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APPLICATION OF SEPARATION MINIMA

NORTH ATLANTIC REGION

NAT ASM

1st Edition – Amendment 14 – July 2024

Prepared by the ICAO European and North Atlantic Office

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Foreword

The Application of Separation Minima – North Atlantic Region (NAT Doc 008) is published on behalf of the North Atlantic Systems Planning Group (NAT SPG) and represents the separation methods and minima that will be applied to aircraft transiting the ICAO North Atlantic (NAT) Region based on agreement by the ICAO NAT Region Air Traffic Service providers. It contains definitions, general rules pertaining to the application of separation minima, separation minima in the vertical, lateral, and longitudinal planes applicable to aircraft operating in the ICAO NAT Region, and airspace reservations. It mainly applies to the separation of aircraft that are communicating via a radio station or via CPDLC. Separation standards as specified in the PANS-ATM may also be applied when aircraft are in Direct Controller Pilot VHF voice Communication.

This document is specifically designed for, and provides guidance to, operational air traffic control personnel. It serves as a written and pictorial interpretation of separation rules and their application, its overall objective being a common application of separation minima throughout the ICAO North Atlantic Region.

Other ICAO documentation, such as the NAT Regional Supplementary Procedures (Doc 7030) and Procedures for Air Navigation Services-Air Traffic Management (Doc 4444) should be read in conjunction with this document.

More information can be obtained electronically on the ICAO EUR/NAT website:

www.icao.int/EURNAT/ [under “EUR & NAT Documents” – “*NAT Documents*”]

Record of Amendments to NAT Doc 008 – NAT ASM

Amendments to the NAT ASM are approved by the North Atlantic Implementation Management Group (NAT IMG) on behalf of the NAT SPG. The space below is provided to keep a record of such amendments.

The NAT SPG, at its 49th meeting, confirmed that approval of changes to this document was the responsibility of the NAT IMG, provided the changes were coordinated with the NAT SOG (*NAT SPG/49 Report*, paragraph 6.3.6 refers)

Amendments to the NAT ASM containing the following changes:	
Edition 2005- Version 1.0	<ul style="list-style-type: none"> • New definitions added • Table of acronyms added • ICAO Doc references updated to reflect the most current editions • Part I of the previous edition re-structured for clarity • Separation minima for supersonic aircraft have been removed • Recent changes to longitudinal separation minima <ul style="list-style-type: none"> - the removal of non-MNPS turbojet longitudinal separation minima - updates to other than turbojet longitudinal separation minima • Clarification on the application of RVSM minima between formation flights <ul style="list-style-type: none"> - formation flights of two aircraft with station-keeping equipment (only C-17s) can be provided RVSM separation - all other formation flights will not be provided RVSM minima • Airspace reservation minima has been incorporated into Chapter 3 • Part II of the previous edition concerning automation has been removed
Edition 2008 Version 2.0	<ul style="list-style-type: none"> • Definition of Mach number technique updated to refer to true Mach number • Longitudinal separation minimum applicable only to MNPS aircraft corrected • Cross reference corrected <p style="text-align: center;"><i>(approved at NAT SPG/43 – June 2007)</i></p> <ul style="list-style-type: none"> • Application of reduced longitudinal separation of 5 minutes for climb/descent between GNSS equipped aircraft: <p style="text-align: center;"><i>Paragraph 3.4.2 G added (following NAT IMG/32 endorsement – Nov2008)</i></p>
Edition 2009 Version 3.0	<ul style="list-style-type: none"> • Paragraph 3.2.1 updated to include vertical separation minimum from supersonic aircraft in accordance with NAT SUPPs 6.2.4.2 • Paragraph 3.4.2 updated to consolidate longitudinal separation minima and ensure consistency with associated Doc 4444 and NAT SUPPs provisions. Editorial revisions for clarity. • New paragraph 4.4.4 added to clarify direction regarding conflict prediction calculations. Subsequent paragraphs renumbered. • Text in diagram accompanying (new) paragraph 4.4.6 amended for consistency with (new) 3.4.2E.2.b. • (New) paragraph 4.4.7 and the explanatory text in the accompanying diagrams corrected.

Amendments to the NAT ASM containing the following changes:	
As of November 2010, the NAT ASM is published as <i>Application of Separation Minima – North Atlantic Region</i> (NAT ASM, NAT Doc 008)	
1 st Edition November 2010	<ul style="list-style-type: none"> • Definition for Same Identical Track added and definitions for Mach Number Technique, Opposite Direction Aircraft and Same Direction Aircraft updated. • Provisions for the application of longitudinal separation using Mach number technique (paragraphs 3.4.2 and 3.4.7) updated to refer to “same identical track” where appropriate. • Paragraphs 4.4.3 and 4.4.8 updated to take account of revised definitions for Same Direction aircraft and Opposite Direction aircraft respectively.
Amendment 1 June 2011	<ul style="list-style-type: none"> • Foreword updated to correctly identify how to obtain NAT documents. • Paragraph 3.2.1 E. Note 1 amended to correctly reflect operational practices related to the continuous climb or descent through MNPS airspace by aircraft which are not MNPS approved. • Superfluous paragraph 3.4.7 deleted, as it repeats provisions contained in 3.4.2. • First two examples of the application of the Gentle Slope Rules reinstated into paragraph 4.3.9. The final two examples, which were identical to the (former) first two examples, deleted.
Amendment 2 June 2013	<ul style="list-style-type: none"> • Cover page, headers and footers formats harmonized with NAT Doc 001. • Foreword updated to indicate to what this applies. • In paragraph 3.3.1: <ul style="list-style-type: none"> - Item G inserted, about provision for 50NM lateral separation within New York OCA for aircraft authorised for NAV 10 or RNP 4, and subsequent Items renumbered; - in Item I (formerly H), sub-item 2 inserted, about provision for 30NM lateral separation within New York OCA. • In paragraph 3.4.2: <ul style="list-style-type: none"> - Item D broken down to insert sub-item 2, about provisions for 15min longitudinal separation of other than turbojet aircraft; - Items E and F inserted, about provisions for 10min longitudinal separation, and subsequent Items renumbered; - in Item G (formerly E) paragraph references updated for consistency. • Paragraphs 3.4.3 and 3.4.4 inserted, about actions to take for specific cases, and subsequent Items renumbered. • In paragraph 3.4.6 (formerly 3.4.4), Item C broken down to insert sub-item 2, about provisions for 15min longitudinal separation of other than turbojet aircraft, and subsequent Items renumbered. • In paragraph 4.3.9, last word: typo corrected. • In paragraphs 4.4.5 and 4.4.9, explanation text of figures enhanced with mention that separation could be reduced depending on aircraft equipment and reporting capability. • In paragraph 4.4.11, mention that separation could be reduced depending on aircraft equipment and reporting capability. <p><i>(approved at NAT IMG/42, Report paragraph 7.2.5 and Appendix W refer)</i></p>
Amendment 3 November 2014	<ul style="list-style-type: none"> • In paragraph 3.3.1 <i>(approved at NAT IMG/45, NAT IMG Decision 45/8 refers, and NAT SOG/11 Summary of Discussions, paragraphs 3.7 through 3.14 refer)</i> <ul style="list-style-type: none"> - Item G corrected, about provision for 50NM lateral separation for aircraft authorised for NAV 10 or RNP 4.

