

## NORTH ATLANTIC (NAT) REGIONAL SUPPLEMENTARY PROCEDURES

These procedures are supplementary to the provisions contained in Annex 2, Annex 6 (Parts I, II and III), Annex 8, Annex 10, Annex 11, PANS-ATM (Doc 4444) and PANS-OPS (Doc 8168). They do not apply in the local areas established by the appropriate authorities around Bermuda, Iceland, the Faroe Islands and Santa Maria, and in Greenland. The area of application of the NAT Regional Supplementary Procedures is included on the Index to Application of Supplementary Procedures chart.

### Working Copy

This version of the Working Copy of the 5<sup>th</sup> Edition of the NAT *Regional Supplementary Procedures* (SUPPS) (Doc 7030), **Amendment No. 9, dated 25 April 2014**, includes the following approved amendment(s) which have not yet been published:

<b>P. f. Amdt. Serial No.</b>	<b>Originator</b>	<b>Brief Description</b>	<b>Date Approved</b>	<b>Date Entered</b>
15/37-NAT 2.1	NAT SPG	Amendment Chapter 2, Flight Plan, Section 9.19	8 January 2016	1 March 2016
15/18-NAT 6.9	NAT SPG	Amendment Chapter 6, Air Traffic Services, Section 6.9 „MNPS Procedures	19 February 2016	1 March 2016
15/39-NAT 5.2	NAT SPG	Amendment Chapter 5, Surveillance, adoption of word „Nil“ for para 5.3.1.1	26 February 2016	1 March 2016
15/22-NAT 6.1	NAT SPG	Amendment Chapter 6, Air Traffic Services, removal of paragraph 6.117	26 February 2016	3 March 2016
15/40-NAT 2-4	NAT SPG	Amendment Chapter 2, Flight Plans, para 2.1.16 „Aircraft Registration and Aircraft Address“	13 January 2016	16 March 2016
15/38-NAT 4-1, 6-2	NAT SPG	Amendments in Chapter 4 „Navigation“ and Chapter 6 „ATS“	20 April 2016	21 April 2016
16/02-NAT 2-1	NAT SPG	Amendments in Chapter 2-4-6-7-9, clarifying requirements to operate in NAT HLA	20 Sept 2016	27 Sept 2016



## FOREWORD

1. The ICAO Regional Supplementary Procedures (SUPPS) form the procedural part of the Air Navigation Plans developed by Regional Air Navigation (RAN) Meetings to meet those needs of specific areas which are not covered in the worldwide provisions. They complement the statement of requirements for facilities and services contained in the Air Navigation Plan publications. Procedures of worldwide applicability are included either in the Annexes to the Convention on International Civil Aviation as Standards or Recommended Practices, or in the Procedures for Air Navigation Services (PANS).

2. In the development of Regional Supplementary Procedures, the following criteria must be satisfied:

- a) Regional Supplementary Procedures should indicate a mode of implementing procedural provisions in Annexes and PANS, as distinct from a statement or description of required facilities and services as published in the Air Navigation Plan publications. Regional Supplementary Procedures may also indicate permissible additions to provisions in Annexes and PANS, subject to the restrictions in b) and c).
- b) Regional Supplementary Procedures must **not** be in conflict with the provisions contained in the Annexes or PANS. They must either specify detailed procedural regional options for those provisions or promulgate a regional procedure of justifiable operational significance, additional to existing provisions in Annexes or PANS.
- c) In the drafting of Regional Supplementary Procedures, variations in the text of procedures with similar intent applicable to more than one area should be avoided.

3. The Regional Supplementary Procedures do not have the same status as Standards and Recommended Practices. The latter are **adopted** by Council in pursuance of Article 37 of the Convention on International Civil Aviation, subject to the full procedure of Article 90. PANS are **approved** by the President of the Council of ICAO on behalf of the Council and SUPPS are **approved** by the Council; the PANS are recommended to Contracting States for worldwide use, whilst the SUPPS are recommended to Contracting States for application in the groups of flight information regions to which they are relevant.

4. PANS were originally developed from common recommendations of regional meetings and were given worldwide application by the ICAO Council after action thereon by ICAO Divisions. Subsequently, there has been a gradual evolution of procedures from the regional to the worldwide category as ICAO Divisions have been able to adapt regionally developed procedures to worldwide requirements. Concurrently, some of the worldwide procedures have been found suitable for classification as Standards or Recommended Practices and therefore are gradually being incorporated into the Annexes to the Convention.

5. Application of the Regional Supplementary Procedures in certain areas of the world has been specified according to groups of flight information regions (FIRs) as shown on page (xiii). The abbreviations on the chart identifying the groups of flight information regions in which specific sets of SUPPS apply have been chosen in reference to ICAO region designators, but the limits of the areas of application do not necessarily coincide with the boundaries of the ICAO regions.

