Australian Government
Civil Aviation Safety Authority

PRINCIPLE

(OPS.07) North Atlantic high level airspace (NAT HLA)

August 2024

Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and their continuing connection to land, water and community, and pays respect to elders past, present and emerging.

Inside front cover artwork: James Baban.

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Acronyms and abbreviations

Table 1.   List of acronyms and abbreviations

Acronym/abbreviation	Description
ACAS II	airborne collision avoidance system II
ADS-B	automatic dependant surveillance - broadcast
ADS-C	automatic dependant surveillance - contract
AMM	aircraft maintenance manual
AMP	aircraft maintenance program
AOC	air operator's certificate
ATC	air traffic control
ATS	air traffic services
AWI	airworthiness inspector
CAME	continuing airworthiness management exposition
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
CPDLC	controller-pilot datalink communication
CMM	component maintenance manual
CSP	communication service provider
ELA	electronic load analysis
FANS	future air navigation system
FIR	flight information region
FOI	flying operations inspector
HLA	high level airspace
MNT	mach number technique
MEL	minimum equipment list
MRBR	maintenance review board report
MPD	maintenance planning document
NAT	North Atlantic

Acronym/abbreviation	Description
OAC	Oceanic Area Control Centre
OCA	Oceanic Control Area
OEM	original equipment manufacturer
OPS SPEC	operations specification
PBCS	performance-based communications and surveillance
PBN	performance-based navigation
PSR	primary surveillance radar
RCL	radio communication link
RCP	required communication performance
RNP	required navigation performance
RSP	required surveillance performance
RVSM	reduced vertical separation minimum
SATCOM	satellite communications
SELCAL	Select call
SB	service bulletins
SOM	system of maintenance
SRM	structural repair manual
SSR	secondary surveillance radar
STC	supplemental type certificate
TC	type certificate
TCAS II	traffic (alert and) collision avoidance system II
WDM	wiring diagram manual

Definitions

Table 2.   List of definitions

Term	Definition
ATS surveillance service	Term used to indicate a service provided directly by means of an air traffic services (ATS) surveillance system.

Term	Definition
ATS surveillance system	Generic term meaning variously, automatic dependant surveillance - broadcast (ADS-B), primary surveillance radar (PSR), secondary surveillance radar (SSR) or any comparable ground-based system that enables the identification of aircraft.
Cost Index (ECON)	Operators can flight plan Cost Index (ECON) provided that the planned true Mach number for any portion of the flight within the NAT is specified in Item 15 of the ICAO FPL. Flight crews can fly Cost Index (ECON). ATC will assign a fixed Mach number if required due to traffic.
Current Flight Plan	The flight plan, including changes, if any, brought about by subsequent clearances. From a flight crew perspective this means what is loaded in the FMS.
North Atlantic operations 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.
Radio communication link	Voice, or data link message via ACARS, used to provide ETA at OEP, requested flight level, and Mach.
Oceanic entry point	The Oceanic entry point is generally a 'named' waypoint, on or close to the flight information region (FIR) boundary where the aircraft enters an oceanic control area. Note: For aircraft entering the Reykjavik OCA from Edmonton, at or north of 82N, the Oceanic Entry Point can be a LAT/LONG position on the boundary
Oceanic exit 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. Note: Routes involving more than one OCA may result in multiple Oceanic Entry and Exit Points.

Reference to regulations

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this Principle are references to the *Civil Aviation Safety Regulations 1998* (CASR).

1. Assessment scope

Inspectors will use this protocol suite to assess an operator's readiness to hold an approval under regulation 91.045 for operations in the North Atlantic high level airspace (NAT HLA). The scope of the assessment is conducted in accordance with the requirements mention in NAT Doc 007—North Atlantic Operations and Airspace Manual.

1.1 Assessment instructions

NAT Doc 007—North Atlantic Operations and Airspace Manual forms the principle for the assessment of an application to operate in the NAT HLA. Current NAT HLA documentation is available on the public ICAO EUR and NAT Documents website: ICAO EUR and NAT Office - Documents.

Where indicated in the (OPS.07) worksheet, inspectors may also need to refer to ICAO Doc 9869—Performance–based Communication and Surveillance Manual.

To gain access to the ICAO documents, you will need to request an individual username and password for ICAO's secure portal. Use the following link for guidance on how to setup your secure account: How to access secure ICAO documents and downloads (sharepoint.com).

Once you have set up your username and password, use the following link to log in: http://portal.icao.int.

1.1.1 Assessment worksheet user instructions

This principle provides guidance to the inspector when using the associated Worksheet (OPS.07) North Atlantic high level airspace (NAT HLA). The worksheet provides inspectors with a regulation-based tool for recording the outcomes of the assessment. It is set out as follows:

- user instructions
- assessment worksheets
- assessment summary
- approval data sheet.