Amendments to the NAT ASM containing the following changes:	
Amendment 4 June 2015	<ul style="list-style-type: none"> • In paragraph 3.3.1 (<i>approved at NAT IMG/46, NAT IMG Decisions 46/09 and 46/12 refer, and NAT SOG/12 Summary of Discussions, paragraphs 5.10 through 5.14 refer</i>) <ul style="list-style-type: none"> - Item I.2 amended, to read "... within New York OCA and Santa Maria OCA" - Item J added, about provision for 20NM lateral separation while one aircraft climbs/descends through the level of another aircraft, with a navigational performance of RNP 2 or a GNSS equipage. • In paragraph 3.4.4 (<i>approved at NAT IMG/46, NAT IMG Decision 46/09 refers, and NAT SOG/12 Summary of Discussions, paragraphs 5.13 and 5.14 refer</i>) <ul style="list-style-type: none"> - Item A. and B. amended, to read "... within New York OCA and Santa Maria OCA"
Amendment 5 June 2016	<ul style="list-style-type: none"> • Inserted a NAT Separation Implementation Table as Appendix A (<i>approved at NAT IMG/48, NAT IMG Decision 48/11 refers, and approved at NAT SOG/14 Decision 14/02 refers</i>)
Amendment 6 September 2016	<ul style="list-style-type: none"> • In paragraph 4.11 (<i>approved at NAT POG/02 Separation Implementation Table as Appendix A (approved at NAT IMG/48, NAT IMG Decision 48/11 refers, and approved at NAT SOG/14 Decision 14/02 refers)</i>)
Amendment 7 April 2017	<ul style="list-style-type: none"> • In paragraph 3.4.2, Item F. cross-references amended • In paragraphs 4.4.5 and 4.4.9, cross-references amended • Appendix A NAT Separation Implementation Table updated (<i>approved at NAT IMG/50, NAT IMG Decision 50/6 refers, and approved at NAT SOG/16 Summary of Discussions para 4.32 refers</i>)
Amendment 8 September 2018	<ul style="list-style-type: none"> • Update to the references to HLA and MNPS airspace and certifications; • Align some separation minima descriptions with ICAO documents; • Include of all separation minima applied by the NAT ANSPs; • Correct references to compulsory speed assignment (OWAFS Project Team and ICAO Documents); • Correct the separation minima applied in Santa Maria OCA; • Update the Table of Separation Minima, to take account of the PBCS implementation on March 2018.
Amendment 9 December 2019	<ul style="list-style-type: none"> • New paragraph 3.4.11 and updates to Appendix A, <i>NAT Table of Separation Minima, Lateral non-intersecting</i> and <i>NAT Table of Separation Minima, Longitudinal Distance Based</i> related to the incorporation of GNSS separation minima on T9 and T290; and • Amendment to paragraph 3.4.2 D. related to usage of 10 Minute Longitudinal Separation Between Aircraft On Same Tracks.

Amendments to the NAT ASM containing the following changes:	
Amendment 10 November 2020	<ul style="list-style-type: none"> • Add definition CURRENT FLIGHT PLAN. • Update definition of MACH NUMBER TECHNIQUE to remove ‘turbojet’ due 5 November 2020 PANS ATM (ICAO Doc 4444) amendment. • Update definition of OCEANIC ENTRY POINT and OCEANIC EXIT POINT to reflect NAT Doc 007 V.2020-2.1 update. • General update to ACRONYM list including removal of ‘ASEPS’. • General update in relation to ‘MNPS v NAT HLA.’ • Revised 3.2.1 <i>Note 2</i> to reflect renaming of airspace as NAT HLA. • Remove 90 NM separation from 3.3.1.C. Section renumbered accordingly. • Inserted in 3.3.1 new bullets I. and J to include 19 NM & 15 NM lateral spacing using ATS surveillance system where direct controller-pilot VHF voice communication is not available. Section renumbered accordingly. • Revised 3.4.2 bullets F and G to remove ‘<i>between turbojet aircraft.</i>’ • Inserted in 3.4.4 new bullets D and E to include 17 NM & 14 NM longitudinal separation using ATS surveillance system where direct controller-pilot VHF voice communication is not available. • Renumbering of 3.4.8 as new bullet D in 3.4.7. Section renumbered accordingly. • Inserted in 3.4.7 new bullet E to add 5 NM opposite direction separation provided surveillance position reports have demonstrated aircraft have passed. Section renumbered accordingly. • Revised 4.5.1 wording to clarify Mach Number Technique. • Update Appendix A Table of Separation Minima NAT Separation Implementation Table of Separation Minima: to add separations using ATS surveillance system where direct controller-pilot VHF voice communication is not available, general update to contents, update usage by ANSP, edit format and update timelines.
Amendment 11 December 2022	<ul style="list-style-type: none"> • Amend paragraph 3.4.2.D so that the 10 minutes longitudinal separation is also applicable to all aircraft under ATS surveillance.

