



# Advisory Circular

**Subject: North Atlantic - High Level Airspace Operations (NAT HLA):  
Special Authorization/Specific Approval and Guidance**

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## 1.0 Introduction

- (1) Subject to paragraph (3), this Advisory Circular (AC) provides the conditions and associated guidance applicable to the Special Authorization/Specific Approval (SA) for North Atlantic High Level Airspace (NAT HLA). It describes the acceptable means of demonstrating compliance with regulations and standards. This AC on its own does not change, create, amend or permit deviations from regulatory requirements.
- (2) Operators are expected to follow the means of compliance described in this AC in all respects.
- (3) The conditions of the associated SA appear in Appendix A of this AC:
  - (a) For air operators, the conditions published in Appendix A of this AC constitute part of the air operator certificate (AOC). As such, compliance with these conditions is mandatory.
  - (b) For private operators, the conditions published in Appendix A of this AC constitute part of the private operator registration document (PORD). As such, compliance with these conditions is mandatory.

## 1.1 Purpose

- (1) The purpose of this AC is to provide Canadian air operators with information pertaining to the Special Authorization/Specific Approval (SA) to operate within the North Atlantic High Level Airspace (NAT HLA), including areas designated as Blue Spruce Routes.
- (2) This authorization is issued by Transport Canada Civil Aviation (TCCA) to Canadian air operators holding a Private Operator Registration Document (PORD) issued under subpart 604, or an AOC issued under subparts 702, 703, 704 and 705 of the *Canadian Aviation Regulations* (CARs). Until a Standard on NAT HLA is published in the *Commercial Air Services Standards* (CASS), the content of this AC will constitute the conditions to be met to obtain the Special Authorization/Specific Approval for NAT HLA.

## 1.2 Applicability

- (1) This AC is applicable to:
  - (a) Canadian air operators holding an AOC issued under subparts 702, 703, 704 and 705 of the CARs, private operators holding a Private Operator Registration Document (PORD) issued under subpart 604 of the CARs, or foreign air operators holding a Canadian Foreign Air Operator Certificate (FAOC);
  - (b) Pilots, flight dispatchers, flight followers and other operational personnel employed by the operators listed above;
  - (c) TCCA inspectors with certification and safety oversight responsibilities; and
  - (d) Individuals and organizations that exercise privileges granted to them under an External Ministerial Delegation of Authority.
- (2) Operators are required to utilize this AC to assist them in reviewing this topic and to determine the applicability of its contents to their specific aircraft types and operating conditions.
- (3) This information is also provided to the aviation industry at large for information and guidance purposes.

## 1.3 Description of changes

- (1) Removal of an incorrect reference to EASA AMC 20-26 found in Appendix A and B of this AC.
- (2) To include clarification to Blue Spruce Routes in Appendix B.

- (3) Small editorial changes.

## 2.0 References and requirements

### 2.1 Reference documents

- (1) It is intended that the following reference materials be used in conjunction with this document:
- (a) *Aeronautics Act* (R.S., 1985, c. A-2)
  - (b) Subpart 604 of the *Canadian Aviation Regulations* (CARs) – Private Operator Passenger Transportation
  - (c) Subpart 702 of the CARs - Aerial Work Operations
  - (d) Subpart 703 of the CARs - Air Taxi Operations
  - (e) Subpart 704 of the CARs - Commuter Operations
  - (f) Subpart 705 of the CARs - Airline Operations
  - (g) Standard 722 of the *Commercial Air Services Standards* (CASS) - Aerial Work
  - (h) Standard 723 of the CASS - Air Taxi
  - (i) Standard 724 of the CASS - Commuter Operations
  - (j) Standard 725 of the CASS - Airline Operations
  - (k) Canada Flight Supplement (CFS) – GPH 205
  - (l) ICAO Doc 10037 Global Operational Data Link Document (GOLD)
  - (m) ICAO Annex 6 Operation of Aircraft
  - (n) ICAO NAT Doc 007 North Atlantic Operations and Airspace Manual
  - (o) ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management
  - (p) ICAO Doc 7030 NAT Regional Supplementary Procedures
  - (q) ICAO Doc 9613 Performance-based Navigation Manual
  - (r) ICAO Doc 9869 Performance-based communication and Surveillance (PBCS) Manual
  - (s) Transport Canada Advisory Circular AC 700-006 Required Navigation Performance 4 (RNP 4) and Required Navigation Performance 10 (RNP 10) Airspace
  - (t) Transport Canada Advisory Circular AC 700-038 Performance-Based Navigation (PBN) – Enroute
  - (u) Transport Canada Advisory Circular AC 700-039 Requirements to Obtain Reduced Vertical Separation Minimum (RVSM)
  - (v) Transport Canada Advisory Circular AC 700-041 Performance-Based Communications and Surveillance
  - (w) North Atlantic Operations Bulletin (NAT Ops Bulletin)
  - (x) Transport Canada Civil Aviation Safety Alert 2019-10
  - (y) Transport Canada Publication TP 4711, Domestic Operator Certification Manual - Volume 3 - Operations Specifications
  - (z) Transport Canada Aeronautical Information Manual (TC AIM – TP14371)

- (2) The table below lists the regulatory authorities under which the Special Authorization/Specific Approval for NAT HLA is issued to operators.

For operations conducted under the following Subparts of the CARs	The SA is pursuant to the following provisions
604	Subparagraph 604.55(1)(a) of the CARs
702	Subparagraph 702.08(g)(xii) of the CARs
703	Subparagraph 703.08(g)(x) of the CARs
704	Subparagraph 704.08(g)(xi) of the CARs
705	Subparagraph 705.08(g)(xi) of the CARs

**2.2 Cancelled documents**

- (1) Civil Aviation Safety Alert (CASA) 2019-10, Issue 01 – **North Atlantic High Level Airspace (NAT HLA)**.
- (2) By default, it is understood that the publication of a new issue of a document automatically renders any earlier issues of the same document null and void.

