Regional Seminar on MMEL/MEL and Special Operations

[Airbus Amber]

Organized by ICAO Regional Office for Western and Central Africa (WACAF)

Dakar - Senegal - from 30 June to 5 July 2025

NATS HLA North Atlantic High Level Airspace / Former MNPS

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AIRBUS

Increase in traffic density in North Atlantic

Need to avoid COLLISION RISK in NAT
due to any LOSS of HORIZONTAL SEPARATION

⇒ **NAT HLA** requirements

1977 MNPS

Minimum Navigation Performance Specification

2016 ~~MNPS~~ ⇒ NAT HLA MNPS

High Level Airspace

NAT HLA - Applicability

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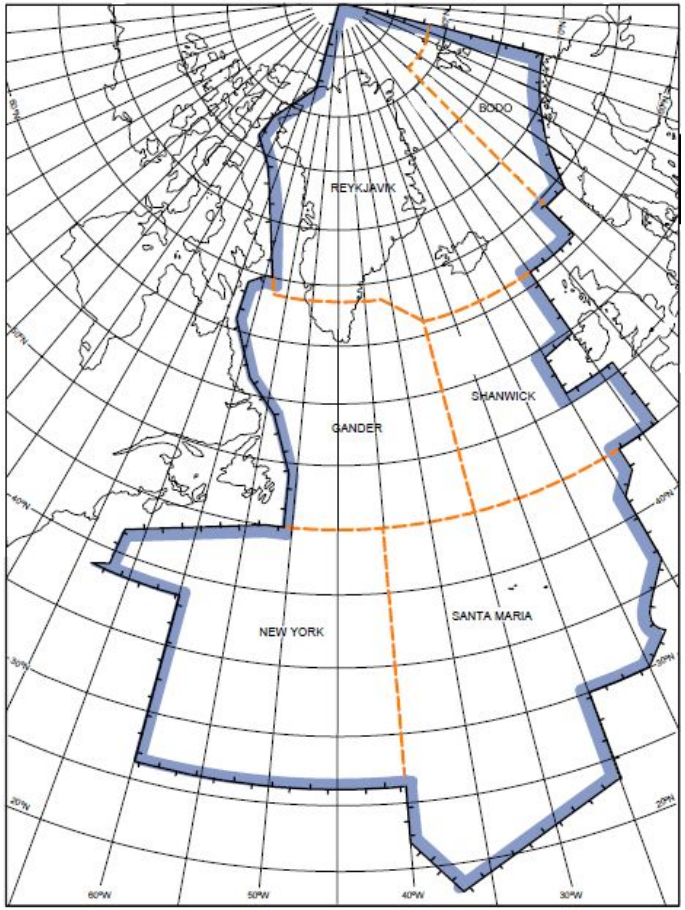
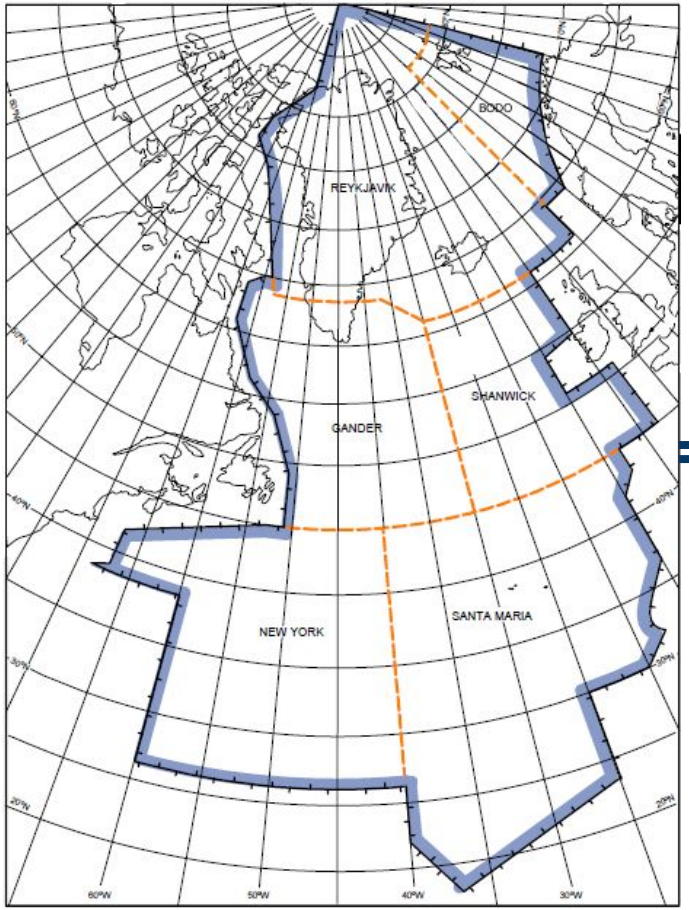


