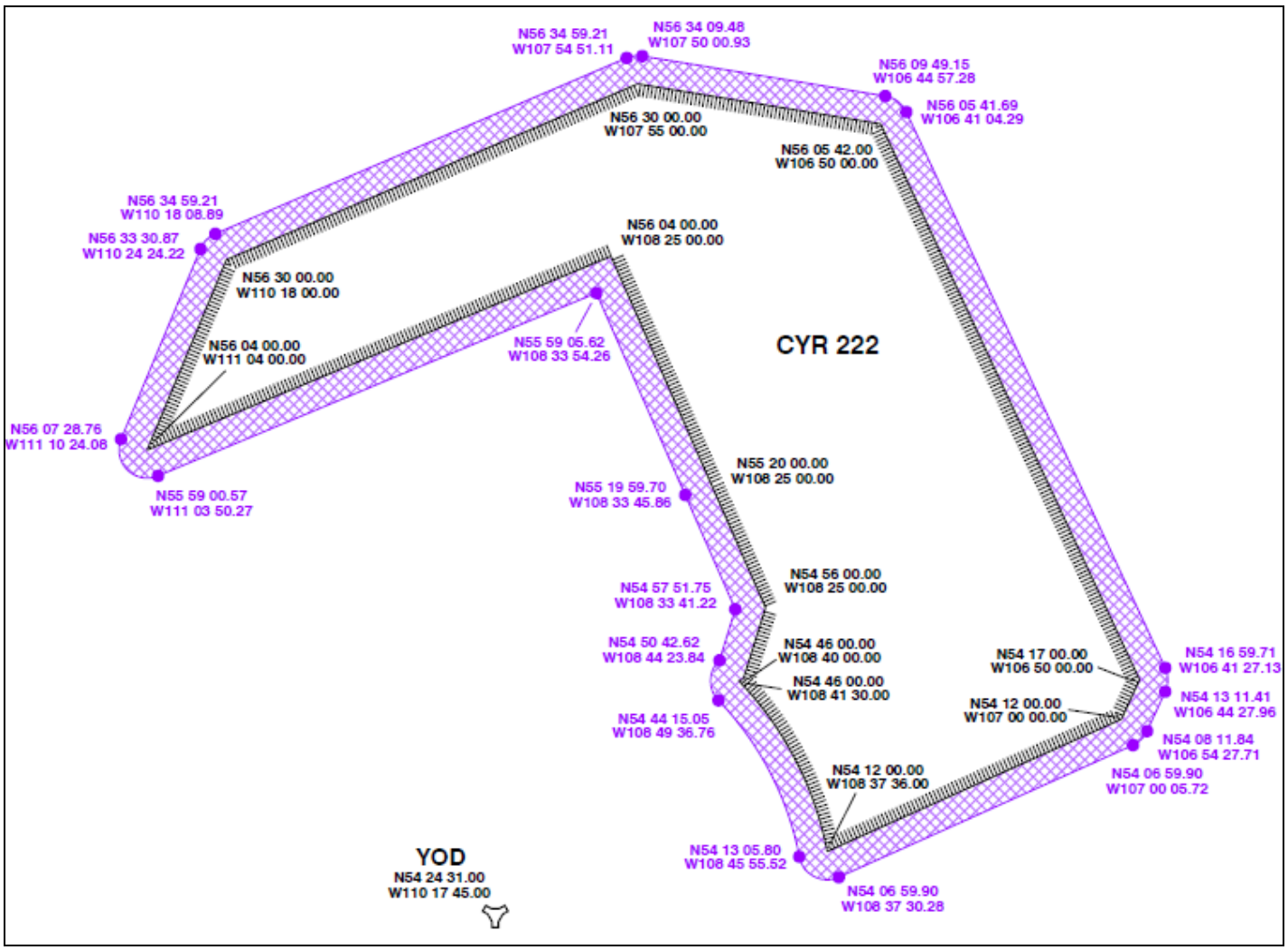
**Edmonton FIR**

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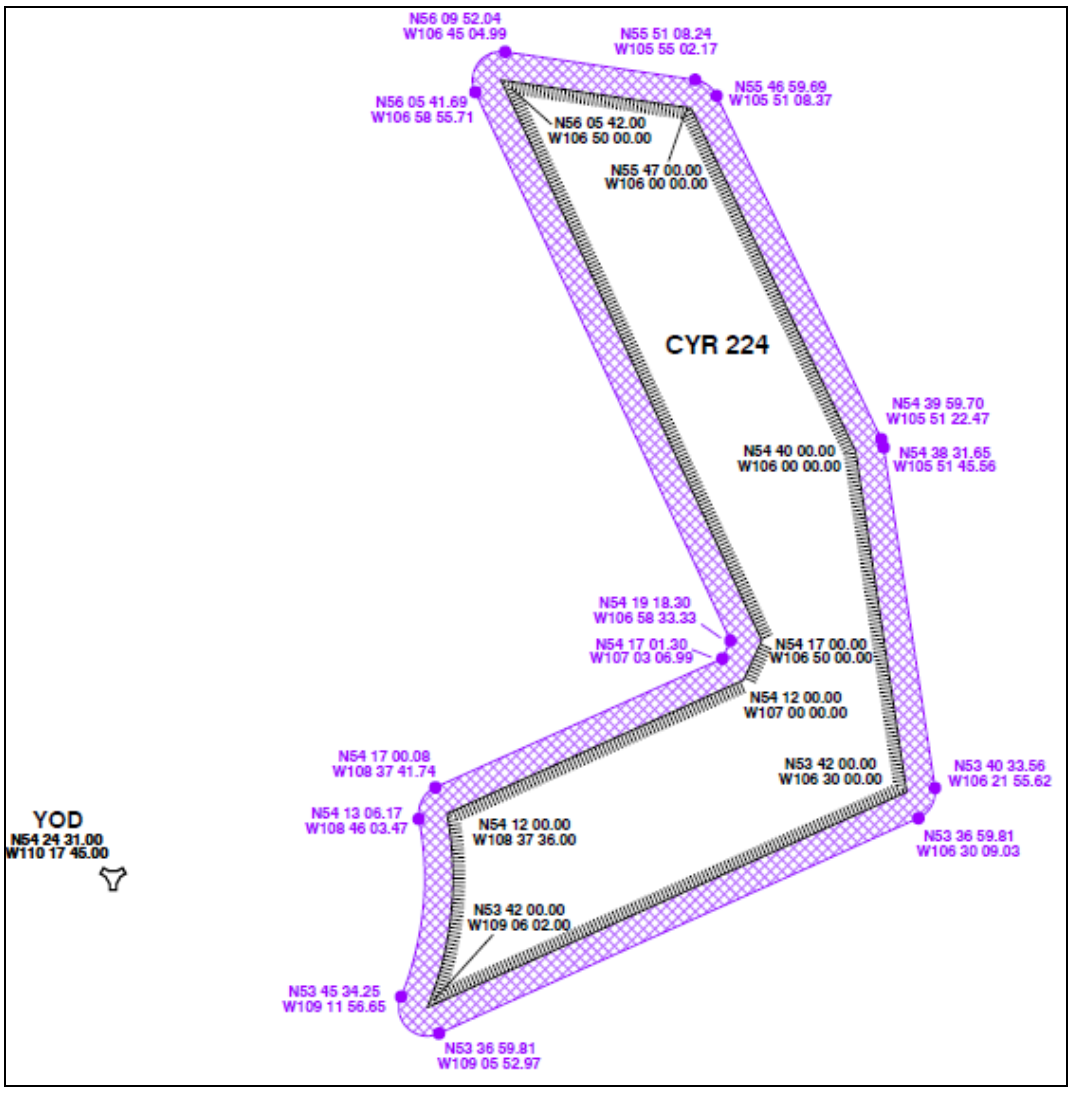
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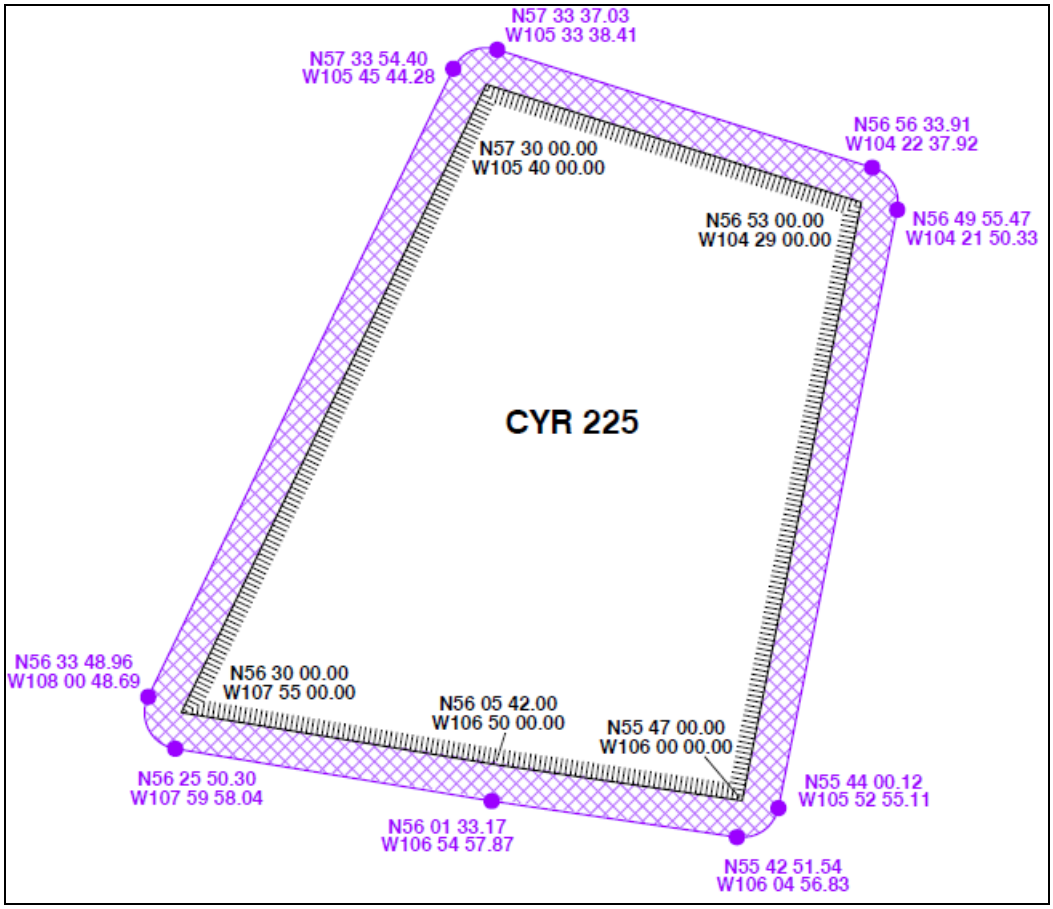
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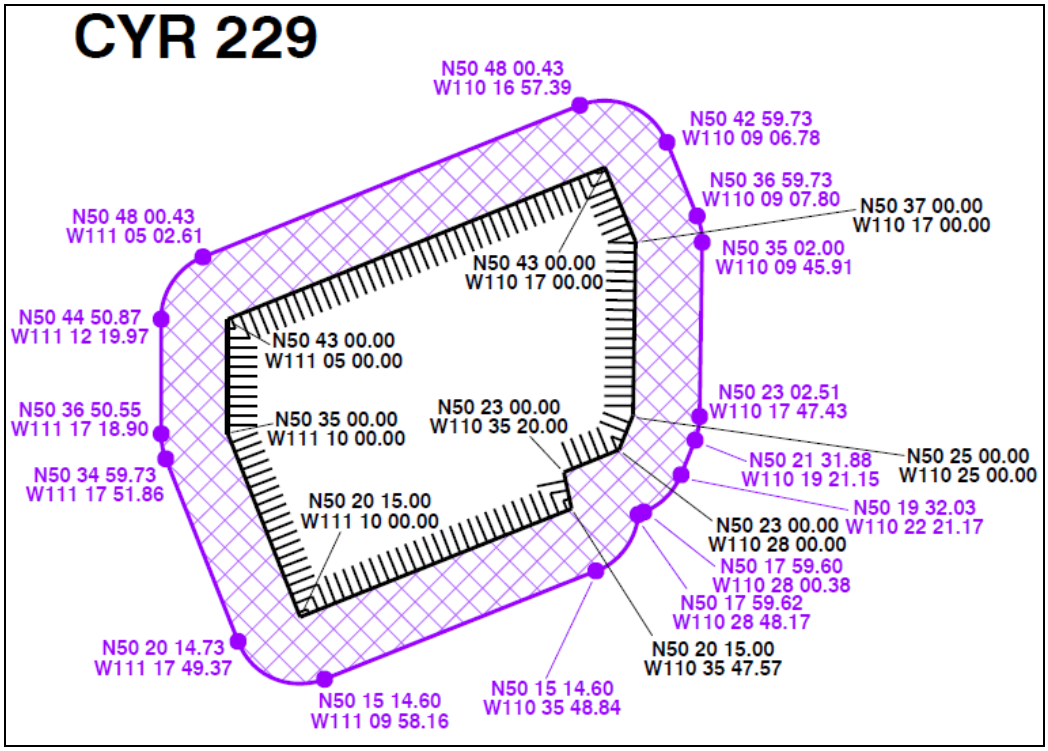
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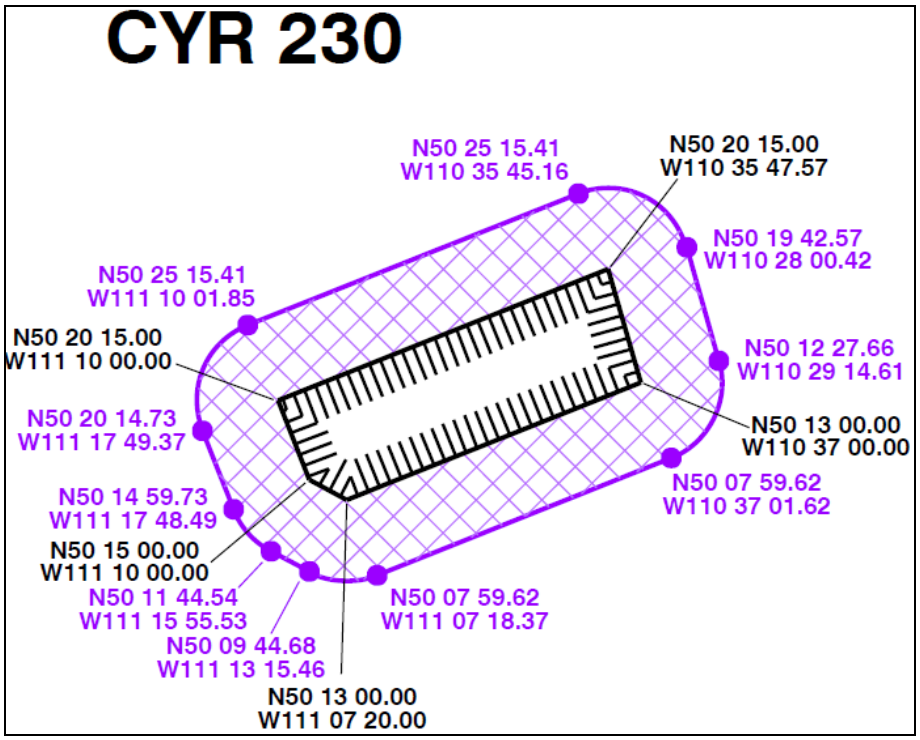
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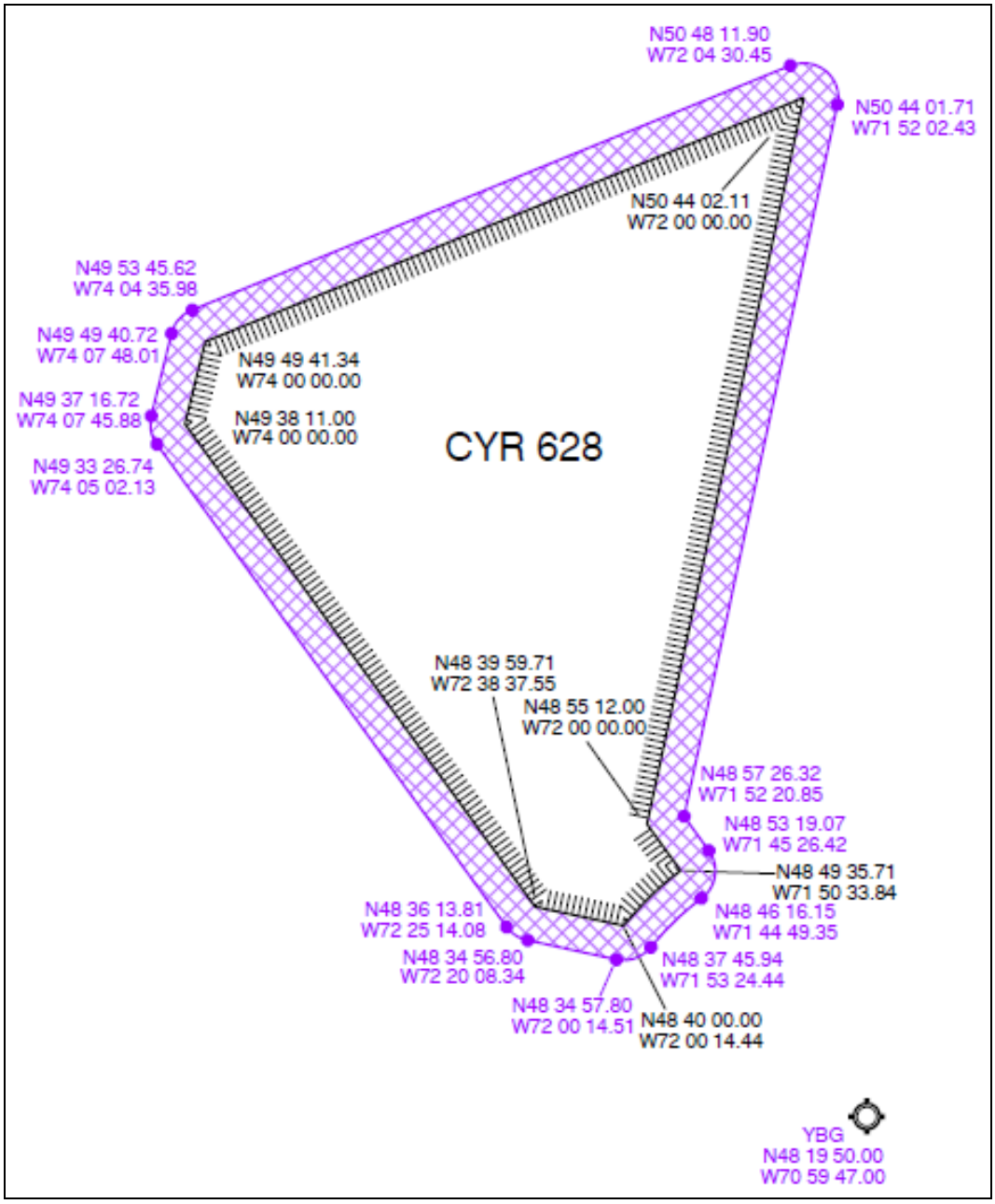
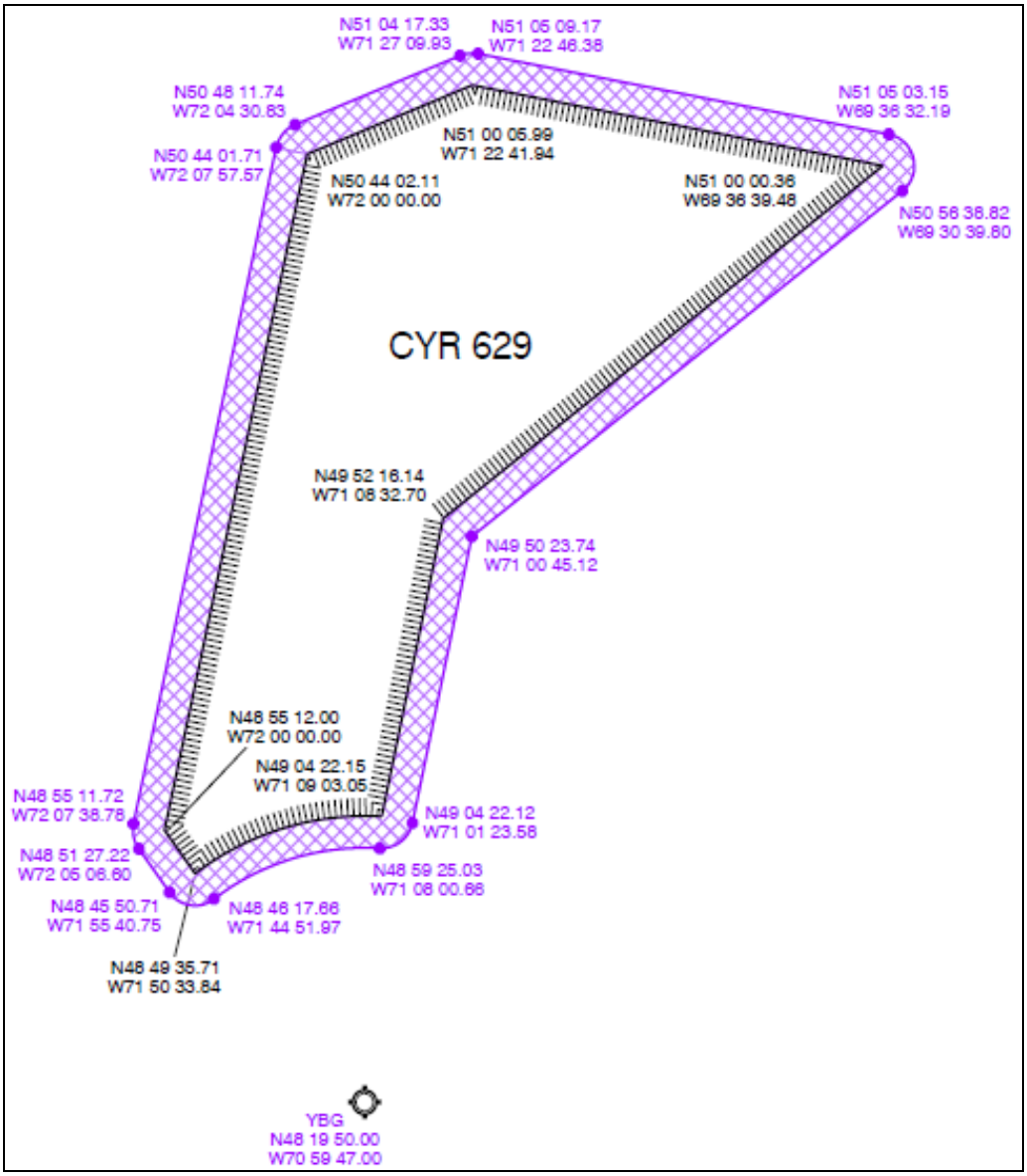
**Montreal FIR**