Amendments to the NAT ASM containing the following changes:	
<p>Amendment 12 August 2023 <i>(Note: Additional edits related to New York OCA added after approval by NAT SPG/59)</i></p>	<p>In order to remove the distinction between turbojet and non-turbojet aircraft when it pertains to separation, the following amendments have been made:</p> <ul style="list-style-type: none"> • Paragraph 3.4.2 B edited to remove the 30 minutes longitudinal separation except in New York OCA; • Paragraph 3.4.2.C 1 and 2 deleted; • Paragraph 3.4.2 E delete reference to turbojet and Note added for New York OCA. • 3.4.4 B “turbojet” requirement removed, making the provision applicable to all aircraft types except for aircraft operations within the New York OCA; • 3.4.7 A edited to remove the 30 minutes longitudinal separation except in New York OCA; • 3.4.7 B 1 and 2 deleted; • 3.4.7 C reference to turbojet deleted; • 4.4.5 updated to remove turbojet and reference and associated conditions for “other than turbojet” aircraft. 2nd diagram deleted; • 4.4.6 turbojet deleted in text associated with 2nd diagram; • 4.4.9 turbojet deleted in text associated with first 3 diagrams. 4th diagram and associated text deleted; • 4.4.10 turbojet deleted in text associated with both diagrams; • 4.4.11 deleted; and • The Tables in Appendix A amended to reflect these changes.
<p>Amendment 13 January 2024</p>	<ul style="list-style-type: none"> • New paragraph 3.4.7.D inserted and current D and E renumbered as E and F. • All of Chapter 4 deleted and related cross-references deleted. • App A-Longitudinal Separation Minima, “14NM” removed for LPPO and “and Santa Maria OCA” deleted in paragraph 3.4.4.E. • App A-Opposite direction Minima, “5 minutes” changed from March 2018 to “NOW” for EGGX and CZQX, and to “-” for BIRD. • App A-references to 3.4.7.D renumbered as 3.4.7.E.
<p>Amendment 14 July 2024</p>	<ul style="list-style-type: none"> • 3.3.1 E “New York East OCA” changed to “New York OCA”. • 3.3.1 F para 2 deleted. • 3.3.1 G “New York OCA” added. • App A-Lateral Non-intersecting, “30NM” deleted for all and “23NM” for NY changed to “NOW”. • App A-Lateral Intersecting, “30NM” deleted for all and “23NM” for NY changed to “NOW”.

CHAPTER 1. – DEFINITIONS/ACRONYMS

1.1 DEFINITIONS

AIRSPACE RESERVATION - A defined volume of airspace that, by agreement between the appropriate ATS authority and a requesting agency, is temporarily reserved for exclusive use by the requesting agency.

AIR TRAFFIC CONTROL CLEARANCE - Authorization for an aircraft to proceed under conditions specified by an air traffic control unit. For convenience, the term “air traffic control clearance” is frequently abbreviated to “clearance” when used in appropriate contexts.

COMMON POINT - A point on the surface of the earth common to the tracks of two aircraft, used as a basis for the application of separation (e.g. significant point, waypoint, navigation aid, fix).

CRUISE CLIMB - An aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.

CRUISING LEVEL - A level maintained during a significant portion of a flight.

CURRENT FLIGHT PLAN - The flight plan, including changes, if any, brought about by subsequent clearances

DIVERGING TRACKS – Tracks downstream of the common point whose angular divergence is equal to or less than 90 degrees.

FLIGHT LEVEL - A surface of constant atmospheric pressure that is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals

FORMATION FLIGHT - More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting. Separation between the aircraft within the formation remains the responsibility of the flight leader and the pilots of the other aircraft in the flight, including periods when aircraft within the formation are manoeuvring to attain separation from each other to effect individual control and during join-up and break-away.

LATERAL SEPARATION - Lateral separation is the specified spacing between aircraft expressed in terms of distance or angular displacement between tracks.

LONGITUDINAL SEPARATION - Longitudinal separation is the specified interval between aircraft expressed in units of time or distance along track.

HIGH LEVEL AIRSPACE - A portion of the ICAO North Atlantic Region airspace between FL285 and FL420 within the oceanic control areas of Bodø Oceanic, Gander Oceanic, New York Oceanic East, Reykjavik, Santa Maria and Shanwick, excluding the Shannon and Brest Ocean Transition Areas.

MACH NUMBER TECHNIQUE - The term used to describe the technique of clearing aircraft operating along the same identical track or continuously diverging tracks to maintain specified true Mach numbers in order to maintain adequate longitudinal separation between successive aircraft at, or climbing or descending to, the same level.

MOVING AIRSPACE RESERVATION - An airspace reservation whose position in space changes with time.

NAMED POINT - A reporting point identified by a name as well as by latitude and longitude.

OCEANIC ENTRY POINT - Oceanic Entry point is generally a “named” waypoint, on or close to the FIR boundary where the aircraft enters an oceanic control area.

Note: For aircraft entering the Reykjavik CTA from Edmonton, at or north of 82N, the Oceanic Entry Point can be a Lat/Long position on the boundary.

OCEANIC EXIT POINT - Oceanic Exit point is generally a “named” waypoint, on or close to the FIR boundary where the aircraft leaves the last oceanic control area.

Note: Routes involving more than one OCA may result in multiple Oceanic Entry and Exit Points.

OTHER MEANS - Position information derived from advanced ATC automation systems that take into account multiple sources of information namely voice reports, ADS and/or CPDLC reports, estimates and weather information, may be the basis for applying separation standards.

OPPOSITE DIRECTION AIRCRAFT - Aircraft operating on tracks whose angular differences are from 90° up to and including 180°.

PASSING POINT - The point where aircraft are at the minimum distance from each other and from which longitudinal separation is calculated. This may or may not coincide with the common point.

REDUCED VERTICAL SEPARATION MINIMUM – The application of 1000 feet vertical separation from FL290 thru FL410 between approved aircraft in RVSM designated airspace.

SAME DIRECTION AIRCRAFT - Aircraft operating on tracks whose angular differences are from 0° up to but not including 90°.

SAME IDENTICAL TRACK – Aircraft paths whose projections on the earth’s surface are exactly the same.

SIGNIFICANT POINT - A significant point is a NAVAID, a fix derived from a NAVAID(s), a named point, or geographical coordinate(s) expressed in degrees of latitude, longitude or both, established for the purpose of providing separation, as a reporting point or to delineate a route of flight.

STATIONARY AIRSPACE RESERVATION - An airspace reservation whose position in space remains fixed with relation to the surface of the earth.

STEP CLIMB - A technique in which higher altitudes or flight levels are flight planned or achieved at a specified point or time.

STEEP TRACKS - Parallel tracks which are not laterally separated because the tracks exceed the allowable change in latitude for any ten-degree interval of longitude.

TRACK - The great circle projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic, or grid).

VERTICAL SEPARATION - Vertical separation is the specified spacing of aircraft expressed in altitudes or flight levels.