2.   Flight operations assessment

2.1   Aircraft equipment and eligibility

2.1.1   Reduced vertical separation minimum (RVSM)

Normally an aircraft will require an approval to operate in RVSM airspace. If the operator requires approval, use Protocol suite (OPS.04) Navigation authorisations. Under some circumstances, CASA may issue an approval to operate in NAT HLA without an RVSM approval. In this case, the approval may be issued with conditions.

2.1.2   RNP10 and RNP4

CASA no longer issues an approval to operate in RNP10 or RNP4 airspace. However, the inspector must ensure the aircraft is capable and the operator's exposition provides instructions for those operations. Use Protocol suite (OPS.04) Navigation authorisations for the assessment.

2.1.3   Electronic flight bag (EFB)

Part 2 of CASA exemption *EX82/21 – Part 119 of CASR– Supplementary Exemptions and Directions Instrument 2021* contains a direction that an Australian air transport operator must not use an EFB in an operation for the first time unless CASA, in writing, has approved the use of the EFB by the operator and the aircraft's flight crew. The approval to use an EFB will be documented on the operator's operations specification (OPS SPEC).

2.1.4   Polar operations

A Part 121 operator requires an approval under regulation 121.010 to conduct operations in the polar region. Refer to Protocol suite (OPS.121) Australian air transport operations – larger aeroplanes for assessment.

A Part 135 operator does not require an approval. However, the inspector should ensure the operator has appropriate procedures to support operations in the polar region. Refer to Protocol suite (OPS.135) Australian air transport operations – smaller aeroplanes for the assessment.

2.1.5   Communication service provider (CSP)

The operator should provide evidence that they have established a contract with a CSP to support operations to required communication performance (RCP) 240 and required surveillance performance (RSP) 180 requirements. Refer to ICAO Doc 9869—Performance–based Communication and Surveillance Manual for further information.

2.2   Exposition

NAT Doc 007 provides sample checklists and forms for matters that should be addressed in the exposition.

2.2.1   Guidance for operational control personnel

Operational control personnel, commonly known as 'dispatchers' or 'flight dispatchers', can be either employed directly by the operator or contracted by the operator via a third-party to provide operational control for flights in NAT HLA. If employed directly by the operator, the inspector should confirm the exposition contains the guidance specified in NAT Doc 007. If the operator uses a third-party provider, the inspector should be satisfied that the provider has appropriate instructions to support NAT HLA operations. NAT Doc 007 provides sample checklists and forms for matters that should be addressed in the exposition

2.2.2   Flight crew training

The operator must ensure that flight crew have received both initial and recurrent training to support NAT HLA operations.

To be suitable, the training should include the following:

- regulatory approval requirements – RVSM, performance-based communications and surveillance (PBCS), ADS-B and controller-pilot datalink communication (CPDLC)

- the organised track system, routes and transition areas within, and adjacent to, NAT HLA

- pre-flight dispatch and MEL requirements, including time piece accuracy

- flight planning consideration and requirements

- en-route normal and non-normal procedures

- weather considerations

- communication and position reporting procedures

- communication and surveillance requirements, including:

  - transponder and traffic (alert and) collision avoidance system (TCAS) II requirement

  - ATS surveillance services in NAT HLA

  - data link procedures

  - RCP 240 procedures and route requirements

  - RSP 180 procedures and route requirements

- mach number technique (MNT)

- flight operations and navigation and procedures

- RVSM procedures in NAT HLA

- monitoring processes and procedures in NAT HLA

- procedures in the event of navigation system degradation or failure

- special procedures for in-flight contingencies

- prevention of height and track deviation

- flight below NAT HLA

- special arrangements for non-NAT HLA capable aircraft in the NAT HLA

- special arrangements for non RVSM capable aircraft in the NAT HLA

- North Atlantic - Regional Supplemental Procedures (ICAO Doc 7030).

2.2.3   Operational control personnel training

The operator must ensure that operational control personnel have received both initial and recurrent training to support NAT HLA operations.

Where operational control personnel, however named, are provided under contract by third-party, the operator should ensure they have been trained to support operations in NAT HLA.

The inspector should refer to the matters mentioned in 14 NAT Doc 007 Guidance for dispatchers for information on what should be included in the training.

3. Continuing airworthiness assessment

For this section, reference to the operator includes private operations under Part 91.

3.1 Air operator's certificate (AOC) holder

The inspector must confirm that the operator's processes and procedures for managing continuing airworthiness support operations in NAT HLA. The following documents will need to be assessed as compliant:

- scheduled air transport operators:
  - the Part 42 continuing airworthiness management exposition (CAME)
- non-scheduled air transport operators:
  - if the operator has elected to operator under Part 42 – the Part 42 CAME
  - otherwise the maintenance control manual.

