



NAT OPS BULLETIN

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Subject: **Implementation of Performance Based Separation Minima**

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The purpose of this North Atlantic Operations Bulletin (NAT OPS) Bulletin is to provide guidance to North Atlantic (NAT) operators on material to be included in pilot and dispatcher training programs and operations manuals to prepare them for operations in the North Atlantic under performance based separation minima.

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NAT OPERATIONS BULLETIN – PERFORMANCE BASED SEPARATION MINIMA

1. Purpose of Bulletin – Performance based separation minima. The purpose of this bulletin is to provide guidance to North Atlantic (NAT) operators on material to be included in pilot and dispatcher training programs and operations manuals to prepare them for operations in the NAT Region under performance based separation minima.

1.1 Any necessary updates will be distributed through industry organizations and posted on the ICAO EUR/NAT Website.

1.2 The following is an explanation of the terms “should”, “must” and “shall” as used in this bulletin.

- a) “Should” is used to indicate a recommended practice or policy that is considered as desirable for the safety of operations.
- b) “Shall” and “must” are used to indicate a practice or policy that is considered necessary for the safety of operations.

2. Overview - Performance based separation minima. Performance based separation minima of 42.6km (23 NM) lateral, 5 minutes and 55.5km (30NM) / 93km (50 NM) longitudinal predicated on PBCS and PBN, in accordance with ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) are planned for implementation in the ICAO NAT Region commencing 29 March 2018. Appropriate AIP/AIC publications will be issued by States in due time prior to commencement.

Application

- a) The 55.5km (30NM) and 93km (50NM) longitudinal separation minima are between eligible aircraft pairs within the New York East and Santa Maria OCAs as published in their respective AIP.
- b) The 5 minute longitudinal separation minimum is applied between eligible aircraft pairs within the Gander, Reykjavik, Santa Maria and Shanwick OCAs as published in their respective AIPs.
- c) The 42.6km (23 NM) lateral separation minimum is applied between eligible aircraft pairs within the Gander, Reykjavik, Santa Maria, New York East (30 NM lateral applied) and Shanwick OCAs as published in their respective AIPs.

Note NAT Doc008 ‘Application of Separation Minima’ Appendix A contains details of the separation minima applied in the North Atlantic Region.

Organized Track System (OTS)

- a) The 42.6km (23 NM) lateral separation minimum is implemented by applying 42.6km (23 NM) lateral spacing through whole and half degrees of latitude between NAT Organized Track System (OTS) tracks between flight level (FL) 350-390 (inclusive), except when the OTS occurs in the New York East OCA.
- b) OTS tracks spaced using 42.6km (23 NM) lateral separation minima at any point will be designated as *PBCS tracks* and will be uniquely identified in Remark 3 of the Track Message. See Section 4 (Flight Planning Provisions).
- c) A *PBCS track* will either be:
 - A whole degree *PBCS track* or
 - A half degree *PBCS track* (e.g. 54 degrees-30 minutes NORTH latitude 20 degrees WEST longitude).

Note there will be no combination of whole and half degrees of latitude within any single OTS track.

- d) A maximum of three PBCS tracks will be published until 28 March 2019 or the filing of PBCS designators reaches the 90% mark, whichever occurs first, This transition period will account for the possibility of low initial PBCS filing rates, and is intended to mitigate both the impact on controller workload and for operators awaiting State authorizations for RCP 240 and RSP 180.

3. Operator/Aircraft Eligibility. Operators should consult with the State authority responsible for their operation to obtain appropriate PBCS and PBN authorisations in order to be eligible for the performance based separation minima.

3.1 Eligibility for the provision of performance based minima is based on the following:

	Required Navigation Performance (RNP)		FANS 1/A CPDLC ADS-C	RCP240	RSP180
	10/4	4			
93km (50NM) longitudinal separation	✓		✓	✓	✓
55.5km (30NM) longitudinal separation		✓	✓	✓	✓
5 minute longitudinal separation	✓		✓	✓	✓
42.6km (23 NM) lateral separation		✓	✓	✓	✓