**2.3 Definitions and abbreviations**

- (1) The following **definitions** are used in this document:
- (a) **Accuracy:** A measure of the total navigation system to track the aircraft position within a certain horizontal radial distance for at least 95 percent of the total flight time.
  - (b) **Automatic Dependent Surveillance – Broadcast (ADS-B):** A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link (ICAO).
  - (c) **Automatic Dependent Surveillance – Contract (ADS-C):** A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports (ICAO).  
  
**Note:** The abbreviated term “ADS contract” is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode.
  - (d) **Fault Detection and Exclusion (FDE):** A Receiver Autonomous Integrity Monitoring (RAIM) algorithm that can automatically detect and exclude a faulty satellite from the position solution when measurements from six or more satellites are available. Wide Area Augmentation System (WAAS) equipment uses FDE for integrity whenever a WAAS signal is not available to permit continued operation from enroute through approach operations.

- (e) **Global Navigation Satellite System (GNSS):** A generic term used by ICAO to define any global position, speed, and time determination system that includes:
  - (i) one or more main satellite constellations, such as GPS and GLONASS etc.;
  - (ii) aircraft receivers; and
  - (iii) several integrity monitoring systems. These can include:
    - (A) Aircraft-Based Augmentation Systems (ABAS);
    - (B) Satellite-Based Augmentation Systems (SBAS), such as the Wide Area Augmentation Systems (WAAS); and
    - (C) Ground-Based Augmentation System (GBAS), such as the Local Augmentation System (LAAS).
- (f) **Global Positioning System (GPS):** The United States operated satellite-based radio navigation system that uses precise distance measurements to determine the position, speed, and time in any part of the world. The GPS is made up by three elements: the spatial, the control, and the user elements. The GPS spatial segment nominally consists of at least 24 satellites in 6 orbital planes. The control element consists of 5 monitoring stations, 3 ground antennas, and one main control station. The user element consists of antennas and receivers that provide the user with position, speed, and precise time.
- (g) **Integrity:** A measure of the trust that can be placed in the correctness of the information supplied by the total system. Integrity includes the ability of a system to provide timely and valid warnings to the user (alerts).
- (h) **Navigation specification:** A set of requirements needed to implement and support performance based navigation within a defined airspace.
  - (i) RNAV specification: A navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, designated by the prefix RNAV (e.g., RNAV 5, RNAV 1).
  - (ii) RNP specification: A navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, designated by the prefix RNP (e.g., RNP 4, RNP APCH).
- (i) **North Atlantic Operations Bulletins (NAT OPS Bulletin):** NAT Ops Bulletins are used to distribute information on behalf of the North Atlantic Systems Planning Group (NAT SPG) for the purpose of providing guidance to North Atlantic (NAT) operators on material relevant to their operations.
- (j) **Oceanic Entry Point:** The Oceanic Entry point is generally a “named” waypoint, on or close to the FIR boundary where the aircraft enters an oceanic control area.
- (k) **Oceanic Exit Point:** The Oceanic Exit point is generally a “named” waypoint, on or close to the FIR boundary where the aircraft leaves the last oceanic control area.
- (l) **Operations Specification:** the authorizations, including Special Authorizations/Specific Approvals, conditions and limitations associated with the operator certificate and subject to the conditions in the operations manual.
- (m) **Performance Based Navigation (PBN):** Area navigation based on performance requirements for aircraft operating along an Air Traffic Service (ATS) route, on an instrument approach procedure or in a designated airspace.
- (n) **Receiver Autonomous Integrity Monitoring (RAIM):** A form of ABAS whereby a GNSS receiver processor determines the integrity of the GNSS navigation signals using only GPS signals or GPS signals augmented with altitude (Baro-aiding). This determination is

achieved by a consistency check between redundant pseudo-range measurements. At least one additional satellite needs to be available with the correct geometry over and above that needed for the position estimation for the receiver to perform the RAIM function.

- (o) **RNAV System:** A navigation system which permits aircraft operation on any desired flight path within the coverage of station-referenced NAVAIDs or within the limits of the capability of self-contained aids, or a combination of these. An RNAV system may be included as part of a flight management system (FMS).

**Note:** Recognizing the extent of existing airspace designations and operational approvals under RNP 10 designation, it is anticipated that any new airspace designations and aircraft approvals will continue to use the “RNP 10” term while the required PBN application will now be known as “RNAV 10.”

- (p) **RNP System:** An area navigation system that includes on-board performance monitoring and alerting.
- (q) **Satellite-Based Augmentation System (SBAS):** A wide coverage augmentation system in which the user receives augmentation information from a satellite-based transmitter. The Wide Area Augmentation System (WAAS) is a form of SBAS.
- (r) **Specific Approval:** an approval which is documented in the operations specification. The term is interchangeable with Special Authorization.
- (s) **Special Authorization:** an approval which is documented in the operations specifications. The term is interchangeable with Specific Approval.

- (2) The following **abbreviations** are used in this document:

- (a) **AC:** Advisory Circular
- (b) **ADS:** Automatic Dependent Surveillance
- (c) **ADS-B:** Automatic Dependent Surveillance – Broadcast
- (d) **ADS-C:** Automatic Dependent Surveillance – Contract
- (e) **CASS:** *Commercial Air Service Standards*
- (f) **CDU:** Control Display Unit
- (g) **COM:** Company Operations Manual
- (h) **CPDLC:** Controller Pilot Data Link Communications
- (i) **DLM:** Data Link Mandate
- (j) **FAA:** Federal Aviation Administration (United States)
- (k) **FANS 1/A:** Future Air Navigation System 1 or A (Respectively, Boeing and Airbus Proprietary Air-Ground ATC Data Link Communication Systems) or equivalent
- (l) **FAOC:** Foreign Air Operator Certificate
- (m) **FDE:** Fault Detection and Exclusion
- (n) **FIR:** Flight Information Region
- (o) **FL:** Flight Level
- (p) **FMS:** Flight Management System
- (q) **GNSS:** Global Navigation Satellite System
- (r) **HF:** High Frequency