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N51 00 00.36
W69 36 39.48
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W71 01 23.58
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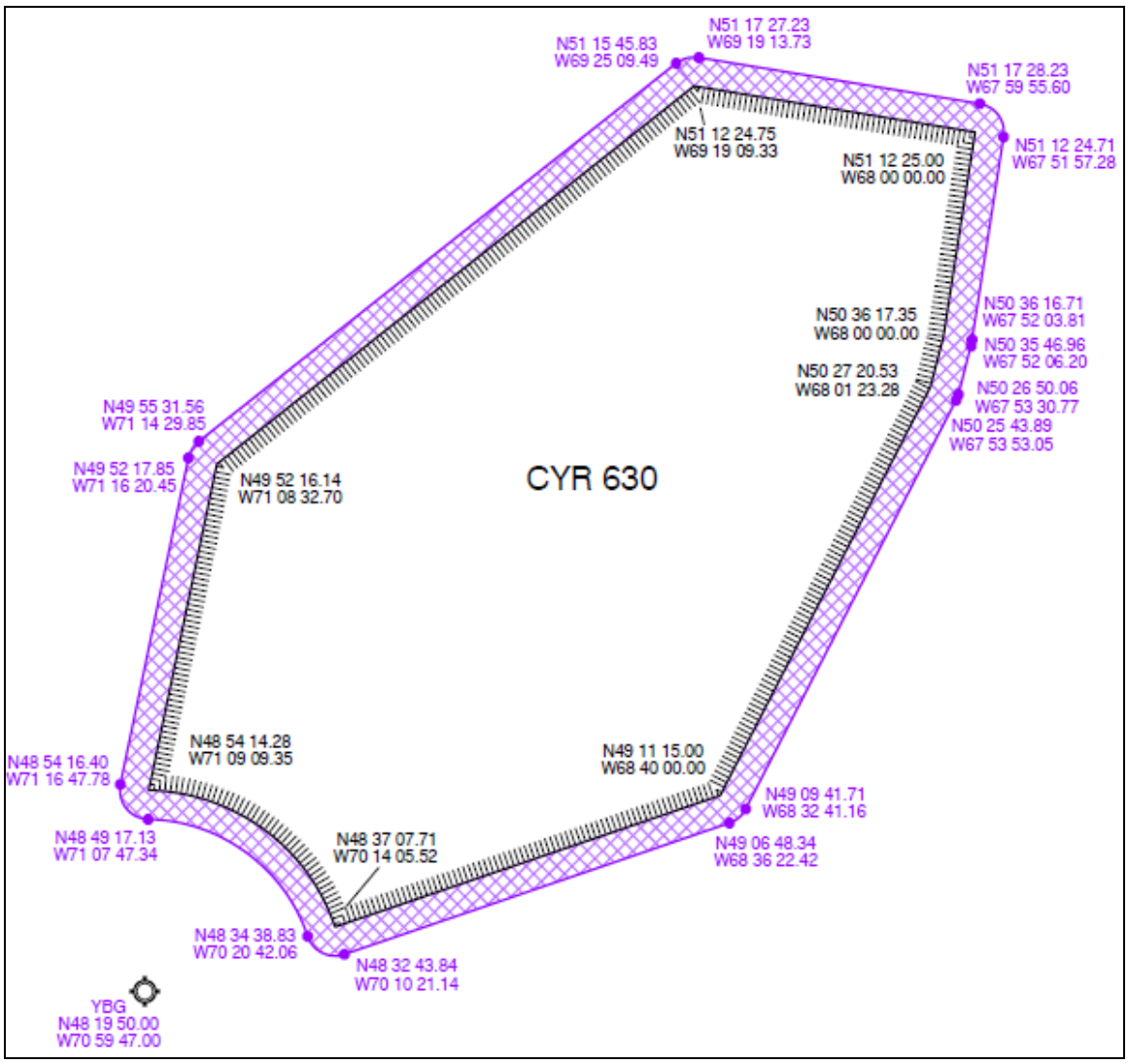
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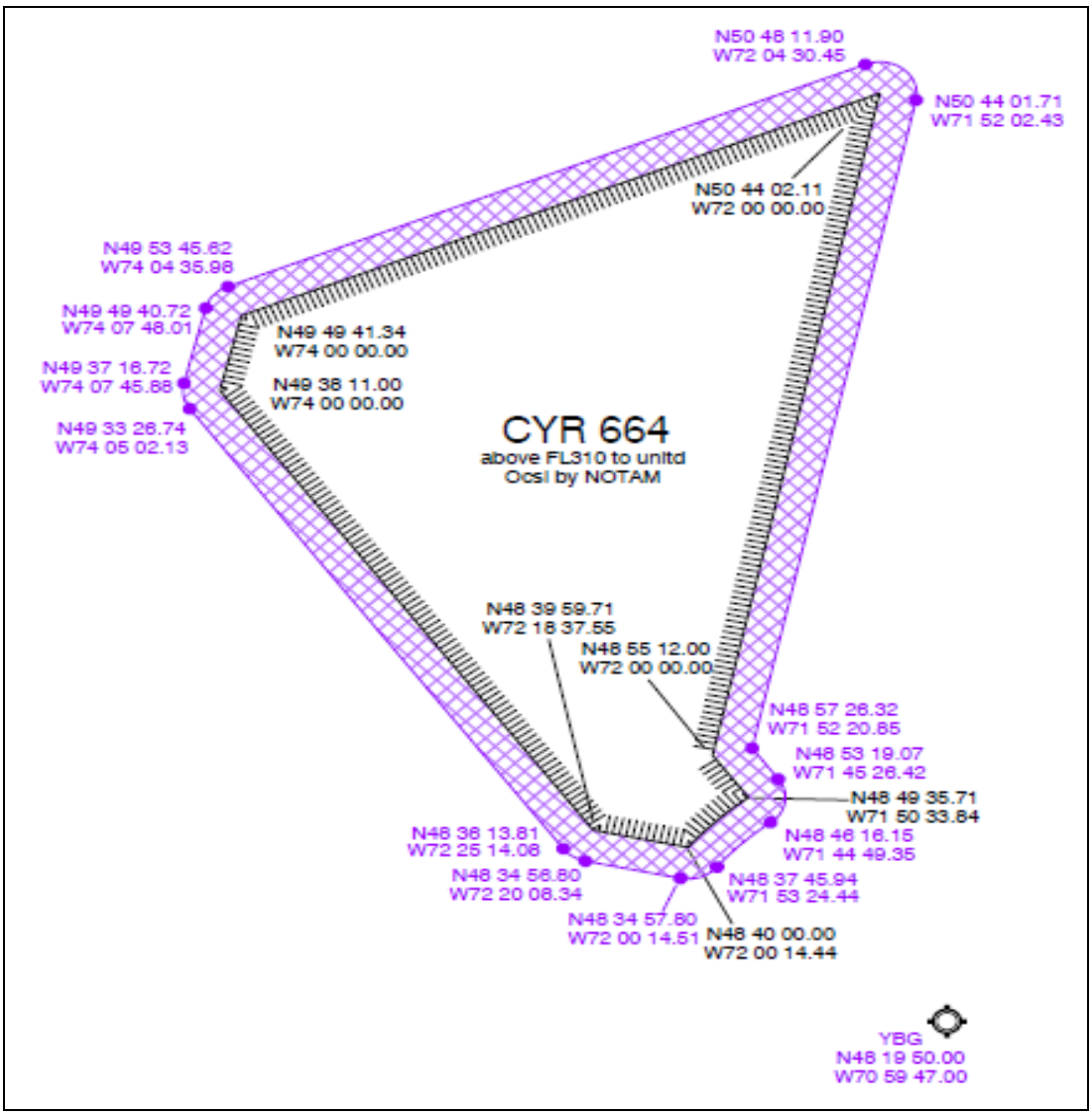
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N49 37 16.72
W74 07 45.88
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CYR 664
above FL310 to unltd
Ocsl by NOTAM
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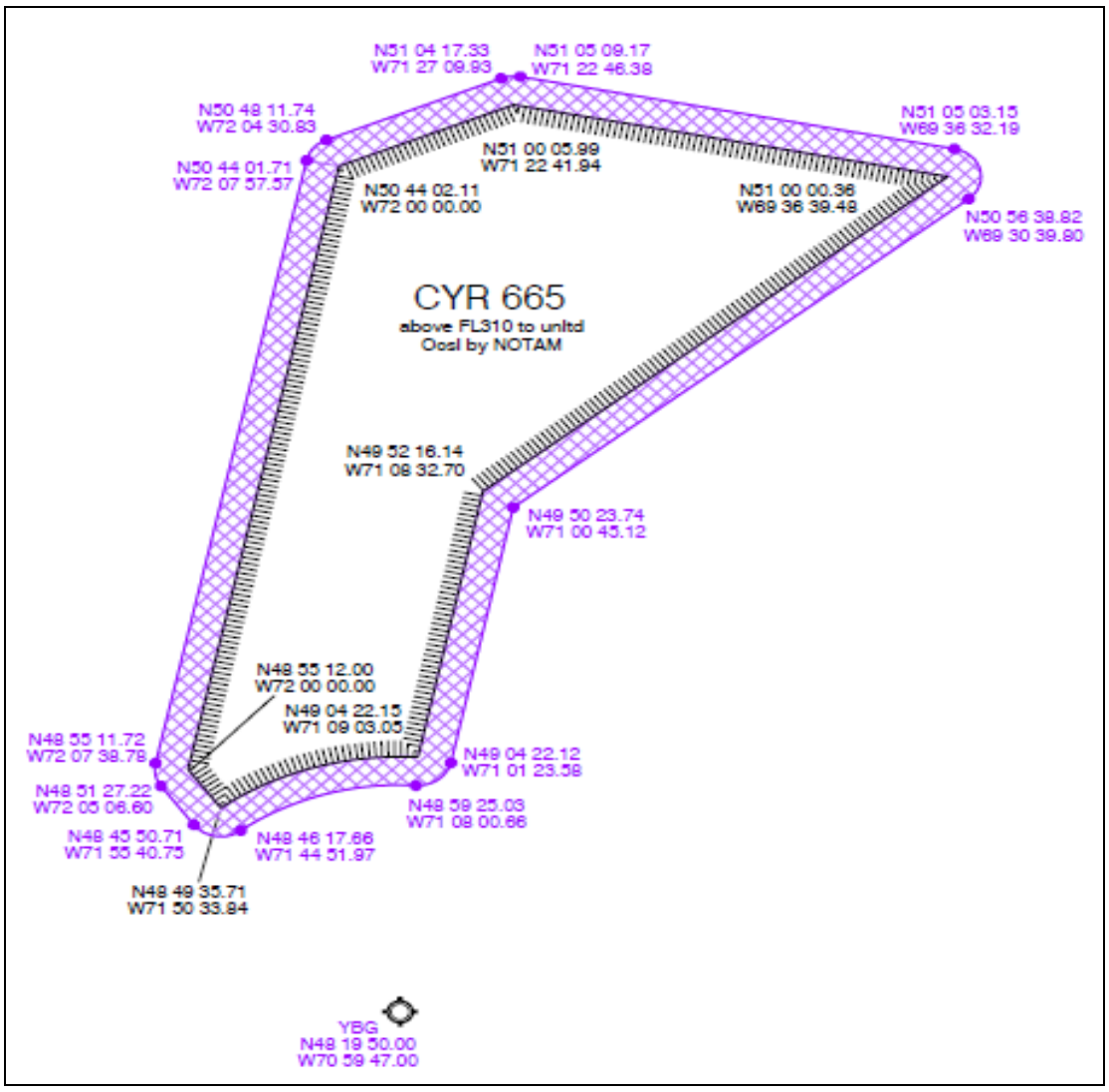
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N50 44 02.11
W72 00 00.00
N51 00 00.36
W69 36 39.48
N50 56 38.82