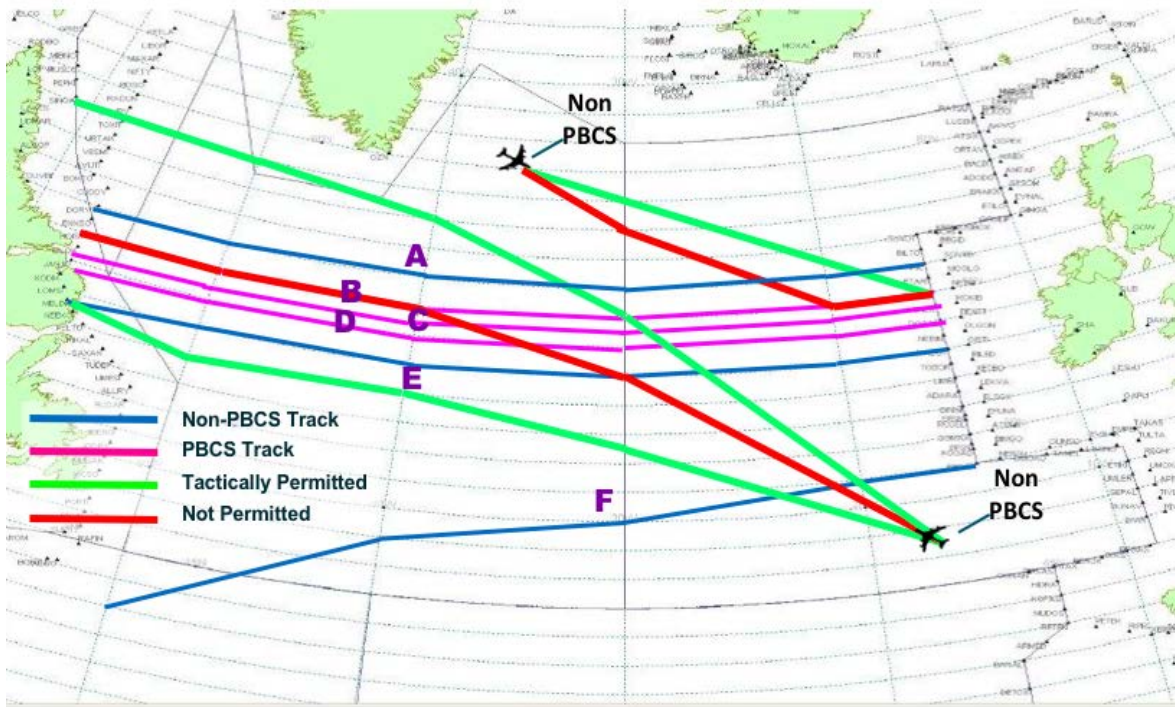
3.2 Operators are eligible to flight plan to operate on published *PBCS tracks* provided the flights are:

- Authorised for Required Navigation Performance 4 (RNP 4);
- Fitted with and operating FANS 1/A CPDLC and ADS-C ; and
- Authorized for RCP 240 and RSP 180.

3.3 Operators / aircraft not eligible for performance based separation may be permitted to;

- Infringe PBCS tracks at FL350 - FL390 (inclusive) at only one point (including Oceanic Entry / Exit Point) i.e. cross but not join an *OTS PBCS track*, and;
- Climb or descend through levels FL350 – FL390 on a *PBCS track* provided the climb or descent is continuous.

Note such clearances will only be permitted on a tactical basis.



3.4 In accordance with ICAO Annex 6, for operations where communication equipment is required to meet an RCP and RSP specification for PBCS, an aeroplane shall:

- be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP and RSP specification(s);
- have information relevant to the aeroplane RCP and RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Registry; and
- have information relevant to the aeroplane RCP and RSP specification capabilities included in the Minimum Equipment List (MEL).

3.5 The State of the Operator shall, for operations where an RCP and RSP specification for PBCS has been prescribed, ensure that the operator has established and documented:

- normal and abnormal procedures, including contingency procedures;
- flight crew qualification and proficiency requirements, in accordance with appropriate RCP / RSP specifications;
- a training programme for relevant personnel consistent with the intended operations; and
- appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RCP and RSP specifications.

3.6 The State of the Operator shall also ensure that, in respect of the foregoing operations, adequate provisions exist for:

- receiving the reports of observed communication performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and
- taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RCP and RSP specification(s).

4. Flight Planning Provisions

4.1 Operators must file the correct ICAO Flight Plan annotations in Items 10 and 18 to indicate that required equipment and authorizations are available for the flight.