North Atlantic

From To

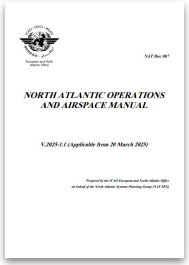
[FL285 - FL420]



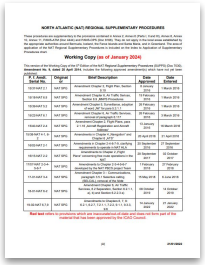
Since 4 February 2016

To operate NAT above FL280

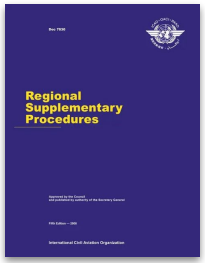
⇒ **NAT HLA approval required***



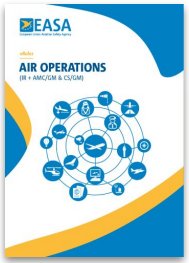
NAT Doc 007



ICAO NAT SUPP



ICAO doc 7030



EASA AIR.OPS (SPA.MNPS)

Requirements based on:

- Navigation systems

  Navigation displays/indicators/controls
- Flight crew training

- Ops procedures

RNAV 10

⇒ **all AIRBUS A/C**

except A300/A310

RNP 4

⇒ **All AIRBUS A/C with GNSS+FMS**

Minimum aircraft configuration:

- **RNP 4 or RNAV 10** capability
- **RNP 2** on some level
- **RVSM** capability
- **Two LRNS** (Long Range Navigation System)

NAT HLA – Ops approval - Aircraft configuration

No NAT HLA global compliance but compliance with each required operations:

- RNAV 10
- RNP 4
- RNP 2
- RVSM

Compliance indicated in AFM for each operation = Proof of A/C capability

NAT HLA – Ops approval - Aircraft capability ⇒ AFM statement

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AFM LIMITATIONS/22-AFS/FMS/AIRWORTHINESS STANDARDS COMPLIANCE

EASA APPROVED

AIRWORTHINESS STANDARDS COMPLIANCE

The FMS has been demonstrated to comply with the airworthiness part of:

- FAA Order 8400.12C for RNP 10 in oceanic and remote area (RNAV 10). RNP 10 oceanic/remote area operations are approved:
  - With NAV PRIMARY
  - Without NAV PRIMARY (GPS deselected or inoperative), provided time limitations in IRS only navigation, acceptable to the operational authorities, are established.
- EASA AMC 20–4 (or JAA TGL 2 REV 1) for Basic RNAV (RNAV 5)
- JAA TGL 10 for Precision RNAV (RNAV 1 or RNAV 2) (compliance with paragraph 8.2 has not been demonstrated)
- FAA AC 90–100A for terminal and en route RNAV operations (RNAV 1 or RNAV 2)
- FAA Order 8400.33 for RNP 4 in oceanic and remote area
- FAA AC 90-105 for:
  - RNP 1 operations in Terminal Area with or without RF leg

NAT HLA – Ops approval - Aircraft capability ⇒ AFM statement

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AFM LIMITATIONS/34-NAV/RVSM

Approved

REDUCED VERTICAL SEPARATION MINIMUM (RVSM)

Aircraft have been certified capable to perform RVSM operations according to CS-ACNS subpart E section 2 and FAA 91-RVSM requirements.