W69 30 39.80
CYR 665
above FL310 to unltd
Ocsl by NOTAM
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W71 08 32.70
N49 50 23.74
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N48 55 12.00
W72 00 00.00
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W71 09 03.05
N48 55 11.72
W72 07 38.78
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N48 51 27.22
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YBG
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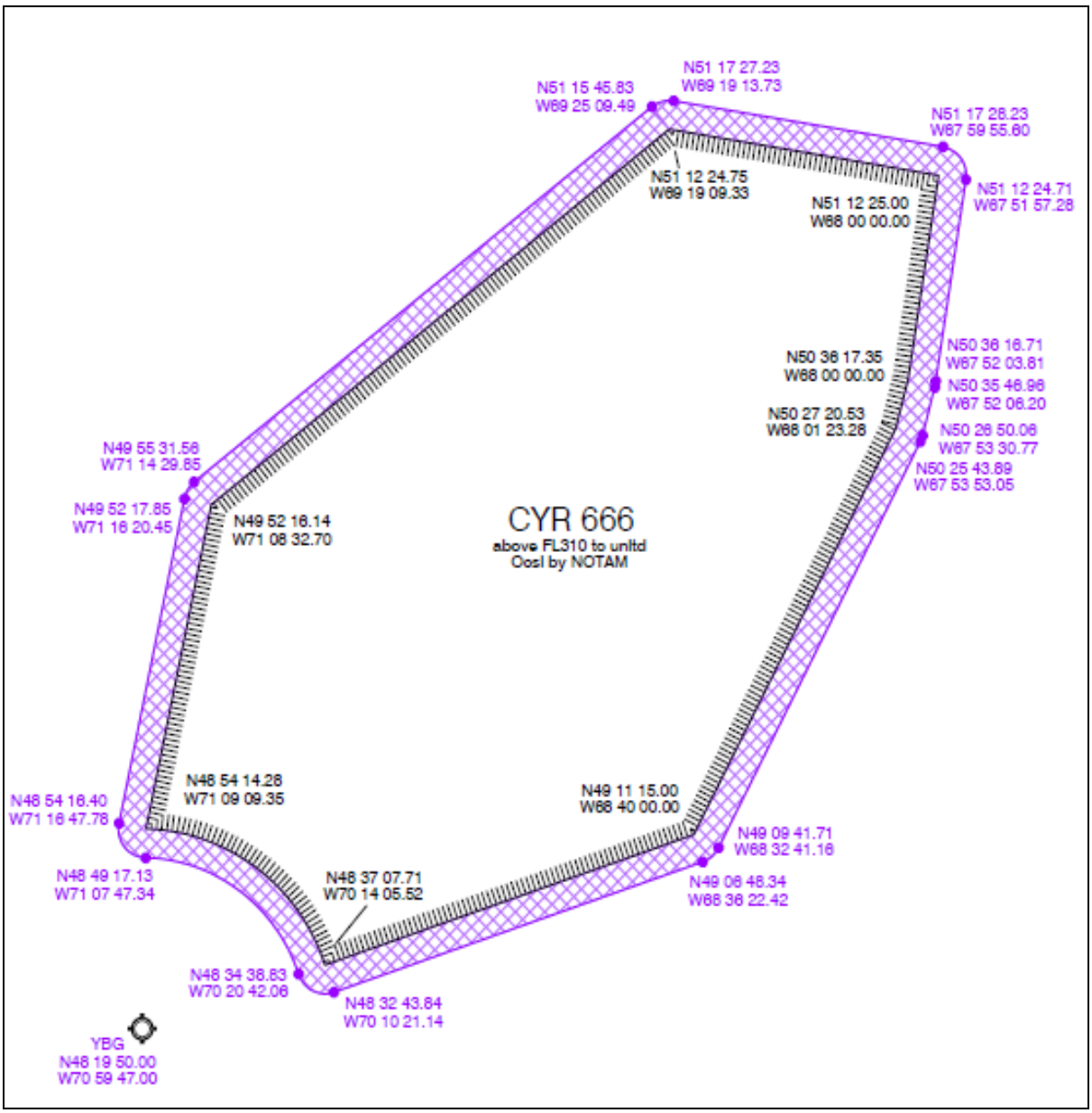
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CYR 666
above FL310 to unltd
Cosl by NOTAM
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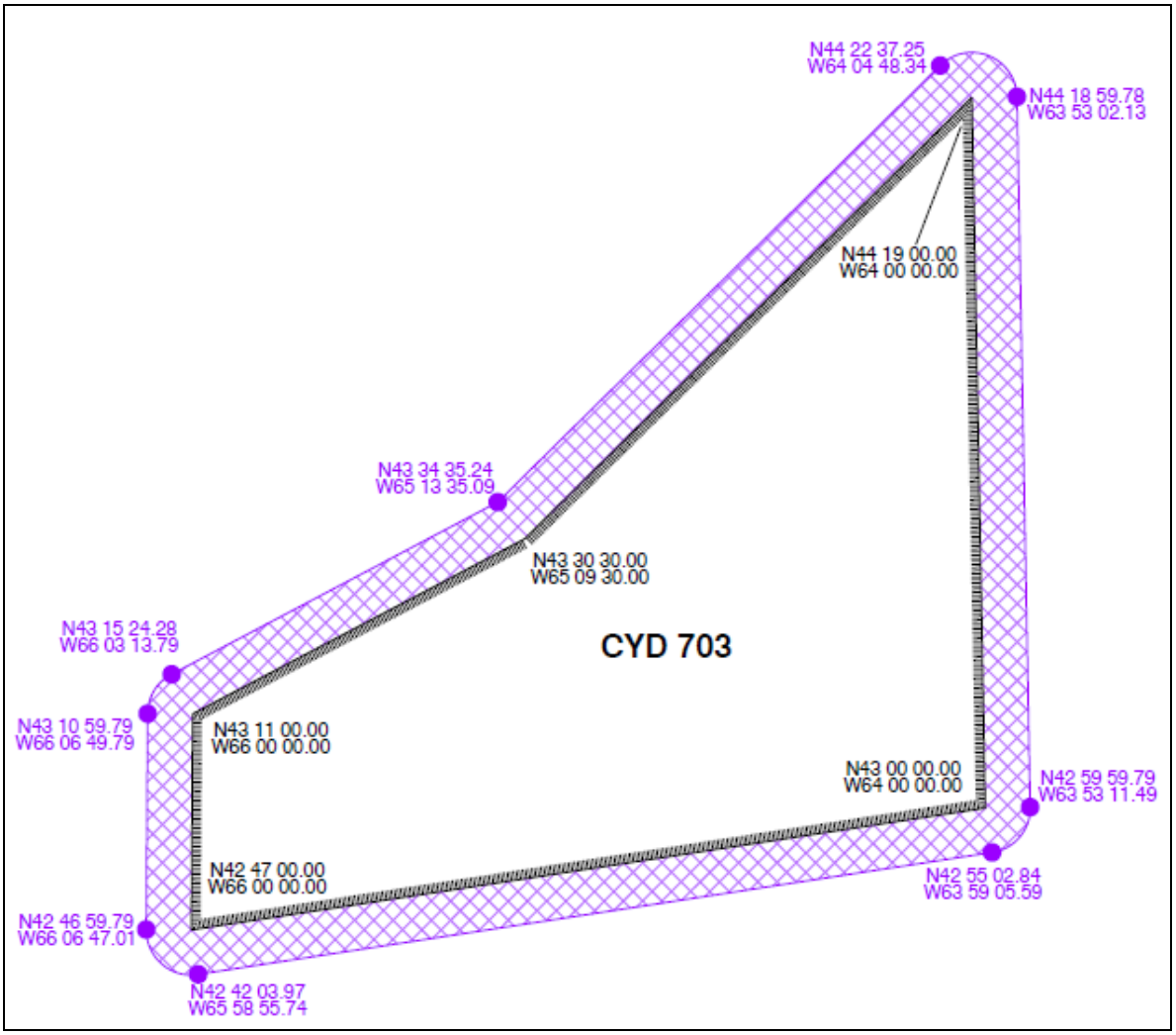