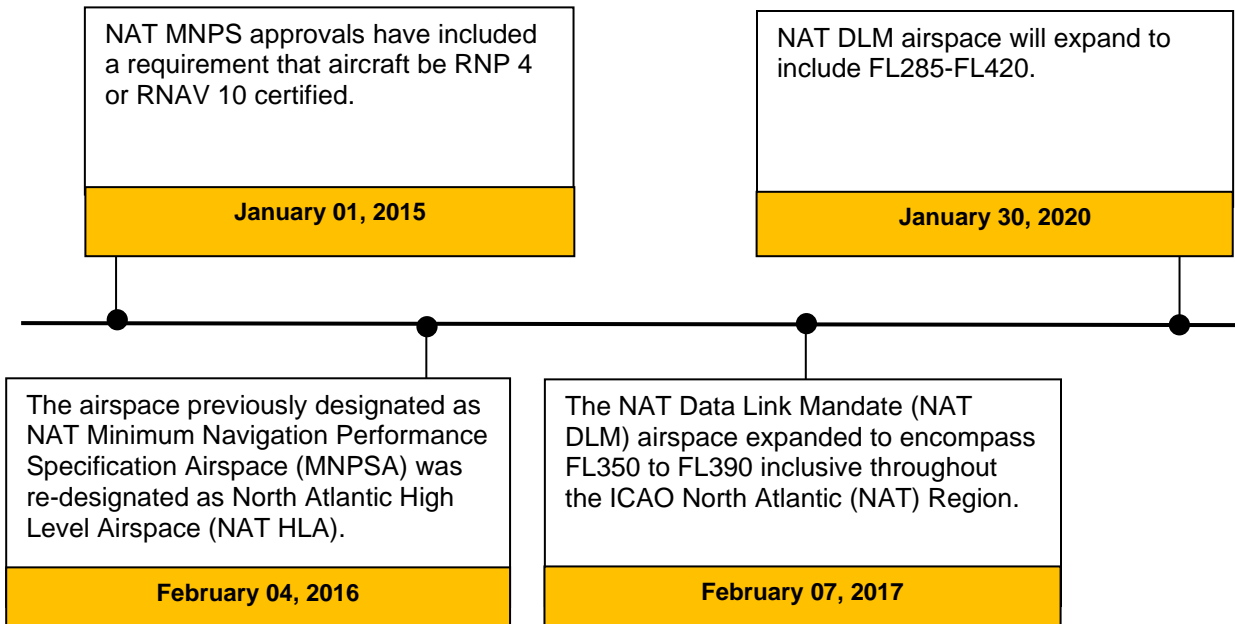
- (s) **ICA:** Instruction for Continuing Airworthiness
- (t) **ICAO:** International Civil Aviation Organization
- (u) **INS:** Inertial Navigation System
- (v) **LRNS:** Long Range Navigation System
- (w) **MNPS:** Minimum Navigation Performance Specification
- (x) **MNPSA:** Minimum Navigation Performance Specification Airspace
- (y) **NAT:** North Atlantic
- (z) **NAT HLA:** North Atlantic High Level Airspace
- (aa) **NAT OPS:** North Atlantic Operations
- (bb) **NAT-OTS:** North Atlantic Organized Track System
- (cc) **OCA:** Oceanic Control Area
- (dd) **OTS:** Organized Track System
- (ee) **PBCS:** Performance Based Communication and Surveillance
- (ff) **PBN:** Performance Based Navigation
- (gg) **PORD:** Private Operator Registration Document
- (hh) **RAIM:** Receiver Autonomous Integrity Monitoring
- (ii) **RNP:** Required Navigation Performance
- (jj) **RVSM:** Reduced Vertical Separation Minimum
- (kk) **SA:** Specific Authorization/Specific Approval
- (ll) **SELCAL:** Selective Calling
- (mm) **SLOP:** Strategic Lateral Offset Procedures
- (nn) **SOP:** Standard Operating Procedures
- (oo) **TCAS:** Traffic Collision Avoidance System
- (pp) **TCCA:** Transport Canada Civil Aviation

### **3.0 Background**

#### **3.1 General**

- (1) On February 04, 2016 the airspace previously designated as NAT Minimum Navigation Performance Specification Airspace (MNPSA) was re-designated as North Atlantic High Level Airspace (NAT HLA).
- (2) The final phase of the International Civil Aviation Organization (ICAO), NAT region initiative for the Data Link Mandate (DLM) including the expanded vertical and horizontal boundaries from Flight Level (FL) 285 to 420 commenced January 30th, 2020. The changes to the navigational performance required for a North Atlantic High Level Airspace (NAT HLA) became effective on January 30, 2020.

(3) NAT HLA and Data Link Mandate overview timeline:



**Note:** NAT MNPS approvals issued prior to January 1, 2015 and/or based on the previous MNPS approval were not valid beyond January 30, 2020.

- (4) With full implementation of DLM airspace, there will be a corridor in the same geographic area as the current Blue Spruce Routes for aircraft not equipped with CPDLC / ADS-C. Aircraft using this corridor will require Automatic Dependent Surveillance – Broadcast (ADS-B) equipment.
- (5) Organized tracks are formulated and published in a North Atlantic (NAT) track message via the Aeronautical Fixed Telecommunications Network (AFTN) and sent to all interested operators. The daytime structure is published by Shanwick area control centre (ACC) and the night-time structure is published by Gander ACC.
- (6) The flight levels normally associated with the NAT-OTS are FL310 to FL400 inclusive.
- (7) The use of the NAT-OTS tracks is not mandatory; aircraft may flight plan on random routes which remain clear of the NAT-OTS, or may fly on any route that joins, leaves, or crosses the OTS.
- (8) NAT HLA is that volume of airspace (as defined in ICAO Document 7030) between flight level (FL) 285 and FL 420 within the oceanic control areas of Bodo Oceanic, Gander Oceanic, New York Oceanic East, Reykjavik, Santa Maria, and Shanwick, excluding the Shannon and Brest Ocean Transition.
- (9) It is implicit in the concept of the NAT HLA that all flights within the airspace achieve the highest standards of performance for horizontal and vertical navigation accuracy.
- (10) All required conditions for the issuance of Special Authorization/Specific Approval **NAT HLA** are provided in Appendix A of this AC.