1.2 ACRONYMS

ADS	AUTOMATIC DEPENDENT SURVEILLANCE
ADS-B	AUTOMATIC DEPENDANT SURVEILLANCE - BROADCAST
ADS-C	AUTOMATIC DEPENDANT SURVEILLANCE - CONTRACT
ATC	AIR TRAFFIC CONTROL
ATS	AIR TRAFFIC SERVICE
CPDLC	CONTROLLER/PILOT DATA LINK COMMUNICATIONS
CTA	CONTROL AREA
FIR	FLIGHT INFORMATION REGION
FL	FLIGHT LEVEL
GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM
HLA	HIGH LEVEL AIRSPACE
ICAO	INTERNATION CIVIL AVIATION ORGANIZATION
MNT	MACH NUMBER TECHNIQUE
MNPS	MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS
NAT	NORTH ATLANTIC
OCA	OCEANIC CONTROL AREA
NM	NAUTICAL MILES
PANS-ATM	PROCEDURES FOR AIR NAVIGATION SERVICES-AIR TRAFFIC MANAGEMENT (Doc 4444)
RCP	REQUIRED COMMUNICATION PERFORMANCE
RNP	REQUIRED NAVIGATION PERFORMANCE
RSP	REQUIRED SURVEILLANCE PERFORMANCE
RVSM	REDUCED VERTICAL SEPARATION MINIMUM
VHF	VERY HIGH FREQUENCY

CHAPTER 2. – SEPARATION

2.1 Separation is the generic term used to describe action on the part of ATC in order to keep aircraft, operating in the same general area, at such distances from each other that the risk of their colliding with each other is reduced. Separation can be effected in two planes, horizontal and vertical. Separation in the horizontal plane can be achieved either longitudinally (by spacing aircraft behind each other at a specified distance, normally expressed in flying time) or laterally (by spacing aircraft side by side, but again at a specified distance from each other).

2.2 The required separation between aircraft is generally expressed in terms of minima, i.e. in distances which should not be infringed. Separation minima for the ICAO North Atlantic Region are specified in firm values of distance; horizontally in nautical miles (NM) or degrees of latitude; vertically in feet or flight levels, or in values of time between the moment a preceding aircraft passes over a given point and that time when the next aircraft is allowed to pass over the same point.

2.3 An air traffic control clearance shall not be given which would reduce the spacing between aircraft to less than the applicable separation minimum.

2.4 Where the type of separation or minimum used to separate aircraft cannot be maintained, action shall be taken to ensure that another type of separation or another minimum exists or is established prior to the time when the previously used separation would be insufficient.

2.5 The *PANS-ATM (Doc 4444)*, Chapter 5.11, permits the lateral and longitudinal separation minima, as detailed in this publication, to be reduced in the following circumstances:

5.11.1 Provided an appropriate safety assessment has shown that an acceptable level of safety will be maintained, and after prior consultation with users, the separation minima detailed in 5.4.1 and 5.4.2 may be reduced in the following circumstances:

5.11.1.1 As determined by the appropriate ATS authority as appropriate:

a) when special electronic or other aids enable the pilot-in-command of an aircraft to determine accurately the aircraft's position and when adequate communication facilities exist for that position to be transmitted without delay to the appropriate air traffic control unit; or

b) when, in association with rapid and reliable communication facilities, information of an aircraft's position, derived from an ATS surveillance system, is available to the appropriate air traffic control unit; or

c) when special electronic or other aids enable the air traffic controller to predict rapidly and accurately the flight paths of aircraft, and adequate facilities exist to verify frequently the actual aircraft positions with the predicted positions; or

d) when RNAV-equipped aircraft operate within the coverage of electronic aids that provide the necessary updates to maintain navigation accuracy.

5.11.1.2 In accordance with regional air navigation agreements when:

a) special electronic, area navigation or other aids enable the aircraft to closely adhere to their current flight plans; and

b) the air traffic situation is such that the conditions in 5.11.1.1 a) regarding communications between pilots and the appropriate ATC unit or units need not necessarily be met to the degree specified therein.

Note.— Attention is drawn to the guidance material contained in the Air Traffic Services Planning Manual (Doc 9426) regarding conditions governing the reduction of separation minima and to the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689).

CHAPTER 3. – SEPARATION MINIMA

3.1 INTRODUCTION

3.1.1 In defining appropriate minima the primary consideration is the accuracy with which the relevant parameters can be measured. Thus vertical minima depend on the accuracy of the altimetry system, lateral minima on navigational accuracy and longitudinal minima on the quality of meteorological information available.

3.2 VERTICAL SEPARATION MINIMA

3.2.1 Minimum vertical separation between aircraft, airspace reservations, and between airspace reservations and other aircraft shall be:

- A. 4000 feet at or above FL 450 between supersonic aircraft, and between supersonic aircraft and any other aircraft.
- B. 2000 feet at or above FL 290 between a formation flight and any other aircraft.
- C. 2000 feet at or above FL 290.
- D. 1000 feet from FL 290 to FL 410 inclusive between RVSM aircraft.
- E. 1000 feet below FL 290.

Note 1: Non-RVSM aircraft may be cleared to climb or descend through the RVSM-designated flight levels provided that the aircraft will carry out a continuous climb or descent through all RVSM-designated flight levels.

Note 2: Non-RVSM aircraft may also, under specific circumstances, be granted exemptions to operate in RVSM airspace. Such aircraft shall be vertically separated from other traffic by the non-RVSM separation minimum of 2000 feet. Aircraft must also be NAT HLA MNPS approved in order for this to apply within NAT HLA.

Note 3: Formation flights are considered to be non-RVSM. Such flights shall be vertically separated from other traffic by the non-RVSM separation minimum of 2000 feet within the RVSM designated flight levels.

Note 4: Two RVSM approved aircraft with station-keeping equipment operating as a formation flight on the same route, at the same altitude with less than 4000' longitudinal separation are considered to be one aircraft for the purpose of separation. 1000 feet vertical separation can be applied between these and other RVSM approved aircraft. Currently, only formation flights of two C-17 aircraft qualify. NAT ANSP should prior co-ordinate all C-17 formation flights. Apply 2000 feet vertical separation when requested so as to meet domestic RVSM requirements.

Note 5: RVSM minima shall not be applied between any aircraft and an airspace reservation.

Note 6: Under certain circumstances, ATS units may temporarily apply increased vertical separation. (e.g. in areas where greater than moderate turbulence has been reported).