Note : Compliance with the standards noted above does not constitute an operational approval. Such authorization must be obtained by the operator from the appropriate authorities.

--- END ---

RNAV 10 Procedures

FCOM/PRO/SPO/PBN/RNAV 10

RNAV 10/RNP 10

GENERAL

RNAV 10 operations correspond to RNP 10 operations.

In RNAV 10 airspace, the aircraft is expected to fly for a long period of time outside radio navaid coverage.

Required equipment and procedures for RNAV 10, described in this section, cover the navigation requirements of the Minimum Navigation Performance Specification (MNPS) operations.

REQUIRED RNAV 10 EQUIPMENT

The following is a list of the minimum navigation equipment that is required to enter RNAV 10 airspace:

- Two FMS
- Two IRS
- One GPS if the flight time outside radio navaid coverage is longer than either :
  - 6.2 h from the time of IRS ground alignment, or
  - 5.7 h from the time of the last radio position update.

PROCEDURE

MANAGEMENT OF DEGRADED NAVIGATION

- If one of the following messages appears, the flight crew can continue navigation with the side that provides the best position:
  - NAV PRIMARY LOST on only one ND/MFD
  - NAV ACCURACY DOWNGRADED on only one ND/MFD.
- If NAV PRIMARY LOST appears on both NDs/MFDs, RNAV 10 operations can be continued:
  - if radio navaids update is available, there is no time restriction
  - if radio navaids update is not available, then RNAV 10 operations can be continued for 5.7 h from the time of the last position.

  Note : As per regulation, after 5.7 h , the navigation accuracy shall be considered as downgraded regardless of the current navigation accuracy that is displayed on the FMS POSITION/MONITOR page.
- If the NAV GNSS/ACFT POS DISAGREE ECAM alert appears, the flight crew should check the position data using the FMS POSITION/MONITOR page. This action permits to identify the side that provides the best position. The flight crew can then continue navigation with the side that provides the best position.
- If NAV ACCURACY DOWNGRADED appears on both NDs/MFDs, all the following is applicable:

RNP 4 Procedures

FCOM/PRO/SPO/PBN/RNP 4

RNP 4

GENERAL

In this airspace, the aircraft is expected to fly for a long period of time outside radio navaid coverage.

REQUIRED RNP 4 EQUIPMENT

The following is a list of the minimum navigation equipment that is required to enter RNP 4 airspace:

- Two FMS
- One GPS
- Two IRS.

PROCEDURE

MANAGEMENT OF DEGRADED NAVIGATION

- If one of the following messages appears, the flight crew can continue navigation with the side that provides the best position:
  - NAV PRIMARY LOST on only one ND/MFD
  - NAV ACCURACY DOWNGRADED on only one ND/MFD.
- If one of the following messages appears, the flight crew should check the position data using the FMS POSITION/MONITOR page:
  - NAV PRIMARY LOST on both NDs/MFDs
  - NAV GNSS/ACFT POS DISAGREE on the ECAM.

  This action permits to identify the side that provides the best position. The flight crew can then continue navigation with the side that provides the best position.
- If NAV ACCURACY DOWNGRADED appears on both NDs/MFDs, all the following is applicable:
  - As per design, the FMS uses the default RNP value. This default value (2 NM in cruise, 1 NM in terminal area) is more restrictive than airspace required navigation performance.
  - The flight crew can modify, on the FMS, the RNP default value and manually select a specific navigation accuracy in accordance with airspace requirement. When the aircraft leaves the airspace, the flight crew should set back the default value.
    - If NAV ACCURACY DOWNGRADED remains displayed, the flight crew should inform the ATC that RNP 4 capability is lost.

--- END ---

RVSM Procedures

FCOM/PRO/SPO/RVSM

RVSM REQUIREMENTS

A350 aircraft systems are designed to comply with the design criteria of the JAA Temporary Guidance Leaflet No. 6 (JAA TGL 6 - EASA Regulations), and the FAA Guidance Material for RVSM operations No. 91 - RVSM.