**Note:** The conditions in Appendix A require other SAs as a prerequisite.

### 3.2 Application and structure of this Advisory Circular

- (1) This Advisory Circular (AC) provides the conditions and associated guidance applicable to the Special Authorization/Specific Approval NAT HLA.
- (2) To accomplish the above stated objectives, this AC is structured in the following sections:



- (a) **Main Body:** Provides background information and general guidance.
- (b) **Appendix A:** Stipulates the conditions which operators must meet to be issued the **NAT HLA** Special Authorization/Specific Approval. Compliance with these conditions is mandatory for operators and pilots conducting operations in NAT HLA airspace.
- (c) **Appendix B:** Provides specific guidance with respect to the conditions provided in Appendix A. To facilitate cross-reference, the guidance in Appendix B utilizes the same numbering as the conditions in Appendix A.
- (d) **Appendix C:** Features a compliance checklist for the conditions appearing in Appendix A. This compliance checklist has been developed to assist operators to confirm that they are in compliance with the conditions of the Special Authorization/Specific Approval **NAT HLA**. It also serves as an aid to Transport Canada Civil Aviation (TCCA) personnel for certification and safety oversight purposes.
- (e) **Appendix D:** Provides a list of the provisions in the *Canadian Aviation Regulations* (CARs) and *Commercial Air Service Standards* (CASS) that are applicable to operators conducting flights within NAT HLA airspace.

#### **4.0 Transport Canada Civil Aviation approval**

- (1) A Canadian operator should apply to their Principal Operations Inspector (POI) to request the SA NAT HLA.

#### **5.0 Information management**

- (1) Not applicable.

#### **6.0 Document history**

- (1) Not applicable.

## **7.0 Contact us**

For more information, please contact:

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We invite suggestions for amendment to this document. Submit your comments to:

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### ***Original signed by***

Stacey Mason  
Director, Standards  
Civil Aviation

## Appendix A — Conditions for NAT HLA

### Authority

The Special Authorization/Specific Approval **North Atlantic – High Level Airspace Operations (NAT HLA)** is issued pursuant to subparagraphs 604.55(1)(a), 702.08(g)(xii), 703.08(g)(x), 704.08(g)(xi), and 705.08(g)(xi) of the *Canadian Aviation Regulations (CARs)*. It authorizes an operator to operate within NAT HLA airspace.

### Conditions

(1) This authority is granted subject to the following conditions:

#### 1.0 Operator requirements

##### 1.1 Prerequisite Special Authorization/Specific Approval

1.1.1 The conduct of operations within NAT HLA airspace, including areas designated as Blue Spruce Routes, requires the following authorization:

(a) Special Authorization/Specific Approval **NAT HLA**.

##### 1.2 Documentation

1.2.1 The air operator's Company Operations Manual (COM), or private operator's equivalent, shall address the conduct of NAT HLA operations. The contents of the COM, including the Standard Operating Procedures (SOP), shall include, but are not limited to:

- (a) the conditions as stipulated in Appendix A of this advisory circular (AC) and associated guidance; and
- (b) any safety information respecting NAT HLA operations which the operator deems appropriate.

##### 1.3 Operational procedures

1.3.1 The operator shall develop and use SOPs applicable to NAT HLA operations.

1.3.2 The operator's minimum equipment list (MEL) shall be amended in order to comply with requirements for NAT HLA.

1.3.3 The operator shall develop detailed provisions for NAT HLA operations covering the following:

- (a) General procedures;
- (b) Pre-flight procedures;
- (c) In-flight procedures;
- (d) Special in-flight procedures; and
- (e) Special procedures for in-flight contingencies.

##### 1.4 Ground and flight training (initial and recurrent)

1.4.1 The operator must provide ground training for flight crew members, dispatchers, flight followers and maintenance personnel in NAT HLA operations and concepts as they apply to the responsibilities of these personnel.

(a) **Flight Crew Members:** all pilots who will be operating in the NAT HLA;

- (b) **Operational Control Personnel:** all dispatchers and flight followers involved in the planning and operational control of flights intended to operate in the NAT HLA; and
- (c) **Maintenance Personnel:** involved in the routine or detailed checks with respect to NAT HLA operations.

1.4.2 The operator's approved initial and recurrent ground training program shall include, but is not limited to:

- (a) the conditions as stipulated in Appendix A of this AC and associated guidance; and
- (b) any other safety information respecting NAT HLA operations the operator deems appropriate.

## 2.0 Aircraft requirements

### 2.1 Type certification requirements

2.1.1 The aeroplane utilized to conduct operations in NAT HLA airspace must have an aircraft certification approval in accordance with aircraft certification/airworthiness requirements of:

- (a) FAA AC 90-105 (A) or later.

### 2.2 Continued airworthiness

2.2.1 The operator of aircraft approved to conduct NAT HLA operations must ensure that the navigation system is maintained according to the design approval holder's instruction for continuing airworthiness (ICAs), including any software updates.