3.3 LATERAL SEPARATION MINIMA

3.3.1 Lateral separation is applied between route segments. Segments may be wholly or partly separated but for aircraft to be laterally separated both must be within the separated segments or segment parts.

The following lateral separation minima apply to all aircraft and include both moving and stationary airspace reservations:

- A.** *120 NM or 2 degrees* between aircraft operating entirely outside NAT HLA other than as prescribed below; or
- B.** *120 NM*:
 - 1. between the closest tracks of any aircraft for which a moving airspace reservation is reserved:
or
 - 2. between the track of an aircraft operating under the control of the ATC unit concerned and the closest track of any aircraft for which a moving airspace reservation is reserved; or
 - 3. between the track of an aircraft operating under the control of the ATC unit concerned or as part of a moving airspace reservation and the nearest limit of the reserved airspace of the stationary airspace reservation, when the aircraft does NOT meet the required navigation specification and the requesting agency has NOT guaranteed to confine its activities to the requested airspace: or
 - 4. between the boundaries of stationary airspace reservations other than those contained in 3.3.1.F:
or
- C.** *60 NM or 1 degree* between MNPS aircraft provided a portion of the route is within, above, or below NAT HLA; or
- D.** *60 NM*:
 - 1. between the closest tracks of any aircraft for which a moving airspace reservation is reserved provided all aircraft or formation flights meet the required navigation specification; or
 - 2. between the track of an aircraft operating under the control of the ATC unit concerned and the track of any of a formation flight for which a moving airspace reservation is reserved, provided at least one aircraft in the formation and the aircraft operating under the control of the ATC unit meet the required navigation specification, and a portion of the route of the aircraft is above, within, or below NAT HLA; or
 - 3. between the track of an aircraft operating under the control of the ATC unit concerned and the closest track of any of the aircraft for which a moving airspace reservation is reserved, provided all aircraft meet the required navigation specification, and a portion of the route of the aircraft is above, within, or below NAT HLA; or
 - 4. between the track of an aircraft operating under the control of the ATC unit concerned or as part of a moving airspace reservation and the nearest limit of the reserved airspace of the stationary airspace reservation, provided the aircraft meets the required navigation specification, a portion of the route of the aircraft is above, within, or below NAT HLA, and the requesting agency has NOT guaranteed to confine its activities to the requested airspace; or
 - 5. between the track of an aircraft operating under the control of the ATC unit concerned or as part of a moving airspace reservation and the nearest limit of the reserved airspace of the stationary airspace reservation, when the aircraft does NOT meet the required navigation specification and the requesting agency has guaranteed to confine its activities to the requested airspace: or
 - 6. between the boundaries of stationary airspace reservations provided the requesting agencies have guaranteed to confine their activities to the requested airspace; or

Note: A formation flight where the lead aircraft in the formation meets the required navigation specification is deemed to meet the requirements for the application of 60 NM.

- E.** 50 NM: between aircraft operating within Bodø OCA (only non-intersecting), Reykjavik OCA, New York OCA and Santa Maria OCA and authorized RNAV (RNP) 10 or RNP 4; or

Note: The application of 50NM lateral separation in Reykjavik OCA is based on an operational trial between NAT HLA MNPS approved aircraft on intersecting and non-intersecting tracks.

- F.** 30 NM: between the track of an aircraft operating under the control of the ATC unit concerned or as part of a moving airspace reservation and the nearest limit of the reserved airspace of the stationary airspace reservation, provided the aircraft meets the required navigation specification, a portion of the route of the aircraft is above, within or below NAT HLA, and the requesting agency has guaranteed to confine its activities to the requested airspace; or

- G.** 23 NM: between aircraft operating entirely within Gander OCA, New York OCA, Reykjavik OCA, Santa Maria OCA and Shanwick OCA, authorized RNP 4, CPDLC RCP240, ADS-C RSP180, and successfully logged on to CPDLC and ADS-C with a 5 NM lateral deviation event contract established; or

- H.** 20 NM: applied while one aircraft climbs/descends through the level of another aircraft, a navigational performance of RNP 2 or a GNSS equipage shall be prescribed for both aircraft; or

- I.** 19 NM: lateral spacing between parallel or non-intersecting tracks where direct controller-pilot VHF voice communication is not available utilizing positioning information derived from an ATS surveillance system, provided the following requirements are met:

- a) Navigational performance of RNP 4 or RNP 2 shall be prescribed;
- b) the communication system shall satisfy RCP 240;
- c) an alternate means of communication shall be available so as to allow the controller to intervene and resolve a conflict within a total of nine minutes, should normal means of communications fail, and

Note.— The total time specified in c) includes the four minutes allocated to RCP 240.

- d) route conformance monitoring shall be ensured by the use of ATS surveillance system lateral deviation alerts with a warning threshold normally set at a maximum 3 NM.
 - 1) Warning thresholds greater than 3 NM may be set, provided lateral separation minima 19 NM are increased by 1 NM for each 1 NM that the warning threshold is increased; and

ATS surveillance systems shall provide for the display of alerts in a clear and distinct manner, to enable immediate action by the controller in the event of a lateral deviation.

- J.** 15 NM: The separation in **I.** above may, if so prescribed by the appropriate ATS authority, be reduced, but not below 27.8 km (15.0 NM), provided either:

- a) the density of traffic in the airspace, as measured by occupancy, is less than 0.6; or
- b) the proportion of total flight time spent by aircraft off the cleared track does not exceed the following:

- 2) for aircraft deviating 13.0 km (7.0 NM) or more off the cleared track, 3×10^{-5} per flight hour; and
- 3) for aircraft deviating 20.4 km (11.0 NM) or more off the cleared track, 1×10^{-5} per flight hour.

- K.** 15 NM: a navigational performance of RNP 2 or a GNSS equipage shall be prescribed for both aircraft. Direct controller pilot VHF voice communication shall be maintained; or
- L.** 7 NM: applied while one aircraft climbs/descends through the level of another aircraft, a navigational performance of RNP 2 or a GNSS equipage shall be prescribed for both aircraft. Direct controller pilot VHF voice communication shall be maintained.

3.3.2 The above minima when expressed in terms of degrees are nominal values; the specific method of applying them using the Earth's coordinate system (the "gentle-slope" rule) provides slightly lower lateral distances.