**Moncton FIR**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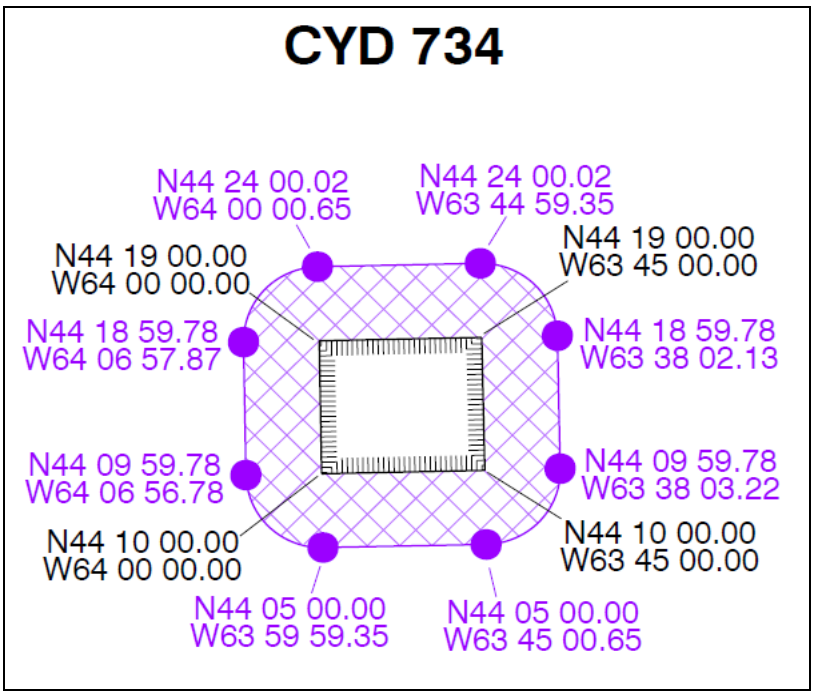
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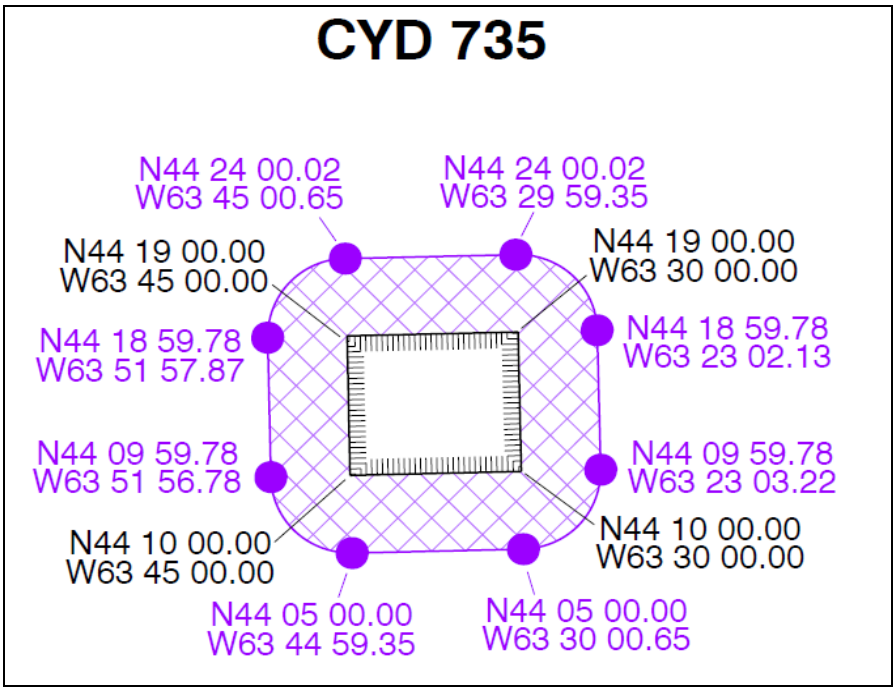
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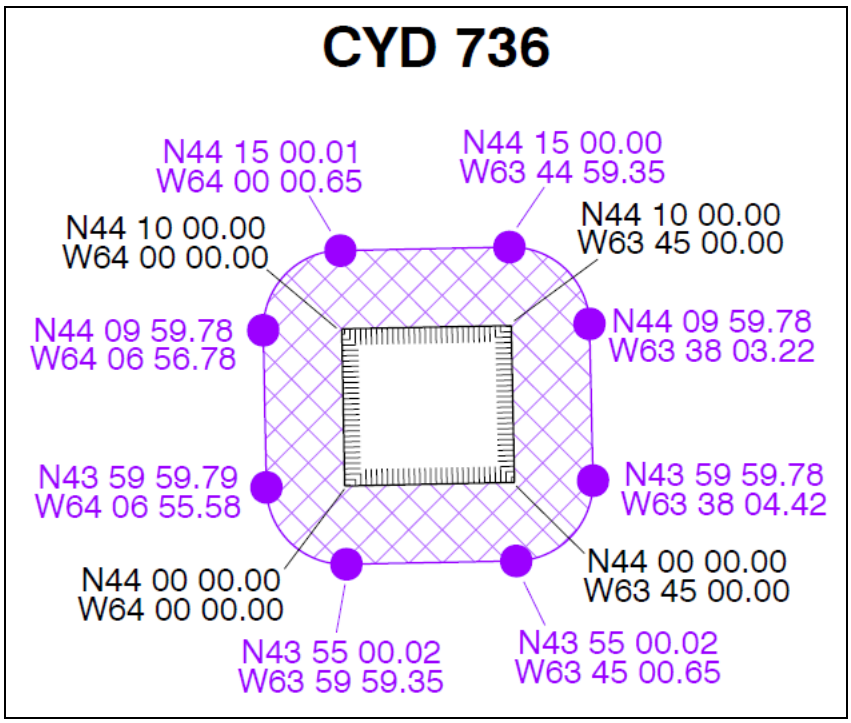
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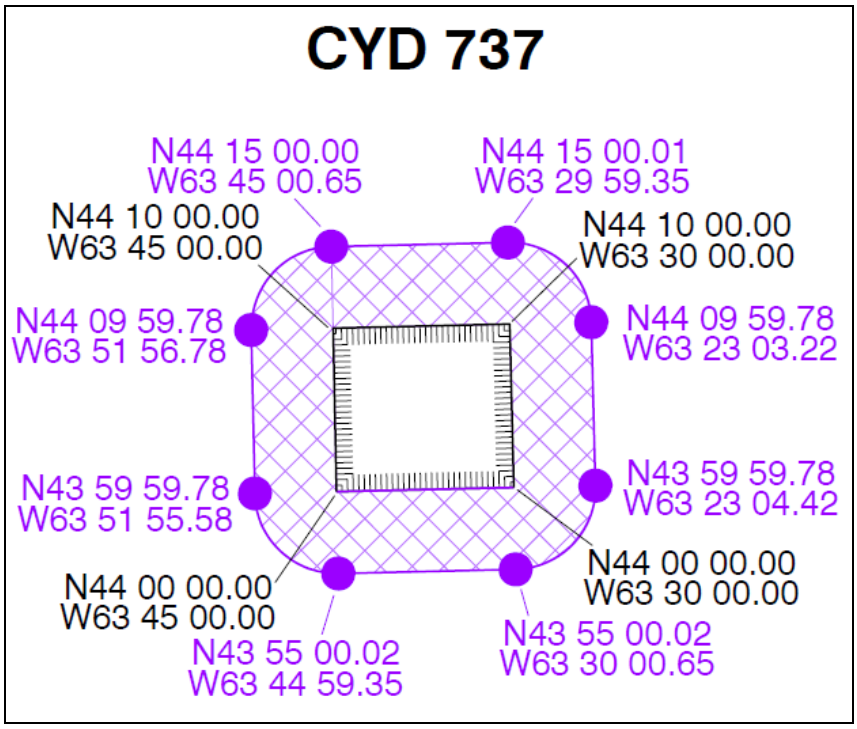
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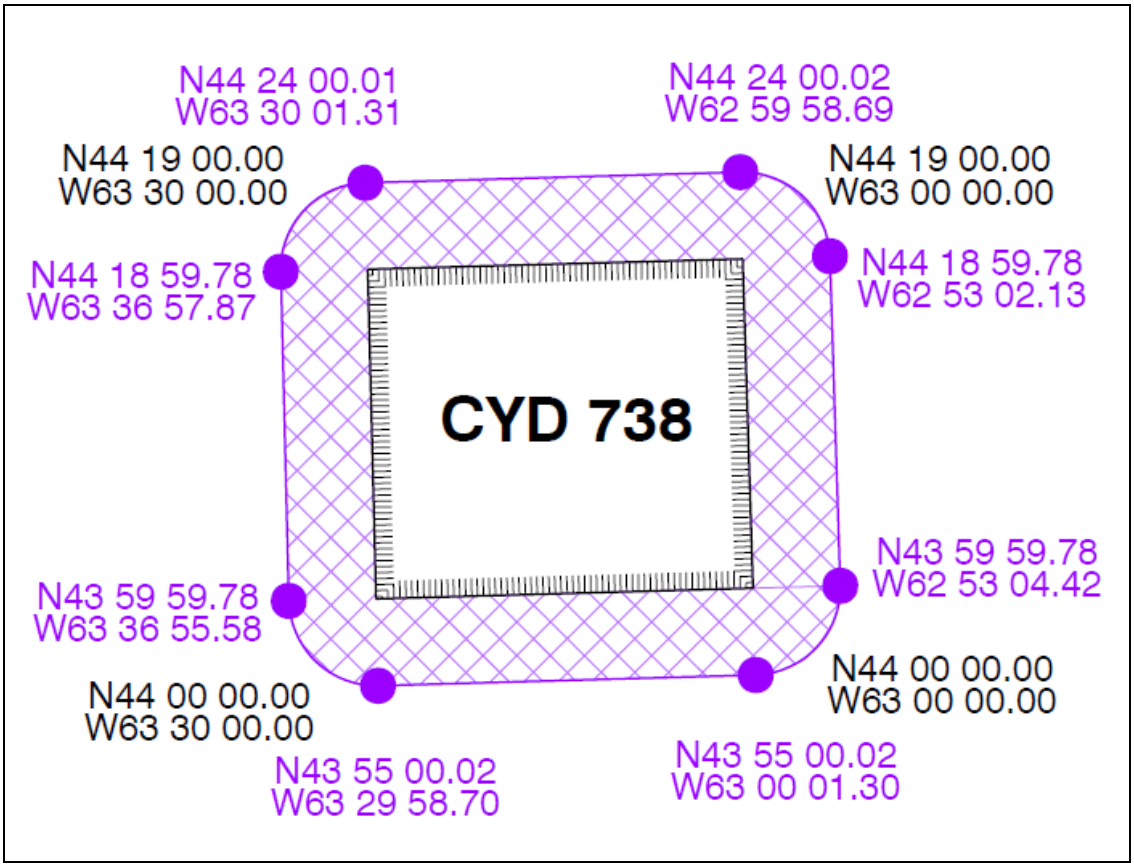
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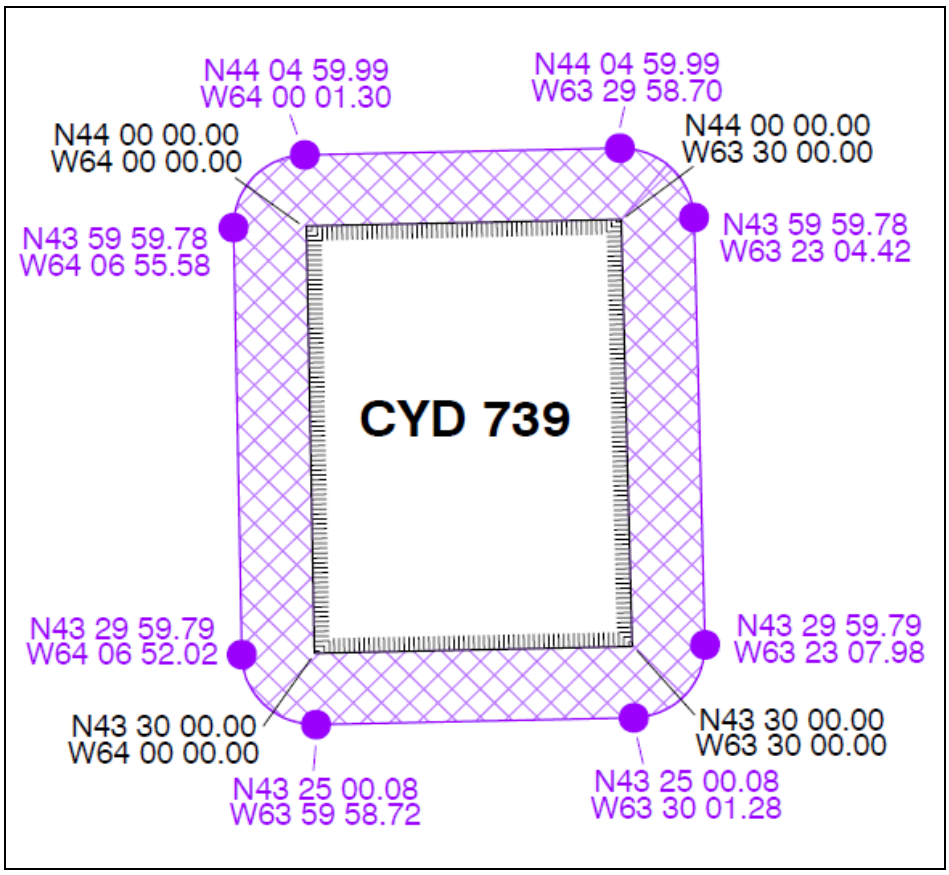
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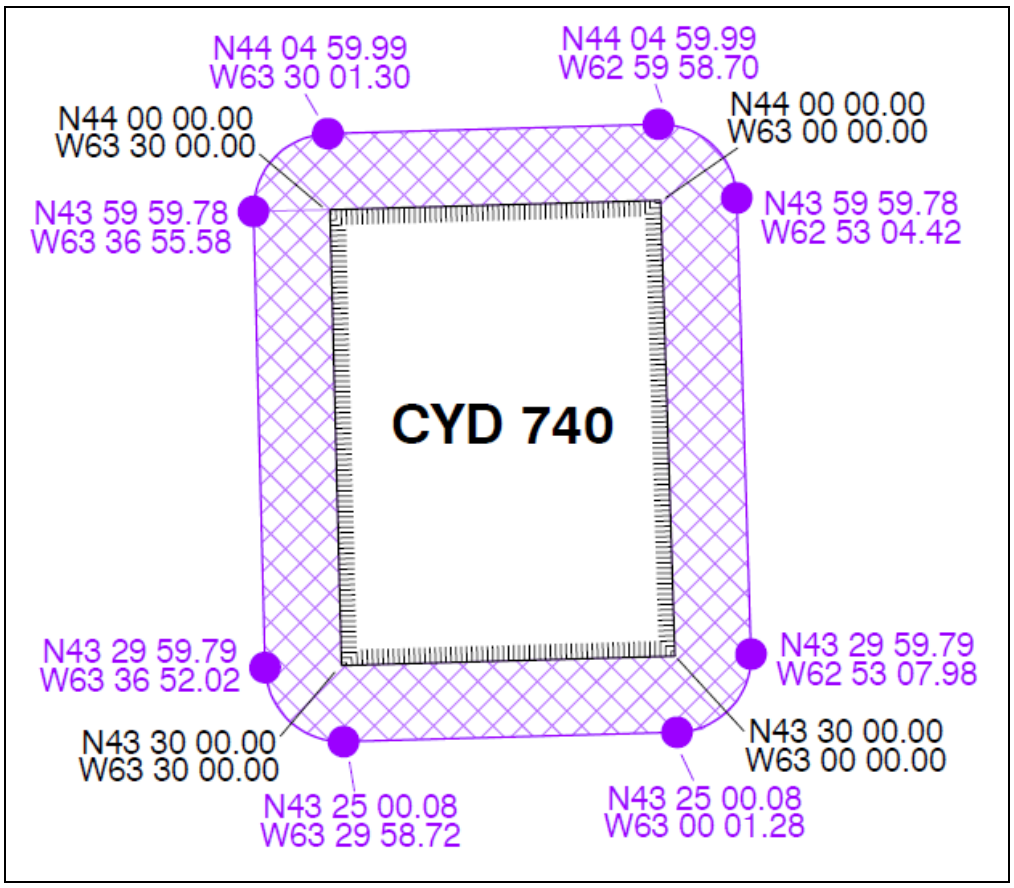