### 2.3 Aircraft eligibility requirements

2.3.1 The design approval holder must contact TCCA Aircraft Certification to coordinate a demonstration of compliance.

2.3.2 Standard equipment for restricted NAT HLA operations must include the following:

- (a) Controller Pilot Data Link (CPDLC) / Automatic Dependent Surveillance – Contract (ADS-C) Future Air Navigation System 1 or A (Fans 1/A) - (Respectively, Boeing and Airbus Proprietary Air-Ground ATC Data Link Communication Systems);
- (b) Long Range Navigation Systems (LRNS);
- (c) Transponder;
- (d) Traffic Collision Avoidance System (TCAS) 7.1;
- (e) High Frequency (HF)

**Note:** Please refer to ICAO Doc 007 for specific aircraft requirements.

2.3.3 The operator must establish procedures with respect to the following minimum navigation performance in order to conduct NAT HLA operations:

- (a) Required Navigation Performance (RNP) 4 or 10 – Special Authorization/Specific Approval; and
- (b) Reduced Vertical Separation Minima (RVSM) – Special Authorization/Specific Approval.

- 2.3.4 For unrestricted NAT HLA (use of PBCS tracks) operations, the operator must be approved with the following, in addition to the standard equipment listed in 2.3.2:
- (a) Performance Based Communication and Surveillance – Special Authorization/Specific Approval.

**Appendix B — Specific guidance respecting the conditions of the SA – NAT HLA**

**B.1 Overview**

- (1) The matrix below provides specific guidance corresponding to the conditions specified for the Special Authorization/Specific Approval (SA) NAT HLA, which appears in Appendix A of this AC.

Condition in Appendix A (Paragraph No.)	Guidance information
<b>1.0 Operator requirements</b>	
<b>1.1 Prerequisite Special Authorization/Specific Approval</b>	
1.1.1 The conduct of operations within NAT HLA airspace, including areas designated as Blue Spruce Routes, requires the following authorization:  (a) Special Authorization/Specific Approval <b>NAT HLA.</b>	This SA is a prerequisite for the conduct of NAT HLA operations.  All conditions of this AC must be met (Appendix A).
<b>1.2 Documentation</b>	
1.2.1 The air operator’s Company Operations Manual (COM), or private operator’s equivalent, shall address the conduct of NAT HLA operations. The contents of the COM, including the Standard Operating Procedures (SOPs), shall include, but are not limited to:  (a) the conditions as stipulated in Appendix A of this advisory circular (AC) and associated guidance; and  (b) any safety information respecting NAT HLA operations which the operator deems appropriate.	Reserved
<b>1.3 Operational procedures</b>	
1.3.1 The operator shall develop and use SOPs applicable to NAT HLA operations.	Reserved
1.3.2 The operator’s minimum equipment list (MEL) shall be amended in order to comply with requirements for NAT HLA.	Reserved

<p>1.3.3 The operator shall develop detailed provisions for NAT HLA operations covering the following:</p> <ul style="list-style-type: none"> <li>(a) General procedures</li> <li>(b) Pre-flight procedures</li> <li>(c) In-flight procedures</li> <li>(d) Special in-flight procedures</li> <li>(e) Special procedures for in-flight contingencies</li> </ul>	<p>ICAO Doc 007 – North Atlantic Operations and Airspace Manual provides detailed guidance on the following procedures:</p> <ul style="list-style-type: none"> <li>(a) General Procedures <ul style="list-style-type: none"> <li>(i) Presentation of Navigation Information</li> <li>(ii) Importance of Accurate Time</li> <li>(iii) The use of a Master Document</li> <li>(iv) Position Plotting</li> <li>(v) Provision of Climbs</li> <li>(vi) Relief Flight Crew Members</li> </ul> </li> <li>(b) Pre-Flight Procedures <ul style="list-style-type: none"> <li>(i) RNP Approval Status</li> <li>(ii) Inertial Navigation Systems</li> <li>(iii) Insertion of Initial latitude and Longitude</li> <li>(iv) System Alignment</li> <li>(v) GNSS (GPS) Systems</li> <li>(vi) Satellite Availability</li> <li>(vii) Satellite Navigation Prediction</li> <li>(viii) Operational Control Restrictions</li> <li>(ix) The Capability to Determine a GPS Position</li> <li>(x) Determination of the Availability of RAIM/FDE</li> <li>(xi) Loading of Initial Waypoints</li> <li>(xii) Flight Plan Check</li> <li>(xiii) Leaving the Ramp</li> </ul> </li> <li>(c) In-Flight Procedures <ul style="list-style-type: none"> <li>(i) Enroute to Oceanic Entry</li> <li>(ii) ATC Oceanic Clearance and Subsequent Re-clearances</li> <li>(iii) Approaching the Ocean</li> <li>(iv) Entering the NAT HLA and reaching an Oceanic Waypoint</li> <li>(v) Routine Monitoring</li> <li>(vi) Approaching Landfall</li> </ul> </li> <li>(d) Special In-Flight Procedures</li> </ul>
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	<ul style="list-style-type: none"> <li>(i) CPDLC Route Clearance Uplinks</li> <li>(ii) Strategic Lateral Offset Procedures (SLOP)</li> <li>(iii) Monitoring during Distraction from Routine</li> <li>(iv) Avoiding Confusion between Magnetic and True Track Reference</li> <li>(v) Navigation in the Area of Compass Unreliability</li> <li>(vi) Deliberate Deviation from Track</li> </ul> <p>(e) Special procedures for in-flight contingencies</p> <ul style="list-style-type: none"> <li>(i) General procedures</li> <li>(ii) Actions to be taken once offset from track</li> <li>(iii) Weather deviation procedures</li> <li>(iv) Wake turbulence</li> <li>(v) ACAS and TCAS alerts and warnings</li> </ul> <p><b>Note:</b> Although all possible contingencies cannot be covered, the procedures described in ICAO Doc 007 provides for more frequent cases.</p>
<p><b>1.4 Ground and flight training (initial and recurrent)</b></p>	
<p>1.4.1 The operator must provide ground training for flight crew members, dispatchers, flight followers and maintenance personnel in NAT HLA operations and concepts as they apply to the responsibilities of these personnel.</p> <ul style="list-style-type: none"> <li>(a) Flight Crew Members: all pilots who will be operating in the NAT HLA;</li> <li>(b) Operational Control Personnel: all dispatchers and flight followers involved in the planning and operational control of flights intended to operate in the NAT HLA; and</li> <li>(c) Maintenance Personnel: involved in the routine or detailed checks with respect to NAT HLA operations.</li> </ul>	<ul style="list-style-type: none"> <li>(1) The training must provide sufficient detail on the aircraft's navigation and flight control systems to enable the flight crew members to identify failures affecting the aircraft's NAT HLA capability and the appropriate abnormal, emergency and contingency procedures.</li> <li>(2) Training must include both knowledge and skill assessments of the flight crew members, dispatchers and flight followers.</li> <li>(3) The operator must include training on NAT HLA procedures and required equipment and navigation specifications. These requirements and procedures must be included in the company operations manual and training manuals (as applicable). This material must cover all aspects of the operator's NAT HLA operations including the content of the Special Authorization/Specific Approval. An individual must have completed the appropriate ground and/or flight training programs, as applicable.</li> </ul>