3.4 LONGITUDINAL SEPARATION MINIMA

3.4.1 Longitudinal separation shall be applied so that the spacing between the estimated positions of the aircraft being separated is never less than a prescribed minimum.

3.4.2 Longitudinal separation minima for aircraft flying along same/intersecting tracks shall be applied by ensuring that throughout the period where lateral separation does not exist the aircraft are separated by a time interval equal to or greater than:

- A.** 60 minutes between moving airspace reservations.

Note: This separation shall be ensured in the airspace reservation approval process. Apply longitudinal separation so that 60 minutes will be maintained with respect to any approved "Approval Void if Aircraft Not Airborne by (AVANA)" times. Minimum longitudinal separation is applied between the latest time of the first reservation against the earliest time of the second reservation.

- B.** 30 minutes between other than turbojet aircraft operating within the New York OCA.

- C.** 15 minutes.

- D.** 10 minutes between aircraft on same/intersecting tracks, whether in level, climbing or descending flight, provided the aircraft have ADS-C periodic contracts with a maximum reporting interval of 20 minutes or are being tracked by an ATS surveillance system.

Note: this application satisfies the PANS-ATM 5.4.2.2.1 b), 5.4.2.2.2.1 b), 5.4.2.2.1.2 b) and 5.4.2.2.2.2 b) requirements that GNSS permits frequent determination of position and speed.

- E.** 10 minutes between same direction aircraft in climbing or descending flight while vertical separation does not exist, provided that both aircraft are GNSS equipped and that both aircraft have reported their position within 20 minutes of the time when the clearance to climb or descend is issued.

Note 1: this application satisfies the PANS-ATM 5.4.2.2.2.2 b) requirement that navigation aids permit frequent determination of position and speed.

Note 2: In the New York OCA, this separation minima applies to turbojet aircraft only.

- F.** *10 minutes* provided the Mach Number Technique is applied as prescribed in paragraphs 3.4.8 and 3.4.9 whether in level, climbing or descending flight, provided:
1. that when the succeeding aircraft is maintaining a true Mach number higher than the preceding aircraft, and
 2. the aircraft concerned have reported over a common point and follow:
 - a) the same identical track; or
 - b) continuously diverging tracks until some other form of separation is provided, and
 - i) at least 10 minutes longitudinal separation exists at the point where the tracks diverge, and
 - ii) at least 5 minutes longitudinal separation exists where lateral separation is achieved, and
 - iii) lateral separation will be achieved at or before the next significant point (normally ten degrees of longitude along track(s)) or, if not, within 90 minutes of the time the second aircraft passes the common point or within 600 NM of the common point, whichever is estimated to occur first.
 3. If the aircraft have not reported over a common point, it is possible to ensure, by radar, ADS-B or other means that the appropriate time interval will exist at the common point from which they either follow the same identical track or continuously diverging tracks.
- G.** Between *9 and 5 minutes* inclusive provided the Mach number technique is applied as prescribed in paragraphs 3.4.8 and 3.4.9 whether in level, climbing or descending flight, provided:
1. the aircraft concerned have reported over a common point and follow:
 - a) the same identical track, or
 - b) continuously diverging tracks until some other form of separation is provided.
 2. the preceding aircraft is maintaining a true Mach number greater than the following aircraft in accordance with the following table:
 - *9 minutes*, if the preceding aircraft is Mach 0.02 faster than the following aircraft;
 - *8 minutes*, if the preceding aircraft is Mach 0.03 faster than the following aircraft;
 - *7 minutes*, if the preceding aircraft is Mach 0.04 faster than the following aircraft;
 - *6 minutes*, if the preceding aircraft is Mach 0.05 faster than the following aircraft;
 - *5 minutes*, if the preceding aircraft is Mach 0.06 faster than the following aircraft.
 3. if the aircraft have not reported over a common point, it is possible to ensure, by radar, ADS-B or other means that the appropriate time interval will exist at the common point from which they either follow the same identical track or continuously diverging tracks.
- H.** *5 minutes* between climbing or descending same direction aircraft while vertical separation does not exist, provided that the level change is commenced within 10 minutes of the time the second aircraft has reported over a common point; or

Note 1: Both aircraft must be GNSS equipped.

Note 2: When issuing the clearance through third party communication or CPDLC, a restriction must be added to the clearance to ensure that the 10 minute condition is satisfied.

Note 3: To facilitate application of the procedure where a considerable change of level is involved, a descending aircraft may be cleared to some convenient level above the lower aircraft, or a climbing aircraft to some convenient level below the higher aircraft, to permit a further check on the separation that will be obtained while vertical separation does not exist.

- I.** 5 minutes between aircraft operating entirely within Gander OCA, Reykjavik OCA, Santa Maria OCA and Shanwick OCA, authorized RNP 4 or 10, CPDLC RCP240, ADS-C RSP180, and successfully logged on to CPDLC and ADS-C.

Note: The application of this separation minimum is also dependent on conditions stated in the PANS ATM, paragraphs 5.4.2.9.4, 5.4.2.9.5, 5.4.2.9.6, 5.4.2.9.7 and 5.4.2.9.8.

3.4.3 During the application of 3.4.2.D, when an ADS-C periodic report is not received, the controller shall take action within 3 minutes to establish communication. If communication has not been established within 6 minutes of the time the report should have been received, the controller shall take action to apply an alternative form of separation.

3.4.4 Longitudinal separation minima for aircraft flying along same/intersecting tracks shall be applied by ensuring that throughout the period where lateral separation does not exist, the aircraft are separated by a distance interval equal to or greater than:

- A.** 50 NM: between turbojet aircraft operating entirely within New York OCA and authorized RNAV (RNP) 10 or RNP 4, CPDLC RCP240, ADS-C RSP180, and successfully logged on to CPDLC and ADS-C; or
- B.** 30 NM: between aircraft operating entirely within New York OCA and Santa Maria OCA, authorized RNP 4, CPDLC RCP240, ADS-C RSP180, and successfully logged on to CPDLC and ADS-C.

Note: Within the New York OCA, this separation minima is available to turbojet aircraft only.