- a) Item 10a (Radio communication, navigation and approach aid equipment and capabilities)
 - Insert “J5” to indicate FANS 1/A Inmarsat CPDLC SATCOM and/or “J7” to indicate FANS 1/A CPDLC Iridium SATCOM data link equipage and operation;
 - Insert “P2” to indicate RCP 240 authorisation;
 - Insert “R” to indicate that aircraft navigation system equipage and operation meet Performance Based Navigation (PBN) levels specified in Item 18. See 4.1 c) below on the related Item 18 entry for RNP 4.
- b) Item 10b (Surveillance equipment and capabilities)
 - Insert “D1” to indicate FANS 1/A ADS-C equipage and operation.
- c) Item 18 (Other information)
 - Insert the characters “PBN/” followed by “L1” to indicate RNP 4 authorization.
 - Insert the characters “SUR/” followed by “RSP180” with no spaces to indicate RSP 180 authorisation.

4.2 Only those operators/aircraft eligible for 42.6km (23 NM) operations are allowed to operate on *PBCS tracks* between FL 350-390 (inclusive). All *PBCS tracks* and flight levels are uniquely identified in “Remark 3” of the OTS Track Message as shown below:

Westbound NAT Track Message Example: PBCS Tracks

Note: See “Remark 3”. Tracks B, C and D are designated as *PBCS tracks* between FL 350-390.

```
FF CYZZWNAT
102151 EGGXZOZX
(NAT-1/3 TRACKS FLS 310/390 INCLUSIVE
MAR 30/1130Z TO MAR30 1900Z
PART ONE OF THREE PARTS-
A PIKIL 57/20 58/30 59/40 58/50 DORYY
EAST LVLS NIL
WEST LVLS 310 320 330 340 350 360 370 380 390
EUR RTS WEST NIL
NAR NIL-
B ETARI 56/20 57/30 58/40 57/50 ENNSO
EAST LVLS NIL
WEST LVLS 310 320 330 340 350 360 370 380 390
EUR RTS WEST NIL
NAR NIL-
C RESNO 5530/20 5630/30 5730/40 5630/50 HOIST
EAST LVLS NIL
WEST LVLS 350 360 370 380 390
EUR RTS WEST NIL
NAR NIL-
END OF PART ONE OF THREE PARTS)
FF CYZZWNAT
102151 EGGXZOZX
(NAT-2/3 TRACKS FLS 310/390 INCLUSIVE
FEB 11/1130Z TO FEB 11/1900Z
PART TWO OF THREE PARTS-
D VENER 55/20 56/30 57/40 56/50 IRLOK
EAST LVLS NIL
WEST LVLS 310 320 330 340 350 360 370 380 390
EUR RTS WEST NIL
NAR NIL-
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E DOGAL 54/20 55/30 56/40 55/50 JANJO
EAST LVLS NIL
WEST LVLS 310 320 330 340 350 360 370 380 390
EUR RTS WEST NIL
NAR NIL-
END OF PART TWO OF THREE PARTS)
FF CYZZWNAT
102152 EGGXZOZX
(NAT-3/3 TRACKS FLS 310/390 INCLUSIVE
MAR 30/1130Z TO MAR 30/1900Z
PART THREE OF THREE PARTS-
REMARKS.
1. TMI IS 089 AND OPERATORS ARE REMINDED TO
INCLUDE THE
TMI NUMBER AS PART OF THE OCEANIC CLEARANCE
READ BACK.
2. OPERATORS ARE REMINDED THAT ADS-C AND
CPDLC IS MANDATED IN NAT AIRSPACE FL350 TO
FL390.
3. PBCS OTS LEVELS 350-390. PBCS TRACKS AS
FOLLOWS
TRACK B
TRACK C
TRACK D
END OF PBCS OTS...
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5. PBCS monitoring data

5.1 Routine PBCS monitoring data can be accessed on DLMA Web portal or requested from the contact points as indicated in the AIPs:

5.2 This information can be used by operators and States in support of initial and ongoing PBCS authorisations.

5.3 PBCS monitoring data demonstrating non-conformity will be communicated in the initial period directly by the NAT ANSPs. The NAT Region is coordinating with the RMAs to implement a centralised mechanism for communicating non-conformity information. This Bulletin will be updated when the centralised system is implemented.

6. Websites

6.1 The ICAO EUR/NAT Office Website is at: www.icao.int/eurnat. Click on [EUR & NAT Documents](#) >> [NAT Documents](#) to obtain NAT Operations and NAT Region Update Bulletins and related project planning documents.

7. Contacts

7.1 The following individuals may be contacted for information or to provide feedback on PBCS operations:

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