	<p>(4) The flight training syllabus must include training and qualification content representative of NAT HLA operations the operator conducts during line-oriented flying activities.</p> <p>(5) Operators must address initial flight crew member NAT HLA training and checking during initial, transition, upgrade, recurrent, differences, or stand-alone training and checking programs. The qualification standards should assess each flight crew member's ability to properly understand NAT HLA procedures. The operator must also conduct a recurrent qualification program to ensure their flight crew members maintain appropriate NAT HLA knowledge and skills.</p> <p>(6) The ground training syllabus must address the following subjects in an approved NAT HLA training program during the initial introduction of an operator's personnel to NAT HLA operations:</p> <p>(a) General Knowledge:</p> <ul style="list-style-type: none"> <li>(i) The definition of NAT HLA;</li> <li>(ii) RNAV and RNP operations;</li> <li>(iii) The importance of specific equipment during NAT HLA operations;</li> <li>(iv) The requirement for GNSS for all NAT HLA operations;</li> <li>(v) The NAT HLA regulatory requirements (APPENDIX A of the AC) and procedures including any restriction associated with Special Authorization/Specific Approval (e.g., Blue Spruce Route).</li> </ul> <p>(b) Air Traffic Control (ATC) and Flight Planning:</p> <ul style="list-style-type: none"> <li>(i) ATC filing procedures i.e., prefixes and suffixes to be used when flight planning within the NAT HLA;</li> <li>(ii) Any ATC procedures applicable to NAT HLA operations;</li> <li>(iii) The use of GPS RAIM (or equivalent) forecasts and the effects of RAIM availability on NAT HLA procedures;</li> <li>(iv) The use of WAAS NOTAMS if the aircraft avionics are WAAS capable;</li> </ul>
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	<ul style="list-style-type: none"> <li>(v) The impact of a failure of any avionics or a known loss of ground- or space-based systems on the remainder of the flight plan;</li> <li>(vi) Phraseology applicable to NAT HLA operations;</li> <li>(vii) Waypoint Insertion/Verification;</li> <li>(viii) Strategic Lateral Offset Procedures;</li> <li>(ix) NAT HLA contingency procedures.</li> </ul> <p>(c) Equipment and Procedures:</p> <ul style="list-style-type: none"> <li>(i) The RNP terminology, symbology, operation, optional controls, and display features including any items unique to an operator’s implementation or systems;</li> <li>(ii) The description of failure alerts;</li> <li>(iii) The equipment used in NAT HLA operations and any limitations on the use of the equipment during those operations;</li> <li>(iv) airborne emergency procedures, including realignment, if applicable;</li> <li>(v) The normal and abnormal flight crew operating procedures, responses to failure alerts, and any equipment limitations, including related information on RNP modes of operation;</li> <li>(vi) The approved flight operations manual(s) must contain the contingency procedures for loss or degradation of NAT HLA capability;</li> <li>(vii) RVSM (see AC 700-039).</li> </ul> <p>(d) MEL Operating Provisions:</p> <ul style="list-style-type: none"> <li>(i) The MEL requirements supporting NAT HLA operations.</li> </ul>
<p>1.4.2 The operator’s approved initial and recurrent ground training shall include, but not limited to:</p> <ul style="list-style-type: none"> <li>(a) the conditions as stipulated in Appendix A of this AC and associated guidance; and</li> <li>(b) any other safety information respecting NAT HLA operations the operator deems appropriate.</li> </ul>	<p>Reserved</p>