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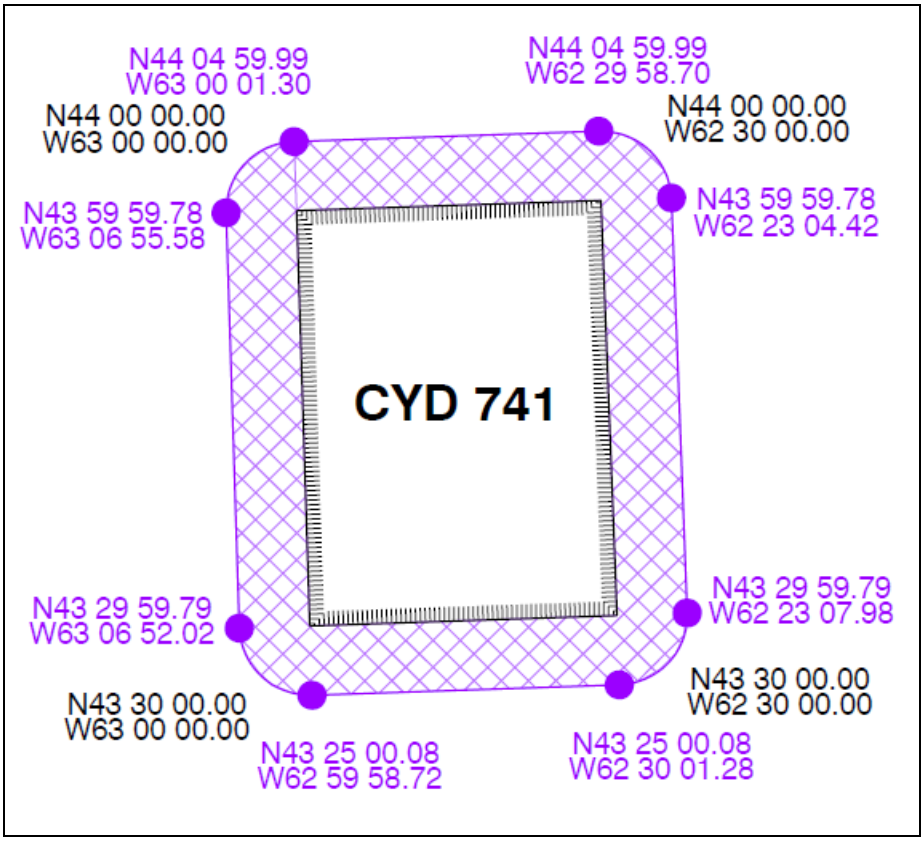
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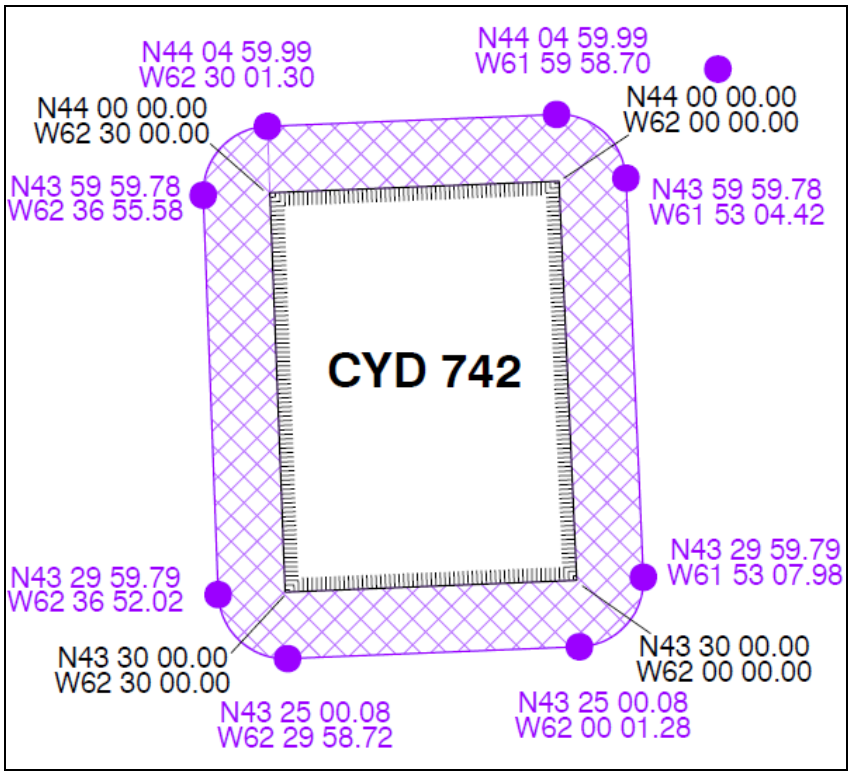
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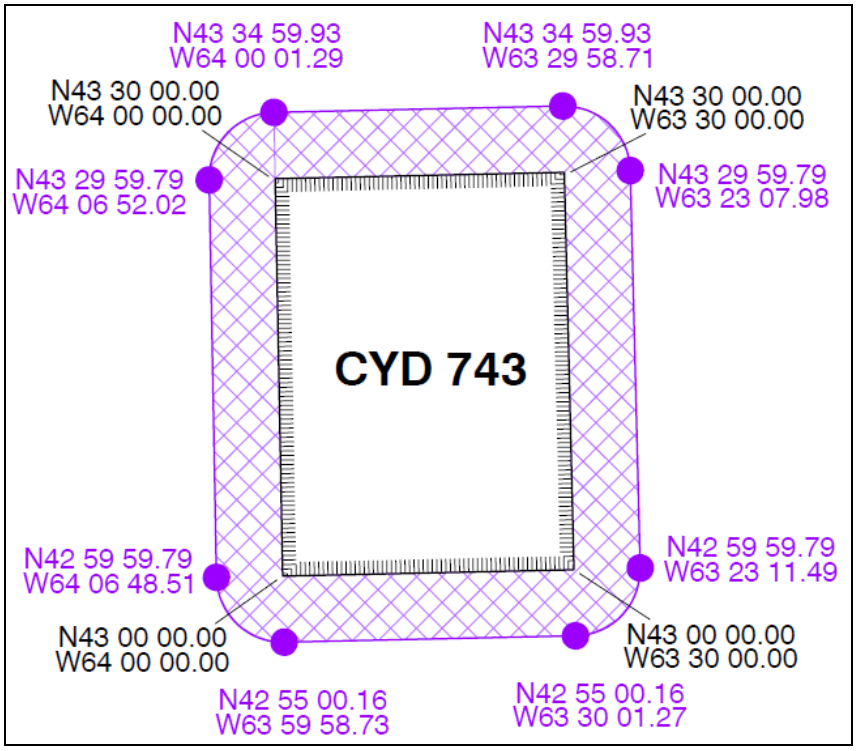
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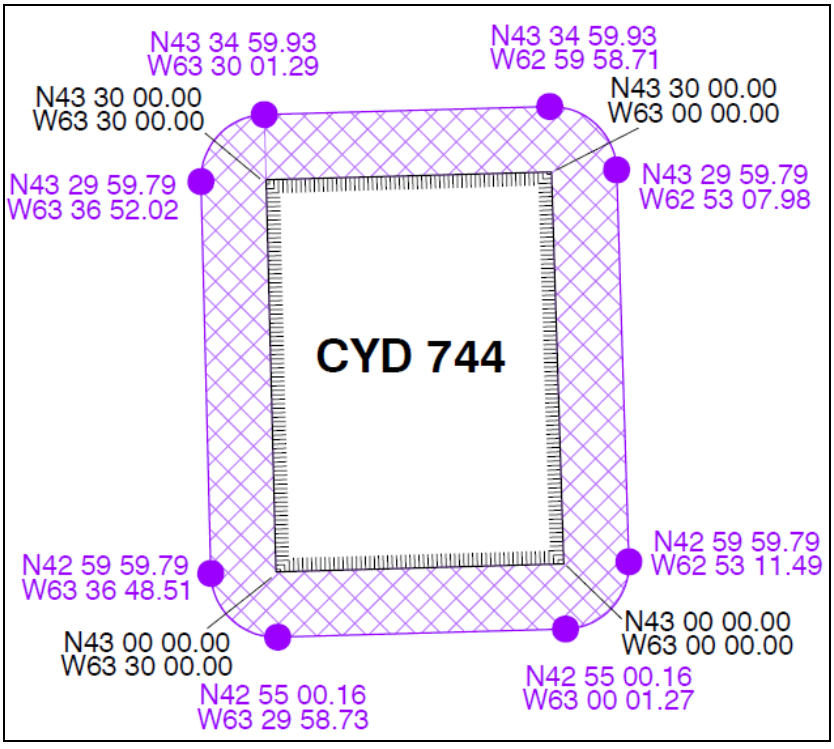
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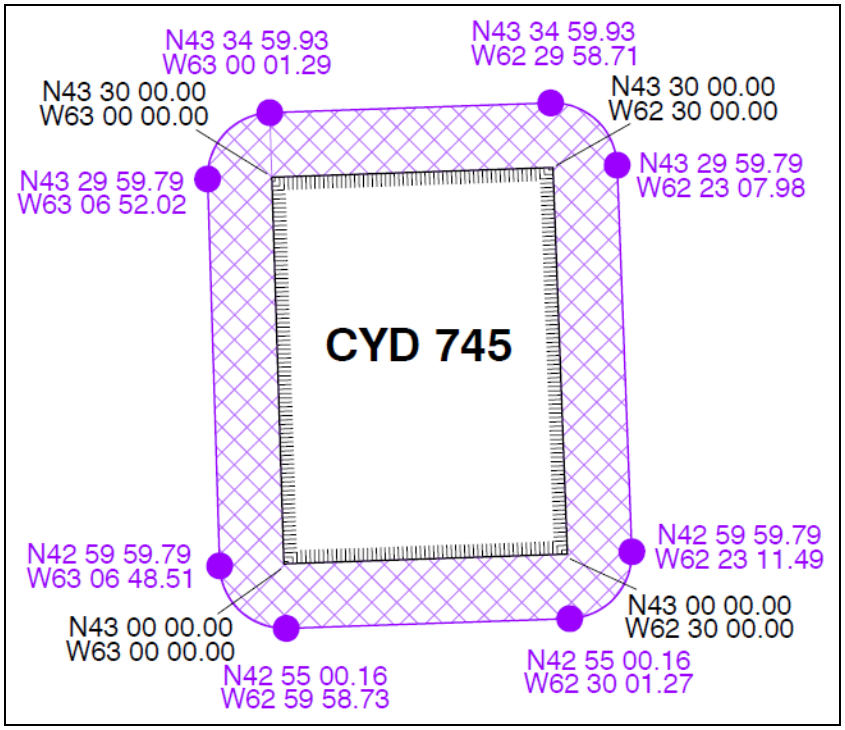
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W62 23 11.49
N43 00 00.00
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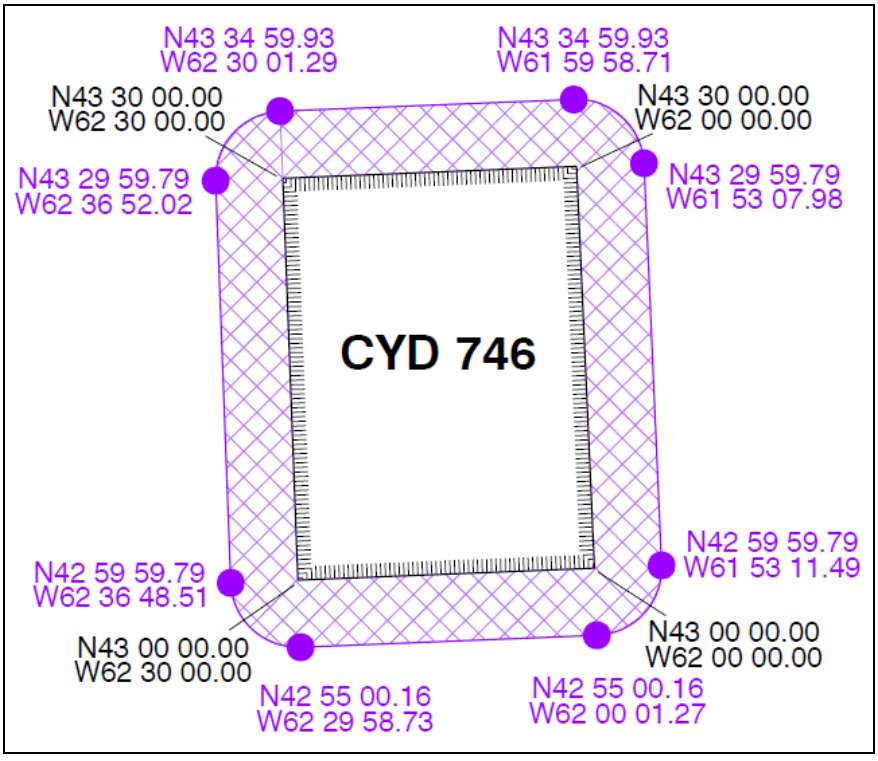
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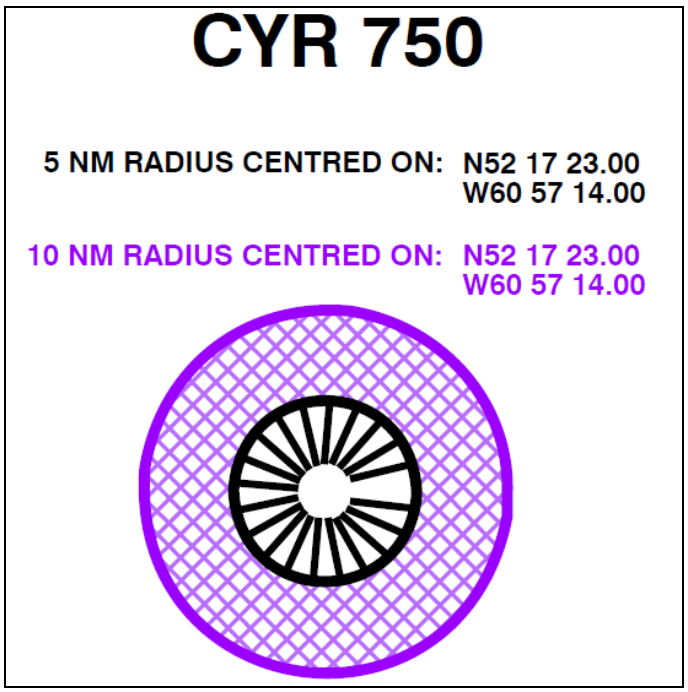
**Gander FIR**