- C.** 20 NM: between aircraft on the same track, provided separation is checked by obtaining simultaneous GNSS readings from the aircraft at frequent intervals to ensure that the minimum will not be infringed.
- D.** 17 NM: between aircraft operating on same tracks or crossing tracks applied provided that the relative angle between the tracks is less than 90 degrees within Gander OCA, Shanwick OCA and Santa Maria OCA, authorized RNP 4 or RNP 2, CPDLC RCP240, successfully logged on to CPDLC and utilizing position information derived from an ATS surveillance system.
- E.** 14 NM: between aircraft operating on same tracks or crossing tracks applied provided that the relative angle between the tracks is less than 45 degrees within Gander OCA and Shanwick OCA, authorized RNP 4 or RNP 2, CPDLC RCP 240, successfully logged on to CPDLC and utilizing position information derived from an ATS surveillance system.

3.4.5 The minimum longitudinal separation between a moving airspace reservation and other (non-reservation) aircraft shall be the applicable longitudinal minima as contained in paragraph 3.4.2 above. Minimum longitudinal separation may be applied between aircraft operating under the control of the ATC unit concerned and the first and last aircraft operating within a moving airspace reservation.

3.4.6 Longitudinal separation minima for aircraft flying along the same track climbing or descending through the level of another aircraft that are separated by a distance interval equal to or greater than:

- A.** 15 NM: between turbojet aircraft operating entirely within the New York OCA with a Figure of Merit (FOM) of 6 or better and successfully logged on to CPDLC and ADS-C conducting an ADS-C Climb/Descent Procedure (CDP);

Note: The application of this separation minimum is also dependent on conditions stated in the PANS ATM, paragraphs 5.4.2.8.1 and 5.4.2.8.2.

- B.** 15 NM: between turbojet aircraft operating entirely within the New York OCA where the manoeuvring aircraft is equipped with both ADS-B in and out.

Note: The application of this separation minimum is also dependent on conditions stated in the PANS ATM, paragraphs 5.4.2.7.1, 5.4.2.7.2, 5.4.2.7.3, 5.4.2.7.3.1, 5.4.2.7.3.2 and 5.4.2.7.3.3.

3.4.7 Longitudinal separation between aircraft flying along opposite direction tracks (and not laterally separated) cannot apply throughout. Vertical separation must therefore be ensured during a period equal to the appropriate minimum stated below prior to and after the aircraft are estimated to meet:

- A.** 30 minutes for other than turbojet aircraft operating inside of the New York OCA.
- B.** 15 minutes.
- C.** 10 minutes for aircraft provided that the aircraft have passed each other and have reported over a common point.
- D.** 10 minutes between GNSS equipped aircraft provided it has been determined by position reports that the aircraft have passed each other.
- E.** Opposite direction aircraft on reciprocal tracks may be cleared to climb or descend to or through the levels occupied by another aircraft provided ADS-C reports show that the aircraft have passed each other by the applicable separation minimum in 3.4.2,I, and in 3.4.4.A and B.
- F.** Opposite direction aircraft on reciprocal tracks may be cleared to climb or descent to or through the levels occupied by another aircraft, provided that surveillance position reports have been received from both aircraft demonstrating the aircraft have passed each other by 5 NM.

3.4.8 When assigned, any aircraft shall adhere to the true Mach number approved by ATC and shall request ATC approval before making any changes thereto. If it is essential to make an immediate temporary change in the Mach number (e.g. due to turbulence), ATC shall be notified as soon as possible that such a change has been made.

3.4.9 If it is not feasible, due to aircraft performance, to maintain the last assigned true Mach number during en-route climbs and descents, pilots of aircraft concerned shall advise ATC at the time of the climb/descent request.

APPENDIX A
NAT Table of Separation Minima
Lateral non-intersecting

Separation Type	LATERAL Non-intersecting												Notes
	ANSP Status						Comms / Navigation / Surveillance Requirements			ICAO References			
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S	PANS	7030	Nat Doc 008	
60NM & Gentle Slope	-	NOW	NOW	NOW	NOW	NOW	-	MNPS	-	N/A	6.2.1.1.c	3.3.1 C & D	
50NM	NOW	NOW	-	NOW	NOW	-	-	RNP 4 or 10	-	5.4.1.2.1.6	6.2.1.1.b	3.3.1.E	
50NM	NOW	-	-	-	-	-	-	NAT HLA	-	N/A	N/A	N/A	Operational Trial in Reykjavik CTA
23NM	NOW	-	NOW	NOW	NOW	NOW	RCP 240	RNP 4	RSP 180	5.4.1.2.1.6	-	3.3.1.G	
15NM	NOW	-	NOW	-	-	-	VHF	RNP 2 / GNSS	-	5.4.1.2.1.6	-	3.3.1.K	Applied below FL285 in the Reykjavik CTA and all levels T9/T290
7NM (While one aircraft is climbing – descending)	NOW	-	-	-	-	-	VHF	RNP 2 / GNSS	-	5.4.1.2.1.6	-	3.3.1.L	Applied only below FL285 in the Reykjavik CTA

Separation Type	LATERAL Non-intersecting												
	ANSP Status						Comms / Navigation / Surveillance Requirements			ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S	PANS	7030	Nat Doc 008	
through level of aircraft remaining in level flight)													
20NM (While one aircraft is climbing – descending through level of aircraft remaining in level flight)	NOW	-	-	-	-	-	-	RNP 2 / GNSS	-	5.4.1.2.1.6	-	3.3.1.H	Applied only below FL285 in the Reykjavik CTA
19 NM ATS	-	-	NOW	NOW	-	NOW	RCP 240 VHF Communication not available	RNP 4 or 2	ATS Surveillance System	8.7.4.2.a	-	3.3.1.I	
15 NM ATS	-	-	TBC	-	-	TBC	RCP 240 VHF Communication not available	RNP 4 or 2	ATS Surveillance System	8.4.3	-	3.3.1.J	

Lateral intersecting

Separation Type	LATERAL intersecting												Notes
	ANSP Status						Comms / Navigation / Surveillance Requirements			ICAO References			
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S	PANS	7030	Nat Doc 008	
50NM	NOW	-	-	NOW	NOW	-	-	RNP 10	-	5.4.1.2.1.8.b	-	3.3.1.E	.
50NM (NAT HLA)	NOW	-	-	-	-	-	-	NAT HLA MNPS	-	5.4.1.2.1.8.b	N/A	3.3.1.E	Operational Trial in Reykjavik CTA
23NM	NOW	-	NOW	NOW	NOW	NOW	RCP 240	RNP 4	RSP 180	5.4.1.2.1.8.b	-	3.3.1.G	
15NM	NOW	-	-	-	-	-	-	RNP 2 GNSS	-	5.4.1.2.1.8.b 5.4.1.2.1.9	-	3.3.1.K	Applied only below FL285 in the Reykjavik CTA