3.2 Private operator

For private operations under Part 91, the inspector must confirm that the aircraft's system of maintenance (SOM) and minimum equipment list (MEL) ensure the aircraft meets the airworthiness requirements for flight into NAT HLA.

3.3 Performance monitoring

Whether the operator is required to have a reliability program or not, the operator must monitor the performance of aircraft systems required to support flight in NAT HLA. The operator must have a procedure to capture any aircraft system performance faults reported to them by external authorities. Where an operator does not have a reliability program, the maintenance program should include a reliability section for performance monitoring.

3.4 Maintenance program

The operator must demonstrate their ability to maintain the aircraft in an airworthy condition; specifically addressing maintenance procedures designed to maintain conformity and integrity of the applicable navigation equipment and systems.

The inspector should consider the following:

- The maintenance program or SOM must be derived from the instructions for continuing airworthiness for each applicable navigation equipment or system issued by the type certificate (TC) or supplemental type certificate (STC) holder:
  - this may include the aircraft maintenance manual (AMM), structural repair manual (SRM), wiring diagram manual (WDM), component maintenance manual (CMM), service bulletins (SB), maintenance review board report (MRBR), maintenance planning document (MPD) and other applicable documents
  - the applicant should supply applicable extracts or documents.
- The maintenance program must include practices and tasks to maintain the accuracy and integrity of the autopilot and automatic altitude control system.
- The aircraft may have a stand-alone reliability program that monitors the health of the navigation equipment fitted to the aircraft. If not required, the maintenance program must include a reliability program section for monitoring the applicable navigation equipment.

- The operator's configuration management procedures must ensure that all parts, including software, meet the standard specified in the current maintenance data.

- The operator must have processes in place to ensure the electronic load analysis (ELA) is maintained and continued compliance is assured; any changes in the electrical load must be incorporated into the ELA.

- The approved maintenance program (AMP) or the SOM must include provisions to ensure that the aircraft remains capable of operating in RVSM airspace. For example:

  – waviness checks within RVSM tolerances and following repair

  – existing maintenance practices for altitude alert, air traffic control (ATC) altitude reporting, altimetry systems and the automatic altitude control system maintain RVSM approval integrity

  – leak check after static system disturbance

  – pitot/static systems maintained in accordance with manufacturer's standards.

- The operator's maintenance procedures must ensure that the software in each system is maintained in a configuration that is compatible with other systems in the aircraft and have no significant operational differences between systems.

3.5 Software and database management

The database must be provided by a supplier with appropriate regulatory approval.

The operator must have a process to ensure that the aircraft software and databases are compliant with section 14.07 of the Part 91 Manual of Standards (software is to be treated like any aeronautical product). The processes must ensure that aircraft software is current within AIRAC cycles and that software versions are identical or, for dual installations, have no significant differences.

3.6 Minimum equipment list (MEL)

The MEL must include 'O' procedures to address the effect of equipment failures on the operator's ability to operate in NAT HLA. Continued operation into NAT HLA may be subject to route restrictions, depending on the unserviceability.

The inspector should ensure the MEL addresses the following systems in relation to NAT HLA:

- loss of RVSM capability
- loss of navigation capability
- loss of PBCS capability
- loss of performance-based navigation (PBN) capability
- loss of surveillance
- loss of communication capability (including SATCOM)
- loss of future air navigation system (FANS) capability
- airborne collision avoidance system (ACAS) II failure
- out-of-date software.

3.7 Pre-departure inspection

In addition to the normal pre-departure inspections, the original equipment manufacturer (OEM) or other approved Part 21 approval (including an STC) may prescribe an additional pre-departure inspection, prior to a flight in HAT HLA. Where this is the case, the exposition must include procedures to ensure the required inspection is completed.

3.8　Maintenance personnel training

The operator must ensure that maintenance personnel have received both initial and recurrent training to support NAT HLA operations.

To be suitable the training should include:

- NAT HLA regulations
- overview of NAT HLA operations and purpose
- NAT HLA required equipment
- NAT HLA MEL items
- NAT HLA pre-departure check: maintenance release
- RVSM
- SOM / AMP tasks related to NAT HLA and RVSM.

4. Revision history

Amendments/revisions for this principle are recorded below in order of the most recent first.

Table 3.   Revision history table

Version No.	Date	Parts / Sections	Details
1.1	August 2024	Terminology Definitions Section 1.1 Section 2.2	Addition of HLA, OAC, OCA and RCL Removal of CTA and NAT HLA Additions and updates to definitions Document references updated Added link to NAT Doc publications
1.0	October 2023	All	First issue