## Further Information

For further Information, please contact:

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James Ferrier
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# AERONAUTICAL INFORMATION CIRCULAR 1/16

## PILOT PROCEDURES WHEN INTENDING TO OPERATE AN AIRCRAFT ABOVE 250 KNOTS INDICATED AIRSPEED BELOW 10,000 FEET ABOVE SEA LEVEL IN CANADIAN DOMESTIC AIRSPACE

### Introduction

Transport Canada has identified an increase of pilots requesting to or intending to operate at airspeeds above 250 knots indicated airspeed (KIAS) below 10,000 feet above sea level (ASL), which would exceed the speed limit set out in *Canadian Aviation Regulations* (CAR) subsection 602.32 provided below.

***CAR 602.32***

1. Subject to subsection (2), no person shall:
   - *a) operate an aircraft at an indicated airspeed of more than 250 knots if the aircraft is below 10,000 feet ASL; or*
   - *b) operate an aircraft at an indicated airspeed of more than 200 knots if the aircraft is below 3,000 feet above ground level (AGL) within 10 nautical miles of a controlled aerodrome unless authorized to do so in an air traffic control clearance.*
2. A person may operate an aircraft at an indicated airspeed greater than the airspeeds referred to in subsection (1) if the aircraft is being operated in accordance with a special flight operations certificate – special aviation event issued pursuant to section 603.02.
3. If the minimum safe airspeed for the flight configuration of an aircraft is greater than the airspeed referred to in subsection (1), the aircraft shall be operated at the minimum safe airspeed.

### Purpose of the Circular

This aeronautical information circular (AIC) reminds pilots of the purpose of a recent amendment to CAR subsection 602.32 regarding the speed limitation of 250 KIAS below 10,000 feet ASL. It clarifies the intent of the amendment to the regulation, and provides guidance for reporting intentions when pilots are required to or intend to operate above the limitation of 250 KIAS below 10,000 feet ASL.

### Background

It is important to note that in November 2010, Transport Canada amended subsection 602.32 of the CARs by removing the provision for pilots to exceed 250 KIAS "*where the aircraft is being operated on departure*."

This action was based on a risk analysis of high speed aircraft departures below 10,000 feet ASL that highlighted an increased risk to aviation safety when aircraft are operating above 250 KIAS where migratory birds are located. The analysis stated the following:

> *"The increase in large flocking bird populations coupled with the anticipated growth of the fleet of aircraft that could depart at high speed will result in an increased risk to aviation safety. The likelihood and severity of damage to aircraft and injury to crew and passengers resulting from bird strikes are directly related to the speed at which an aircraft travels at the moment of impact. For example, a 20% increase in indicated airspeed, from 250 knots to 300 knots, would result in a 44% increase of impact force on the aircraft's airframe. Because of energy management issues, consequences resulting from bird strike damage are the most severe during the departure phase of flight."*

The amendment to CAR subsection 602.32 was intended to provide the following benefits:

- limit the likelihood of bird strikes resulting in severe aircraft damage;
- reduce the likelihood of flight delays and cancellations;
- reduce the likelihood of legal expenses and damage settlements resulting from flight delays and cancellations;
- reduce aircraft down time caused by bird strike-related maintenance;
- reduce the risk of mid-air collision under 10,000 feet ASL in airspace where uncontrolled traffic may find themselves in the path of the high-speed departure aircraft; and
- harmonize the Canadian regulations with American regulations under the Federal Aviation Authority.

For these reasons, pilots are encouraged to carefully consider the need for exceeding the 250 KIAS limitation. However, if the "*minimum safe speed*" for the flight configuration of the aircraft is above 250 KIAS, pilots are referred to CAR subsection 602.32 (3), which contains the following provision:

> *"Where the minimum safe speed for the flight configuration of an aircraft is greater than the speed referred to in subsection (1) or (2), the aircraft shall be operated at the minimum safe speed."*

Exceeding 250 KIAS below 10,000 feet ASL for reasons other than maintaining the "*minimum safe speed*" for the flight configuration would be in violation of CARs and would require air traffic control (ATC) to file an Aviation Occurrence Report to Transport Canada.

These changes will be published in a future version of the *Transport Canada Aeronautical Information Manual* (TC AIM – TP14371E).

For further information please contact:

NAV CANADA
Attn: Claude Fortier, Manager
Air Traffic Services (ATS) Standards and Procedures

Tel.: 613-563-5738
E-mail: fortiec@navcanada.ca

## Notifying Air Traffic Control

On departure, when intending to operate at speeds exceeding 250 KIAS below 10,000 feet ASL, pilots must notify the departure controller on initial contact of the reason for this action.

ATC requires this information for the following reasons:

- for operational considerations regarding other traffic, particularly in potential overtake situations; and
- so that ATC will know the request or notification of intent to operate above the speed limitation is for "*minimum safe speed*" requirements and therefore ATC will not file an aviation occurrence report.

Phraseology of "*minimum safe speed XXX*" is encouraged and ATC will acknowledge.

**Example:**

*Montreal Centre, ACA123, minimum safe speed 270kts*

As ATC are **not authorized** to approve a speed in excess of 250 KIAS below 10,000 feet ASL, the phraseology "*request high speed climb*" **should not** be used.

## Regulatory Actions

If pilots report or operate at a speed over 250 KIAS and do not state that it is for minimum safe speed, ATC will file an aviation occurrence report to the Civil Aviation Daily Occurrence Reporting System (CADORS) for Transport Canada's review as prescribed in CAR 807.01.

James Ferrier
Manager, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 25/15

## GANDER FLIGHT INFORMATION REGION (FIR)/CONTROL AREA (CTA) AIRSPACE DESIGN CHANGES FOR REDUCED LATERAL SEPARATION MINIMUM IMPLEMENTATION

This Aeronautical Information Circular provides additional information that supplements AIC 18/15 regarding the 25 nautical mile (NM) reduced lateral separation minimum (RLatSM) trial commencing on or after 12 November 2015 in the Gander and Shanwick oceanic area control centre (OCA).

### Phased Approach to the Start of the Trial

Effective 12 November 2015 at 0901Z, the Gander domestic CTA will be realigned to support RLatSM tracks within the North Atlantic organized track system (NAT OTS) at oceanic entry and exit points DORYY south to SUPRY. Effective 10 December 2015 at 0901Z, additional North American Routes (NARs) will be established, which will enable RLatSM tracks to be anchored at oceanic entry and exit points CUDDY north to KETLA. Because the additional NARs will be unavailable prior to 10 December 2015, until that date RLatSM tracks will exit the Gander OCA spaced by a full degree at the oceanic entry and exit points when occurring at CUDDY or north thereof.

When NAT OTS tracks are over CUDDY or north, westbound NARs will be mandatory and published on the NAT OTS track message. These NARs are short leg NARs to ensure enough time for the radar controllers to transition flights from a non-radar environment to a radar environment.

RLatSM tracks will not be established north of KETLA or south of SUPRY.

### RLatSM Oceanic Entry and Exit Points in the Gander FIR

Effective 15 October 2015 at 0901Z, NAV CANADA will publish oceanic entry and exit points (see below) associated with RLatSM implementation. The publication of these fixes within this time frame allows for operators to add them to their databases in time for the RLatSM trial prior to the 12 November 2015 commencement date. These fixes must not be filed between 15 October 2015 and 12 November 2015; as airspace boundaries with the Gander FIR will not be realigned until the start of the RLatSM trial.

| RLatSM Fixes Effective 15 October 2015 at 0901Z for use 12 November 2015 Onwards | | | |
|---|---|---|---|
| **Oceanic Entry and Exit Points** | **(Phase 1 of 2)** | **Oceanic Entry and Exit Points** | **(Phase 1 of 2)** |
| LIBOR | 61° 58’ N 058° W | MELDI | 52° 44’ N 056° 21’ W |
| NIFTY | 60° 58’ N 058° W | PELTU | 52° 06’ N 055° 10’ W |
| RADUN | 59° 58’ N 058° W | SAXAN | 51° 29’ N 053° 51’ W |
| TOXIT | 58° 58’ N 058° W | UMESI | 50° 50’ N 052° 36’ W |
| VESMI | 57° 58’ N 058° W | BUDAR | 50° 00’ N 052° W |
| BOKTO | 56° 58’ N 058° W | IBERG | 49° 00’ N 052° W |
| ENNSO | 55° 32’ N 057° W | MUSAK | 48° 00’ N 052° W |
| IRLOK | 54° 32’ N 057° W | OMSAT | 47° 00’ N 052° W |
| KODIK | 53° 28’ N 057° 12’ W | RELIC | 46° 00’ N 052° W |

## VODOR

Effective 10 December 2015 at 0901Z, oceanic entry and exit point VODOR will be removed from operational use and RAFIN will remain as the oceanic entry and exit point. Effective this date, pilots must send request clearance (RCL) messages based on RAFIN. All NARs will be revised to indicate RAFIN.