Longitudinal time based

LONGITUDINAL Time														
Same Direction / Crossing Track														
Separation Type	ANSP Status						Comms / Navigation / Surveillance Requirements			Same Level or Climbing / Descending or Both	ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S		PANS	7030	Nat Doc 008	
30 minutes (other than turbojet)	-	-	-	-	NOW	-	-	-	-	-	-	-	3.4.2.B	-
15 minutes (same direction)	NOW	-	NOW	NOW	NOW	NOW	HF	-	-	Same Level	5.4.2.2.1.1a	6.2.2.1.a		
										Climbing / Descending	5.4.2.2.2.1.a			
15 minutes (crossing tracks)	NOW	-	NOW	NOW	NOW	NOW	HF	-	-	Same Level	5.4.2.2.1.2.a			
										Climbing / Descending	5.4.2.2.2.2.a			
10 minutes (UP TO 89°)	NOW	-	-	NOW	NOW	-	HF	-	NAV AIDS/ ADS-C/GNSS	Same Level	5.4.2.2.1.1.b	-	3.4.2.E 3.4.2.D	
										Climbing / Descending	5.4.2.2.2.1.b			
10 minutes (Mach N° Technique)	NOW	-	NOW	NOW	NOW	NOW	HF	-	-	Both	5.4.2.4.3.1	6.2.2.1.b.1 & 2 & 3	3.4.2.F	Reported common point same track or continuously diverging

LONGITUDINAL Time														
Same Direction / Crossing Track														
Separation Type	ANSP Status						Comms / Navigation / Surveillance Requirements			Same Level or Climbing / Descending or Both	ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S		PANS	7030	Nat Doc 008	
Between 9 and 5 minutes (Mach Number Technique)	NOW	-	NOW	NOW	NOW	NOW	-	-	-	Both	5.4.2.4.3.2	-	3.4.2.G	Same track diverging
5 minutes GNSS	-	-	-	NOW	-	-	-			Climbing/descending	--	--	3.4.2.H	
5 minutes (UP TO 89°)	NOW	-	NOW	NOW	-	NOW	RCP 240	RNP 2 or 4 or 10	RSP 180 (Periodic 14 mins)	Both	5.4.2.9.2.b	6.2.2.3.c	3.4.2.I	

Longitudinal distance based

LONGITUDINAL Distance														
Same Direction / Crossing Track														
Separation Type	ANSP Status						Comms / Navigation / Surveillance Requirements			Same Level or Climbing / Descending or Both	ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S		PANS	7030	Nat Doc 008	
50NM (same direction)	-	-	-	-	NO W	-	RCP 240	RNP 10	RSP 180 (Periodic 27 minutes)	Both	5.4.2.9.2.b	6.2.2.2.a	3.4.4.A	
50NM (same direction)	-	-	-	-	NO W	-	RCP 240	RNP 4	RSP 180 (Periodic 32 minutes)	Both	5.4.2.9.2.b	6.2.2.2.a	3.4.4.A	
30NM (same direction)	-	-	-	NOW	NO W	-	RCP 240	RNP 2 or 4	RSP 180 (Periodic 12 minutes)	Both	5.4.2.9.2-b	6.2.2.2.b	3.4.4.B	
20 NM GNSS	-	-	NOW	-	-	-	VHF-	GNSS-	ADS - B	Same level	5.4.2.3.1 5.4.2.3.3.1a) 2	-	3.4.4.C	T9 & T290 only
ADS-C –CDP 15/25NM Climbing / Descending	-	-	-	-	NO W	--	RCP 240	HLA	ADS-C		5.4.2.8.1.b	N/A	3.4.6.A	State Letter AN 13/2.5-15/45
17 NM ATS	-	-	NOW	NOW	-	NOW	RCP 240 VHF communication not available	RNP 4	ATS Surveillance System	Both	8.7.4.2.c	N/A	3.4.4.D	

LONGITUDINAL Distance														
Same Direction / Crossing Track														
Separation Type	ANSP Status						Comms / Navigation / Surveillance Requirements			Same Level or Climbing / Descending or Both	ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S		PANS	7030	Nat Doc 008	
14 NM ATS	-	-	NOW	-	-	NOW	RCP 240 VHF communication not available	RNP 4 or 2	ATS Surveillance System	Both	8.7.4.4	N/A	3.4.4.E	

Opposite direction

LONGITUDINAL														
Opposite Direction														
Separation Type	ANSP Status						Comms / Navigation / Surveillance Requirements			Same Level or Climbing / Descending or Both	ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S		PANS	7030	Nat Doc 008	
30 minutes (other than turbojet)	-	-	-	-	NOW	-	-	-	-	-	-	-	3.4.7.A	-
15 minutes	NOW	NOW	NOW	NOW	NOW	NOW	HF	-	-	Both-	-	6.2.2.1	3.4.7.B	

LONGITUDINAL														
Opposite Direction														
Separation Type	ANSP Status						Comms / Navigation / Surveillance Requirements			Same Level or Climbing / Descending or Both	ICAO References			Notes
	BIRD	ENOB	EGGX	LPPO	NY	CZQX	C	N	S		PANS	7030	Nat Doc 008	
10 minutes (reported passed via a common point)	NOW	NOW	NOW	NOW	NOW	NOW	HF	-	-	Both	5.4.2.9.3		3.4.7.C	
50NM	-	-	-	-	NOW	-	RCP 240	RNP 10	RSP 180 (Periodic 27 minutes)	Both	5.4.2.9.3	-	3.4.7.E	
50NM	-	-	-	-	NOW	-	RCP 240	RNP 4	RSP 180 (Periodic 32 minutes)	Both	5.4.2.9.3	-	3.4.7.E	
30NM	-	-	-	NOW	NOW	-	RCP 240	RNP 2 or 4 or 10	RSP 180 (Periodic 12 minutes)	Both	5.4.2.9.3	-	3.4.7.E	
5 minutes	-	-	NOW	NOW	-	NOW	RCP 240	RNP 2 or 4 or 10	RSP 180 (Periodic 14 Mins)	Both	5.4.2.9.3	-	3.4.7.E	
5 NM ATS	-	-	NOW	NOW	-	NOW	RCP 240 VHF communication not available	RNP 4 or 2	ATS Surveillance System	Both	8.7.2.4.d	N/A	3.4.7.F	

— END —