The AFM provides the statement of RVSM capability.

In addition to the RVSM capability statement provided in the AFM, Operators must obtain operational approval from their national airworthiness authorities, in order to operate within the RVSM airspace.

The above-mentioned EASA and FAA documents also indicate the requirements for obtaining operational approval.

The RVSM regulation requires that the following equipment or functions be operative:

- Two ADRs (for altitude indication)
- One transponder

  For associated MEL dispatch conditions, Refer to MMEL/MI-34-71 Transponder.
- One autopilot function

  For associated MEL dispatch conditions:
  - Refer to MMEL/MI-22-10 AP
  - Refer to MMEL/MI-22-10 Sidesticks and Rudder Pedal Locking Devices in AP Mode.
- Two PFDs (for altitude indication)
- One AFS CP channel or AFS CP backup (for the altitude target selection and the OP CLB or OP DES mode engagement)
- One FWS (for the altitude alert function).

MAXIMUM DIFFERENCES BETWEEN ALTITUDE INDICATIONS

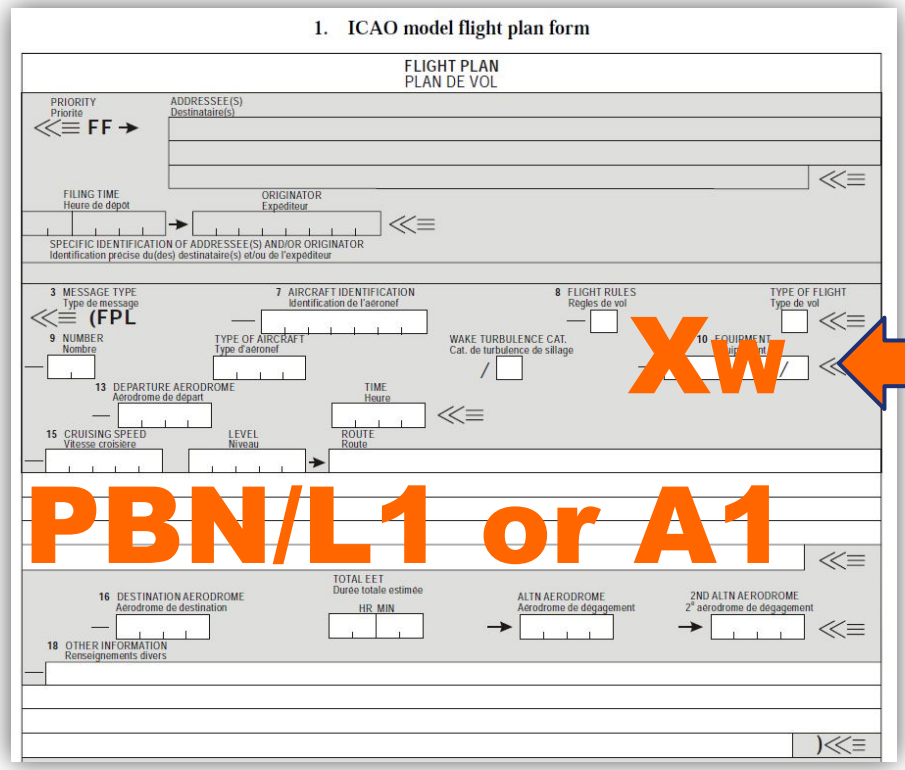
		Comparison of Altitude Indications (ft)	
Flight Level	Speed or Mach Number	Difference between ADRs (on the PFDs)	Difference between ISIS and ADRs (on the PFDs)
FL 50	250 kt	50	100
FL 100	250 kt	50	100
FL 200	320 kt	100	250
FL 290	M 0.85	150	400
FL 350	M 0.85	150	400
[illegible]	M 0.85	[illegible]	[illegible]

Flight Planning

Item 10

Item 18

- Aircraft capability (see AIP)



AIP (Aeronautical information Publication)

Thank you

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