## RLatSM through the Gander Oceanic Transition Area (GOTA)

Additional inland fixes will be published effective 15 October 2015 at 0901Z. These will be used strategically when the NAT OTS is located in the CUDDY and north area of GOTA. These fixes must be added to the operator's database as they will be used for NAT OTS design. Effective 10 December 2015 at 0901Z, new short segment NARs will be designed to incorporate the organized track system (OTS) design using these new fixes below. For example, NARs will be designed that will specify AVUTI ALSOP or CUDDY DUVBI with operator preferred route filing available after that. When NAT OTS design uses the oceanic entry and exit points from CUDDY and north, operators must file the published short leg NARs associated with each published NAT OTS track. When the area from CUDDY and north is not associated with NAT OTS design, operators may file random preferred routes or one of the existing NARs.

| Additional Fixes for OTS/NAR Design, Effective 15 October 2015 at 0901Z | | | |
|---|---|---|---|
| MUSLO | 60° 10' N 062° W | ALSOP | 56° 52' N 062° 10' W |
| SINGA | 59° 13' N 061° 05' W | DUVBI | 56° 00' N 061° W |
| UDMAR | 57° 35' N 062° 55' W | | |

## Associated Fixes

Effective 15 October 2015 at 0901Z, operators must follow the associated fixes for westbound route segments only, as it is an important factor to assist control staff to transition aircraft from a non- air traffic service (ATS) surveillance environment to an ATS surveillance environment. All eastbound flights need not follow the associated fix rules that are published in the *Transport Canada Aeronautical Information Manual* (TC AIM – TP 14371E).

## Electronic RCL Messages Through GOTA

Pilots submitting an RCL must use an oceanic entry and exit points located within GOTA and not a boundary fix along the Montreal CTA boundary. Oceanic entry and exit points and details are available in the Gander Data Link Oceanic Clearance Delivery Crew Procedures document. Flight crews submitting an RCL based on Montreal CTA boundary (e.g. IKMAN, MIBNO) will cause system errors and may affect the ocean profile.

## North American Routes

Multiple new NARs will be published both on 15 October 2015 and on 10 December 2015 that will utilize the new fixes. Operators and flight planners can receive these NARs from the undersigned.

The use of NARs will be mandatory for eastbound flights operating BAREE TUDEP and south during eastbound OTS hours and for westbound flights operating over RAFIN, BOBTU, and JEBBY at all times with the exception of aircraft routing over M201, M202, and M203.

As specified above, when NAT OTS design uses the oceanic entry and exit points from CUDDY and north, operators must file the published short leg NAR associated with each published NAT OTS track.

## FL 280 and below

Because the lower vertical boundary of the GOTA is flight level (FL) 290, RLatSM associated oceanic entry and exit points located within the boundaries of the GOTA are not available for route planning for flights operating at FL 280 and below. Including the GOTA oceanic entry and exit points the following fixes are not to be filed by aircraft operating at FL 280 and below: AVPUT, CLAVY, EMBOK, KETLA, LIBOR, MAXAR, NIFTY, PIDSO, RADUN, SAVRY, TOXIT, URTAK, VESMI, AVUTI, BOKTO, CUDDY, and DORYY.

Operators routinely operating at FL 280 and below should refer to the TC AIM, RAC 11 section for flight planning details.

## Further Information

For further information, please contact:

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James Ferrier
Manager, Aeronautical Information Management

# AERONAUTICAL INFORMATION CIRCULAR 23/15

## RECOMMENDED USE OF ARINC 424 IDENTIFIERS FOR HALF-DEGREE WAYPOINTS IN THE GANDER OCEANIC CONTROL AREA

### Introduction

Flights operating eastbound or westbound within the North Atlantic (NAT) Region are normally flight planned so that specified ten degrees of longitude (30°W, 40°W etc.) are crossed at whole degrees of latitude. This operating concept has supported a lateral separation minimum of 60 nautical mile (NM) in the NAT minimum navigation performance specification (MNPS) airspace. Commencing 12 November 2015, an operational trial of a 25 NM lateral separation minimum will be implemented by establishing NAT organized track system (OTS) tracks that are spaced by one-half degree of latitude.

Insertion of latitude/longitude waypoints into the flight management computer (FMC) can be achieved using multiple formats and accomplished via automated or manual means. However, while standard pilot pre-flight and in-flight procedures call for each pilot to independently display and verify the degrees and minutes loaded into the FMC for each waypoint defining the cleared route of flight, recent occurrences of gross navigation errors within the NAT Region indicate that certain formats and entry methods for insertion of latitude/longitude waypoints are more error prone than others.

In particular, manual entry of latitude/longitude waypoints using short codes derived from the ARINC 424 paragraph 7.2.5 standard (5050N = 50°N/50°W, N5050 =50°30'N/50°W) has been directly associated as a causal factor contributing to many of these recent occurrences.

### Purpose of Circular

This Aeronautical Information Circular (AIC) advises operators, navigational database vendors, and flight planning services that, due to the unresolved potential for FMC insertion errors:

- Aircraft navigation data bases should NOT contain waypoints in the Gander Oceanic Control Area in the ARINC-424 paragraph 7.2.5 format of "Nxxxx".
- If an aircraft operator or flight planning service has an operational need to populate data bases with half-degree waypoints in the Gander Oceanic Control Area, they are advised to use an alternate format, such as "Hxxxx".

The information provided is intended for publication in the Spring 2016, *Transport Canada Aeronautical Information Manual* (TC AIM – TP 14371E).

### Background

For waypoints inserted into the FMC using the existing ARINC 424 paragraph 7.2.5 format, the placement of "N" for **NORTH latitude** either before or after the numbers representing latitude and longitude determines whether the display represents ½ degree or a whole degree of latitude. For example:

- "4050N" represents 40 degrees **NORTH latitude** and 50 degrees **WEST longitude**; whereas
- "N4050" represents 40 degrees, 30 minutes **NORTH latitude** and 50 degrees **WEST longitude**.

When a database contains both the half and whole degree coordinates the potential for manual insertion errors increases. This is further complicated by cockpit display limitations which make it difficult for the crew to identify errors that have been introduced into the FMC. With one-half degree positions and other latitude/longitude positions that are not exactly at whole degrees, current technology does not display the full extent of the stored position data on the instruments used for primary reference.

## Preferred Methods of Waypoint Insertion

It is recommended that insertion of waypoints into the FMC be accomplished by established automated systems (e.g. CPDLC, AOC automated systems) wherever possible.

| | |
|---|---|
| **Note:** | Although not yet ready for use, the functionality supporting the uplink of CPDLC route clearances is under development for use in the Gander control area (CTA). When available, operators will be notified via NOTAM. |

The use of whole latitude/longitude coordinates to enter waypoints, using procedures that provide for adequate mitigation of display ambiguity, is strongly advocated.

Regardless of FMC waypoint format and entry method, flight crew procedures should require each pilot to independently display and verify the **DEGREES** and **MINUTES** loaded into the FMC for the latitude/longitude waypoints defining the route contained in the NAT oceanic clearance.

## Further Information

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James Ferrier
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# AERONAUTICAL INFORMATION CIRCULAR 13/15

## INABILITY OF AIR TRAFFIC CONTROLLERS TO ISSUE CLEARANCES

(Replaces AIC 26/13)

### Intention of Circular

This Aeronautical Information Circular (AIC) informs pilots of procedures that air traffic controllers (ATC) follow when they are unable to issue clearances.

### Background

Between 2006 and 2011, Transport Canada published several Advisory Circulars on reduced and low visibility operations (RVOP/LVOP) and runway protected areas. New direction to ATC followed on how to operate when these conditions existed.

Since implementation, a series of occurrences prompted a review of ATC direction, and it was found that controllers prohibited from providing clearances during RVOP/LVOP were using dissimilar or unclear phraseologies.

**Note:** ATC clearances are based on known traffic conditions and aerodrome limitations which affect the safety of aircraft operations. This encompasses aircraft in flight and on the manoeuvring area, vehicles, and other potential obstructions. ATC are not authorized to issue air traffic control clearances when traffic conditions are unknown, when any part of the aerodrome is partially or fully closed, or when the aerodrome or runway operating minima are not met.

### New Procedures

ATC procedures have been streamlined to ensure consistency. There are two distinct phrases used when unable to issue ATC clearances:

| | |
|---|---|
| AT YOUR DISCRETION: | Used to approve an aircraft movement on any surface not visible from the control tower due to a physical obstruction other than weather phenomena, or on the apron or non-manoeuvring area. The pilot is responsible to manoeuvre safely with respect to traffic or hazards encountered during the operation. ATC will provide information on known traffic or obstructions when possible. |
| UNABLE TO ISSUE CLEARANCE: | Used when a controller is not authorized to issue an ATC clearance. A pilot who continues without a clearance in these circumstances may be subject to regulatory action by Transport Canada. ATC will provide pertinent taxi/take-off/landing information and then file an aviation occurrence report. The pilot is responsible to manoeuvre safely with respect to traffic or other hazards encountered during the operation. |

The following table provides scenarios in which ATC may not be able to provide a clearance, ensuing ATC actions, and examples of phraseology that will be used:

<table>
<tr><th colspan="4">BELOW MINIMA<br>Reduced/low visibility operating procedures</th></tr>
<tr><th>Scenario</th><th>Pilot Request</th><th>Controller Action</th><th>Examples</th></tr>
<tr><td rowspan="2">Reduced Visibility Operations Plan (RVOP)/Low Visibility Operations Plan (LVOP) procedures have been implemented and result in manoeuvring area restrictions or closures<br><br>(RVOP/LVOP procedures vary across Canada, depending on airport operating limits)</td><td></td><td>Include information in the Automatic Terminal Information Service (ATIS)<br><br>Note: If conditions are rapidly changing, the information may be issued directly by ATC</td><td>ATIS<br>REDUCED/LOW VISIBILITY PROCEDURES IN EFFECT.<br>RUNWAY (number) NOT AUTHORIZED FOR TAKEOFF<br><br>or<br><br>REDUCED/LOW VISIBILITY PROCEDURES IN EFFECT.<br>RUNWAY (number) NOT AUTHORIZED FOR LANDING<br><br>or<br><br>REDUCED/LOW VISIBILITY PROCEDURES IN EFFECT.<br>RUNWAY (number) NOT AVAILABLE</td></tr>
<tr><td>Pilot requests taxi and takeoff clearance<br><br>Note: the request must be made prior to:<br><br>▪ Commencing pushback with the intent of taking off;<br>▪ Commencing pushback with the intent to taxi to the de-icing bay; or<br>▪ Commencing taxiing on the manoeuvring area under the aircraft’s own power with the intent of taking off.</td><td>ATC will inform the pilot that taxi clearance cannot be issued and provide the reason</td><td>PHRASEOLOGY<br>(Aircraft identification), UNABLE TAXI CLEARANCE ON TAXIWAY (name), REDUCED/LOW VISIBILITY PROCEDURES IN EFFECT</td></tr>
</table>

| BELOW MINIMA<br>Reduced/low visibility operating procedures | | | |
|---|---|---|---|
| **Scenario** | **Pilot Request** | **Controller Action** | **Examples** |
| | Pilot is taxiing for takeoff when RVOP/LVOP procedures are implemented that result in manoeuvring area restrictions or closures | ATC will:<br>▪ Inform the pilot that a clearance cannot be issued on the intended runway;<br>▪ Provide the reason;<br>▪ Determine if another runway is available for takeoff;<br>▪ Inform the pilot of the alternate runway; and<br>▪ Request the pilot's intentions.<br><br>If no alternate runway is available, ATC will request the pilot's intentions | PHRASEOLOGY<br>*(Aircraft identification)*, UNABLE CLEARANCE. REDUCED/LOW VISIBILITY PROCEDURES IN EFFECT. RUNWAY *(number)* CLOSED<br><br>Then, if appropriate:<br><br>*(Aircraft identification)*, RUNWAY *(number)* AVAILABLE, ADVISE INTENTIONS<br><br>or<br><br>*(Aircraft identification)*, UNABLE CLEARANCE. REDUCED/LOW VISIBILITY PROCEDURES IN EFFECT. ALL RUNWAYS CLOSED. ADVISE INTENTIONS |
| | Pilot requests taxi after landing | ATC will provide taxi clearance | PHRASEOLOGY<br>(Aircraft identification), TAXI VIA (taxi route) |
| | Pilot requests landing or takeoff | ATC will:<br>▪ Inform the pilot that a clearance cannot be issued;<br>▪ Provide the reason; and<br>▪ Request pilot intentions. | PHRASEOLOGY<br>*(Aircraft identification)*, UNABLE CLEARANCE. RUNWAY *(number)*, ARRIVALS NOT AUTHORIZED, ADVISE INTENTIONS |
| | Pilot chooses to land or take off | When traffic permits, ATC will:<br>▪ Inform the pilot that a clearance cannot be issued;<br>▪ Provide landing/take-off information;<br>▪ Notify the airport operator; and<br>▪ File a TC Aviation Occurrence Report. | PHRASEOLOGY:<br>(Aircraft identification), UNABLE CLEARANCE RUNWAY (number), WIND (if required), (other information if required)<br><br>**Note:** Information may be: traffic, hazards, obstructions, runway exit, runway surface conditions, or other pertinent information |