<b>2.0 Aircraft Requirements</b>	
<b>2.1 Certification standards</b>	
<p>2.1.1 The aeroplane utilized to conduct operations in NAT HLA airspace must have an aircraft certification approval in accordance with aircraft certification/airworthiness requirements of:</p> <p>(a) FAA AC 90-105 (A) or later.</p>	<p>The design approval holder will demonstrate compliance, and the approval will be documented in manufacturer documentation. The design approval holder must contact TCCA Aircraft Certification to coordinate a demonstration of compliance.</p> <p>(1) In addition to the specific criteria below, the aircraft must comply with:</p> <p>(a) FAA AC 90-105 (A) or later.</p> <p>(2) An aircraft may meet the aircraft eligibility and equipment requirements for Special Authorization/Specific Approval by indicating in its Aircraft Flight Manual compliance with FAA AC 90-105(A) or later.</p>
<b>2.2 Continued airworthiness</b>	
<p>2.2.1 The operator of aircraft approved to conduct NAT HLA operations must ensure that the navigation system is maintained according to the design approval holder's instruction for continuing airworthiness (ICAs), including any software updates.</p>	<p>Aircraft Maintenance Engineers (AME) shall review log book entries by flight crews in regards to Inertial Navigation errors or equipment failures and ensure those defects are formally addressed as per company set out procedures.</p>
<b>2.3 Aircraft eligibility requirements</b>	
<p>2.3.1 The design approval holder must contact TCCA Aircraft Certification to coordinate a demonstration of compliance.</p>	<p>The design approval holder will demonstrate compliance, and the approval will be documented in manufacturer documentation.</p>
<p>2.3.2 Standard equipment for NAT HLA operations must include the following:</p> <p>(a) Controller Pilot Data Link (CPDLC) / Automatic Dependent Surveillance – Contract (ADS-C) Future Air Navigation System 1 or A (Fans 1/A) - (Respectively, Boeing and Airbus Proprietary Air-Ground ATC Data Link Communication Systems);</p> <p>(b) Long Range Navigation Systems (LRNS);</p> <p>(c) Transponder;</p>	<p>ICAO Doc 007 - North Atlantic Operations and Airspace Manual provides detailed guidance on the following minimum equipment for NAT HLA operations:</p> <p>(a) CPDLC-ADS-C (FANS 1-A):</p> <p>All aircraft intending to conduct flights in specified portions of the NAT High Level Airspace (HLA) shall be fitted with operative CPDLC equipment.</p>

<p>(d) Traffic Collision Avoidance System (TCAS) 7.1; and</p> <p>(e) High Frequency (HF).</p> <p><b>Note:</b> Please refer to ICAO Doc 007 for specific aircraft requirements.</p>	<p>Operators intending to conduct flights within specified portions of NAT HLA shall be authorized, where applicable, to use CPDLC.</p> <p>The Operator shall verify the equipment has been certified in accordance with the requirements specified in RTCA DO-258/EUROCAE ED-100 equivalent, capable of operating outside VHF data link coverage.</p> <p>FANS 1/A is required to operate in areas with Data Link Mandate (DLM) requirements within the NAT HLA. See ICAO Doc. 007 (North Atlantic Operations and Airspace Manual) and Doc. 10037 GOLD (Global Operational Data Link Document) for technical and safety requirements for FANS 1/A. Operators wishing to take advantage of reduced separation standards enabled by PBCS require operational approval IAW AC 700-041.</p> <p>(b) LRNS</p> <p>(c) Transponder</p> <p>(d) TCAS 7.1</p> <p>(e) HF</p> <p>Minimum equipment for Blue Spruce Route operations are as follows:</p> <ul style="list-style-type: none"> <li>• Single LRNS</li> <li>• ADS-B</li> <li>• Transponder</li> <li>• TCAS 7.1</li> <li>• HF</li> </ul> <p>For additional reference, please see Appendix E, NAT HLA – Frequently asked questions (FAQ) – “where can I operate”.</p>
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<p>2.3.3 The operator must establish procedures with respect to the following minimum navigation performance in order to conduct NAT HLA operations:</p> <ul style="list-style-type: none"> <li>(a) Required Navigation Performance (RNP) 4 or 10 – Special Authorization/Specific Approval;</li> <li>(b) Reduced Vertical Separation Minima (RVSM) – Special Authorization/Specific Approval.</li> </ul>	<p>RNP 4 or RNP 10 - Long Range Navigation System (LRNS):</p> <p><b>RNP 10:</b></p> <ul style="list-style-type: none"> <li>(a) Include at least two independent LRNS capable of meeting a position accuracy of +/- 10 NM or better for 95% of the flight time in RNP 10 airspace.</li> </ul> <p><b>RNP 4:</b></p> <ul style="list-style-type: none"> <li>(a) Include at least two independent LRNS capable of meeting a position accuracy of +/- 4 NM or better for 95% of the flight time in RNP 4 airspace.</li> </ul> <p>RVSM:</p> <ul style="list-style-type: none"> <li>(a) RVSM shall be applicable in that volume of airspace between FL290 and FL410 inclusive in all FIRs of the NAT region.</li> <li>(b) Since the NAT HLA is now designated as RVSM airspace at all levels, all NAT flight crews/operators must receive TCCA approval specifically for NAT RVSM operations and each aircraft intended to be flown in the NAT HLA must have TCCA RVSM approval.</li> <li>(c) Prior to entry into RVSM Airspace: <ul style="list-style-type: none"> <li>(i) The operator's procedures shall be provided for a comparison check between the indications of the two primary altimeters.</li> <li>(ii) The operator shall have procedures which require flight crews to address equipment failure prior to entering RVSM airspace.</li> <li>(iii) The operator's procedures shall require flight crews to verify, prior to entering RVSM airspace, that the equipment is fully serviceable.</li> <li>(iv) Requirements to obtain Reduced Vertical Separation Minimum (RVSM) Special Authorization/Specific Approval (see AC 700-039).</li> </ul> </li> </ul>
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<p>2.3.4 For unrestricted NAT HLA (use of PBCS tracks) operations, the operator must be approved with the following, in addition to the standard equipment listed in 2.3.2:</p> <ul style="list-style-type: none"><li>(a) Performance Based Communication and Surveillance – Specific Authorization/Specific Approval.</li></ul>	<p>PBCS:</p> <ul style="list-style-type: none"><li>(a) Performance Based Communication Surveillance (PBCS) SA is required to operate on the designated PBCS tracks, between FL350-FL390.</li><li>(b) Flights which are planned to follow an OTS track for its entire length (during the OTS periods) may plan any of the levels published for that track, keeping in mind PBCS and DLM requirements.</li><li>(c) PBCS tracks will be identified in Note 3 of the OTS message. Operators planning to operate in the altitude band FL350-FL390 on PBCS tracks are subject to equipage and authorization requirements as outlined in NAT OPS Bulletin, “Implementation of Performance Based Separation Minima”.</li></ul>
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## Appendix C — Compliance checklist

### C.1 Overview

- (1) The matrix below has been developed to assist operators in ensuring that they are in compliance with the conditions specified for the Special Authorization/Specific Approval (SA) NAT HLA (Appendix A).
- (2) This matrix also serves as an aid for Transport Canada Civil Aviation (TCCA) personnel for the purposes of certification and safety oversight.
- (3) This matrix provides:
  - (a) A reference to the specific condition for the SA;
  - (b) The assessment of compliance (to be made by the air operator/private operator/TCCA personnel); and
  - (c) An area to record the details of the air operator's/private operator's means of compliance. (This can include such things as the applicable references in the company operations manual, etc.).
- (4) This matrix can be reproduced locally.

Requirement		Compliance (Y/N)	Means of compliance (references / documentation)
<b>1 Operator requirements</b>	<b>Paragraph 1.1.1</b> Prerequisite - Special Authorization/Specific Approval <b>NAT HLA</b>		
	<b>Paragraph 1.2.1</b> COM Content		
	<b>Paragraph 1.3.1</b> Develop SOPs applicable to NAT HLA operations		
	<b>Paragraph 1.3.2</b> Amend MEL to comply with NAT HLA operations		

	<p><b>Paragraph 1.3.3</b></p> <p>Develop detailed NAT HLA procedures</p>		
	<p><b>Paragraph 1.4.1</b></p> <p>Ground Training: Flight crew members, dispatchers, flight followers and maintenance personnel</p>		
	<p><b>Paragraph 1.4.2</b></p> <p>Initial and Recurrent programs</p>		
<p><b>2. Aircraft requirements</b></p>	<p><b>Paragraph 2.1.1</b></p> <p>Certification Standards – Certification approval</p>		
	<p><b>Paragraph 2.2.1</b></p> <p>Continued Airworthiness - Navigation system</p>		
	<p><b>Paragraph 2.3.1</b></p> <p>Aircraft Eligibility - Manufacturer documentation</p>		
	<p><b>Paragraph 2.3.2</b></p> <p>Aircraft Eligibility - Minimum Equipment</p>		



	<b>Paragraph 2.3.3</b> Aircraft Eligibility – Procedures for RNP 4 or 10 and RVSM		
	<b>Paragraph 2.3.4</b> Aircraft Eligibility – Performance Based Communication and Surveillance		

## Appendix D — Applicable regulations

### D.1 Overview

- (1) Some *Canadian Aviation Regulations (CARs)* and *Commercial Air Service Standards (CASS)* that are applicable to air operators and private operators conducting NAT HLA operations are listed below.

**Caution:** The regulations listed below are not necessarily complete and up to date; and will not necessarily be updated. Operators and pilots are responsible for compliance with all relevant provisions.

### D.2 CAR Part VI, Subpart 4 and Part VII, Subparts 4 and 5

Subject	Provisions in the CARs	Provisions in the CASS
<b>Contents of an Air Operator Certificate</b>	Subparagraphs 704.08(g)(i), 704.08(g)(xi), 705.08(g)(i) and 705.08(g)(xi)	Sections 724.08 and 725.08
<b>Company Operations Manual (COM)</b>	Sections 704.121 and 705.135	Sections 724.121 and 725.135
<b>Standard Operating Procedures (SOPs)</b>	Sections 704.124 and 705.138	Sections 724.124 and 725.138
<b>Flight Crew Member Qualifications</b>	Sections 704.108 and 705.106	Sections 724.108 and 725.106
<b>Training Program (Pilots)</b>	Sections 704.115 and 705.124 of the CARs	Sections 724.115 and 725.124 of the CASS
<b>Training and Qualification Records</b>	Sections 704.117 and 705.127	N/A
<b>Safety Management System</b>	Sections 107.01, 107.02, 107.03, 107.04, 604.183, 604.202, 604.203, 705.151, 705.152 and 705.153	N/A

## Appendix E — NAT HLA - Frequently asked questions (FAQ)

**Q1. Is the PBCS Special Authorization/Specific Approval a prerequisite for the NAT HLA SA?**

**A1.** The PBCS SA is **not** a prerequisite for the NAT HLA SA. PBCS (RSP 180 and RCP 240) is a requirement in order to benefit from the reduced separation minima tracks in the NAT HLA (PBCS tracks). The PBCS SA is only required to fly on those designated PBCS tracks, between FL 350-390. The PBCS tracks are published under “Note 3” on the NAT OTS message.

**Q2. Can I still use the regular NAT Organized Track System (OTS) if I don’t have the PBCS SA?**

**A2.** The unrestricted NAT HLA Special Authorization/Specific Approval authorizes an aircraft/operator to fly anywhere in the NAT HLA (FL285-FL420) including the OTS, except for the designated PBCS tracks. Please see the chart below for further clarification.

<b>Where can I operate in the NAT HLA?</b>					
<b>With CPDLC, ADS-C, PBCS</b>		<b>With CPDLC, ADS-C (No PBCS)</b>		<b>Without CPDLC, ADS-C</b>	
Where I can operate*	Where I cannot operate	Where I can operate*	Where I cannot operate	Where I can operate*	Where I cannot operate
Anywhere in the NAT HLA	No restrictions	Anywhere in the NAT HLA, except for --->	On designated PBCS tracks between FL350-FL390	Blue Spruce Routes (Non- DLM airspace) with ADS-B.**	In the NAT HLA (FL285 to FL420 inclusively)

\* Special Authorization/Specific Approval(s) required.

\*\* Please refer to Attachment 8 North Atlantic ATS Surveillance Coverage Charts and 10 Checklist for dispatchers of ICAO’s Doc 007 North Atlantic Operations and Airspace Manual - which discusses the mandatory use of ADS-B Carriage Aircraft not equipped with FANS 1/A (or equivalent) systems will be allowed to operate within this area at DLM designated flight levels, provided the aircraft is suitably equipped (transponder/ADS-B extended squitter transmitter).