| **OBSTRUCTED RUNWAY PROTECTED AREA**<br>Controller unable to determine if runway or runway protected area is free/will be free of obstacles before: a) the arrival crosses the threshold, or b) before the departure starts take-off roll | | | |
|---|---|---|---|
| **Scenario** | **Pilot Request** | **Controller Action** | **Examples** |
| ATC is unable to issue a clearance | Pilot requests landing or takeoff | ATC will:<br>▪ Inform the pilot that a clearance cannot be issued;<br>▪ Provide the reason; and<br>▪ Request pilot intentions. | PHRASEOLOGY:<br>*(Aircraft identification)*, UNABLE CLEARANCE. RUNWAY *(number)*, PROTECTED AREA OBSTRUCTED. ADVISE INTENTIONS<br>**Note:** obstacles include taxiing aircraft and ground traffic. |
| | Pilot chooses to land or take off | When traffic permits ATC will:<br>▪ Inform the pilot that a clearance cannot be issued;<br>▪ Provide landing/take-off information;<br>▪ Notify the airport operator; and<br>▪ File a TC Aviation Occurrence Report. | PHRASEOLOGY:<br>(Aircraft identification), UNABLE CLEARANCE, WIND (if required), (other information, if required)<br>**Note:** Information may be: traffic, hazards, obstructions, runway exit, runway surface conditions or other pertinent information |

| REASONS OTHER THAN TRAFFIC | | | |
|---|---|---|---|
| **Scenario** | **Pilot Request** | **Controller Action** | **Examples** |
| ATC cannot issue a clearance for a reason other than traffic<br><br>**Note:** may occur when:<br><br>▪ The airport/part of the airport is closed by the operator; or<br>▪ ATC is directed by NAV CANADA or other authority to deny taxi clearance | Pilot requests a landing, takeoff or other manoeuvre | ATC will:<br><br>▪ Inform the pilot that a clearance cannot be issued;<br>▪ Provide the reason;<br>▪ Quote pertinent NOTAM(s) or airport condition directive(s); and<br>▪ Request the pilot's intentions | PHRASEOLOGY:<br>*(Aircraft identification)*, NOTAM SPRINGBANK STATES RUNWAY ZERO SEVEN IS CLOSED FOR MAINTENANCE UNTIL *(Date, Time)*. ADVISE INTENTIONS |
| | Pilot chooses to land/take off or manoeuvre | When traffic permits, ATC will:<br><br>▪ Inform the pilot that a clearance cannot be issued;<br>▪ Provide required landing, takeoff or manoeuvring information;<br>▪ Notify the airport operator; and<br>▪ File a TC Aviation Occurrence Report | PHRASEOLOGY:<br>(Aircraft identification), UNABLE CLEARANCE, WIND (if required), (other information, if required)<br><br>**Note:** Information may be: traffic, hazards, obstructions, runway exit, runway surface conditions or other pertinent information |

| AT YOUR DISCRETION | | |
|---|---|---|
| **Pilot Request** | **Controller Action** | **Examples** |
| Push back | ATC will provide ground traffic, if possible | PHRASEOLOGY:<br>(Aircraft identification), PUSH BACK AT YOUR DISCRETION, and if possible, TRAFFIC (description) |
| Taxi on a non-manoeuvring area | Workload permitting, ATC will provide information on traffic and obstructions | PHRASEOLOGY:<br>(Aircraft identification), TAXI AT YOUR DISCRETION, and if necessary, TRAFFIC (description) |

| AT YOUR DISCRETION | | |
|---|---|---|
| **Pilot Request** | **Controller Action** | **Examples** |
| Taxi on a manoeuvring area not visible from the control tower or non-manoeuvring area | ATC will provide ground traffic, if possible | PHRASEOLOGY:<br>*(Aircraft identification)*, *(area)* NOT VISIBLE, TAXI AT YOUR DISCRETION ON TAXIWAY *(name)*<br><br>**Note:** This means that the view of the manoeuvring area is obstructed by a structure(s); it does not include restricted visibility due to weather |
| Fixed-wing aircraft landing or taking off from a non-manoeuvring area that is approved for that purpose<br><br>**Note:** may be an area at or adjacent to the airport, not at the airport, but in the control zone; a water aerodrome; a temporary landing area in the control zone; etc. | ATC will provide traffic and obstruction information, and control instructions as necessary | PHRASEOLOGY:<br>(Aircraft identification), TRAFFIC (description), WIND (if required), LAND/TAKE OFF AT YOUR DISCRETION, and if necessary FROM (location) |
| Helicopter landing or takeoff from a non-manoeuvring area that is approved for that purpose | | |

## Publication Changes

A future edition of the *Transport Canada Aeronautical Information Manual* (TC AIM – TP 14371E) will be amended to reflect this information.

## Validity

Effective 2 May 2013. For further information, please contact:

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# AERONAUTICAL INFORMATION CIRCULAR 40/12

## NOTICE OF MANDATE FOR DATA LINK SERVICES IN THE NORTH ATLANTIC REGION

(Supersedes AIC 24/12)

### Introduction

It is widely acknowledged that data link services enhance surveillance and intervention capabilities, and its availability constitutes a crucial component in providing safe, efficient, and sustainable operations, as well as facilitating the future evolution of the air traffic management (ATM) system in the North Atlantic (NAT) region.

As notified in State letter EUR/NAT 12-0003.TEC (dated 04 January 2012), all aircraft intending to conduct flights in the portions of the NAT regional airspace defined below shall be fitted with, and shall operate controller-pilot data link communications (CPDLC) and Automatic Dependent Surveillance-Contract (ADS-C) equipment.

### Purpose of Circular

This aeronautical information circular (AIC) outlines the defined airspace for the data link mandate, methods of indicating equipage in flight plan, and details the timelines for implementation.

### Background

The CPDLC and ADS-C implementation based on RTCA DO-258A/EUROCAE ED-100A (or ED-100) avionics standards started in the International Civil Aviation Organization (ICAO) NAT region at the end of 1990. Data link service enhances ATM surveillance and intervention capabilities and is seen as instrumental in reducing the collision risk, particularly in the vertical plane, and meeting the NAT target level of safety (TLS). The use of ADS-C vertical and horizontal deviation event contracts to conformance monitor aircraft help towards quickly resolving this significant safety issue.

The use of ADS-C would also greatly facilitate search and rescue operations and location of an aircraft following an accident in oceanic airspace.

In order to achieve the foregoing safety objectives, it is important to increase the level of data link equipage in the NAT. The current level of data link usage in the NAT has reached 45-50% and continues to grow. Introducing a mandatory data link equipment carriage requirement will increase the NAT data link equipage level and help in meeting the NAT TLS.

### Area of Applicability

The NAT data link mandate will be implemented incrementally, via two phases.

The first phase will commence 7 February 2013, with all aircraft operating on or at any point along two specified tracks within the NAT organized track system (OTS) from flight level (FL) 360 to FL 390 inclusive required to be fitted with and using CPDLC and ADS-C equipment. The mandate will be in effect during the OTS validity period, and is applicable to those flights that will cross 30° W during the published track times.

The specified tracks will be those for which the predicted loading is in the higher percentage of overall predicted NAT OTS loading on that day and shall be identified in the Remarks section of the NAT OTS message. Non compliant aircraft will not be permitted to join or cross the specified tracks during the NAT OTS validity period. However, continuous climb or descent through the specified levels may be available, subject to traffic.

The specified tracks will be published as part of the NAT OTS message in REMARKS 2.

**Example:**

REMARKS:

1. TMI IS 108 AND OPERATORS ARE REMINDED TO INCLUDE THE TMI NUMBER AS PART OF THE OCEANIC CLEARANCE READ BACK.
2. ADS-C AND CPDLC MANDATED OTS ARE AS FOLLOWS

   TRACK B 360 370 380 390

   TRACK D 360 370 380 390

   END OF ADS-C AND CPDLC MANDATED OTS

The second phase will commence 5 February 2015 in specified portions of NAT minimum navigation performance specifications (MNPS) airspace. The vertical and lateral dimensions of the airspace will be defined and advertised at a later date.

## Flight Planning

Operators intending to conduct flights in the airspace defined above shall be fitted with and shall operate CPDLC and ADS-C. The appropriate equipage to be indicated in Item 10 (equipment and capabilities) of the ICAO flight plan is as follows:

- D1 ADS-C with FANS 1/A capabilities and
  - J2 CPDLC FANS 1/A HFDL and/or
  - J5 CPDLC FANS 1/A SATCOM (INMARSAT) and/or
  - J7 CPDLC FANS 1/A SATCOM (Iridium).

## Further Information

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# AERONAUTICAL INFORMATION CIRCULAR 27/06

## EXEMPTION FROM SUBSECTION 602.34(2) OF THE *CANADIAN AVIATION REGULATIONS*

Pursuant to subsection 5.9(2) of the *Aeronautics Act*, and taking into account that the exemption is both in the public interest and not likely to affect aviation safety, I hereby exempt **persons conducting IFR flight, in Reduced Vertical Separation Minimum (RVSM) airspace while operating an RVSM certified aircraft**, from the requirement to operate at a cruising flight level appropriate to the track, as set out in the Table referenced in subsection 602.34(2) of the *Canadian Aviation Regulations* (CARs), subject to the following conditions.

Subsection 602.34(2) states: *"Subject to subsection (3), the pilot-in-command of an aircraft shall ensure that the aircraft is operated at a cruising altitude or cruising flight level appropriate to the track, as set out in the table to this section, unless the pilot-in-command is assigned another altitude or flight level by an air traffic control unit and the aircraft is operated in level cruising flight*

*a) at more than 3,000 feet AGL, in VFR flight; or*

*b) in IFR flight."*

Note: Subsection 602.34(2) *Table* currently requires 2000 feet vertical separation between FL290 to FL410 inclusive.

### Purpose

This exemption will permit **persons conducting IFR flight, in Reduced Vertical Separation Minimum (RVSM) airspace while operating an RVSM certified aircraft**, to operate at altitudes appropriate to track between FL290 to FL410 inclusive, in accordance with the 1000 feet RVSM vertical separation. RVSM procedures will permit certified RVSM aircraft to be operated with 1000 feet vertical separation in lieu of the current 2000 feet separation. The implementation of RVSM in a designated portion of Northern Canadian Airspace occurred on April 18, 2002, and in Southern Domestic Airspace on January 20, 2005.

### Application

The exemption applies **only** to persons conducting IFR flight, within Reduced Vertical Separation Minimum (RVSM) airspace while operating a RVSM certified aircraft.

### Conditions

This exemption is subject to the following conditions:

1. A person operating a RVSM certified aircraft in RVSM airspace shall conduct IFR flight, in accordance with subsection 602.34(2) of the CARs, with reference to the following *Table*; and
2. Persons conducting IFR flight, in Reduced Vertical Separation Minimum (RVSM) airspace shall operate RVSM certified aircraft.

**Table**
**Cruising Altitudes and Cruising Flight Levels Appropriate to Aircraft Track**

| **TRACK 000° - 179°** | | | **TRACK 180° - 359°** | |
|---|---|---|---|---|
| **Column I** | **Column II** | | **Column III** | **Column IV** |
| **IFR** | **VFR** | | **IFR** | **VFR** |
| 1,000<br>3,000<br>5,000<br>7,000<br>9,000<br>11,000<br>13,000<br>15,000<br>17,000 | -<br>3,500<br>5,500<br>7,500<br>9,500<br>11,500<br>13,500<br>15,500<br>17,500 | Cruising Altitudes or Cruising Flight Levels – 18,000 feet and below | 2,000<br>4,000<br>6,000<br>8,000<br>10,000<br>12,000<br>14,000<br>16,000 | -<br>4,500<br>6,500<br>8,500<br>10,500<br>12,500<br>14,500<br>16,500 |
| **IFR & CVFR** | | Cruising Flight Levels 180 to 590<br><br>**RVSM 1,000 feet separation FL290-FL410** | **IFR & CVFR** | |
| 190<br>210<br>230<br>250<br>270<br>**290**<br>**310**<br>**330**<br>**350**<br>**370**<br>**390**<br>**410**<br>450<br>490<br>530<br>570 | | | 180<br>200<br>220<br>240<br>260<br>280<br>**300**<br>**320**<br>**340**<br>**360**<br>**380**<br>**400**<br>430<br>470<br>510<br>550 | |

## Validity

This exemption is in effect until the earliest of the following:

a) The date on which an amendment to subsection 602.34(2) *Table* of the CARs comes into effect;

b) The date on which any condition set out in this exemption is breached; or

c) The date on which this exemption is cancelled, in writing, by the Minister, where he is of the opinion that it is no longer in the public interest, or that it is likely to affect aviation safety.

## Cancellation

The exemption from subsection 602.34(2) of the *Canadian Aviation Regulations* issued on **April 28, 2005**, in Ottawa, Ontario, Canada, by the Director General Civil Aviation, on behalf of the Minister of Transport, to **persons conducting IFR flight, in Reduced Vertical Separation Minimum (RVSM) airspace and operating an RVSM certified aircraft**, is hereby cancelled because it is the opinion of the Minister that it is no longer in the public interest or is likely to affect aviation safety.

Dated at Ottawa, Ontario, Canada, this 28th day of July, 2006, on behalf of the **Minister of Transport, Infrastructure and Communities.**

Merlin Preuss
Director General
Civil Aviation