6. Whenever there is a specific relationship between a supplementary procedure and an Annex or PANS, such relationship has been indicated by reference to the parent document and relevant chapter, appendix, etc. These references appear above the text, together with the appropriate abbreviation as follows:

A — Annexes to the Convention  
P — Procedures for Air Navigation Services

Examples: (A2 – Chapter 3) — Refers to Chapter 3 of Annex 2 — *Rules of the Air*  
(P-ATM – Chapters 7 and 9) — Refers to Chapters 7 and 9 of Doc 4444 — *Procedures for Air Navigation Services — Air Traffic Management*.

7. The degree of non-application of the Regional Supplementary Procedures or national differences are notified in Aeronautical Information Publications in accordance with the provisions of Annex 15 — *Aeronautical Information Services* (cf. 4.1.1, 4.1.2 c) and Appendix 1).

8. This document is maintained by amendments as required. Any errors or omissions should be brought to the attention of the Secretary General, ICAO, 999 University Street, Montréal, Quebec, Canada H3C 5H7.

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# PROCEDURE FOR THE AMENDMENT OF REGIONAL SUPPLEMENTARY PROCEDURES

(Approved by Council (25-2) 20/5/55, (84-5) 7/3/75, (153-3) 25/2/98)

## 1. INTRODUCTION

1.1 Regional Supplementary Procedures are normally formulated at regional air navigation meetings and become effective after review by the Air Navigation Commission and approval by the Council.

1.2 Amendments to Regional Supplementary Procedures may be proposed by a Contracting State or group of States as set out in Section 2 or by an international organization as set out in Section 3 or may become necessary as a consequence of action by Council in adopting or amending Standards and Recommended Practices or in approving or amending Procedures for Air Navigation Services as set out in Section 4.

## 2. AMENDMENTS PROPOSED BY A CONTRACTING STATE OR GROUP OF STATES

2.1 If any Contracting State or group of States of a region wishes to propose an amendment to Regional Supplementary Procedures for that region, it should submit the proposal, adequately documented, to the Secretary General through the Regional Office accredited to that State. The proposal should include the facts that led the State to the conclusion that the amendment is necessary.

2.2 The Secretary General will circulate the proposal, adequately documented, with a request for comments to all provider and user States of the region considered affected, as well as to user States outside the region and international organizations that may be concerned with the proposal. If, however, the Secretary General considers that the proposed amendment conflicts with established ICAO policy or that it raises questions which the Secretary General considers should be brought to the attention of the Air Navigation Commission, the proposal will be first presented, adequately documented, to the Commission. In such cases, the Commission will decide on the action to be taken.

2.3 If, in reply to the Secretary General's inquiry to States and selected international organizations, no objection is raised to the proposal by a specified date, the Secretary General will circulate an amendment memorandum to Representatives on the Council and to Members of the Air Navigation Commission inviting each recipient to advise, normally within seven days,\* whether formal discussion of the proposed amendment is desired. The memorandum will explain the proposed amendment, summarize the comments received and include Secretariat comments as appropriate. If, in reply to the Secretary General's inquiry to States and selected international organizations, any objection is raised and if the objection remains after further consultation, the matter will be documented for formal consideration by the Air Navigation Commission and appropriate recommendations of the Commission to the Council.

2.4 If, at the end of the seven-day period,\* there has been no request for discussion of the amendment, it will be submitted to the President of the Council who is authorized to approve the amendment on behalf of the Council.

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\* During recess, a period of three weeks will normally be allowed.

2.5 If, on the other hand, any Representative on the Council or Member of the Air Navigation Commission indicates a desire for formal discussion of the proposed amendment, the matter will be documented for formal consideration by the Commission and appropriate recommendations of the Commission to the Council.

### 3. AMENDMENTS PROPOSED BY INTERNATIONAL ORGANIZATIONS

3.1 Proposals for the amendment of Regional Supplementary Procedures submitted by international organizations directly concerned with the operation of aircraft, which may be invited to attend suitable ICAO meetings and which attended the meeting(s) where the relevant procedures were prepared, will be dealt with in the same manner as those received from States, except that, before circulating a proposal to States and selected international organizations pursuant to 2.2, the Secretary General will ascertain whether it has adequate support from the State or group of States whose facilities, services and procedures will be affected. If such support is not forthcoming, the proposal will be presented to the Commission, and the Commission will decide on the action to be taken.

### 4. CONSEQUENTIAL AMENDMENTS

4.1 In the event of an amendment to Regional Supplementary Procedures becoming necessary as a consequence of action by Council in adopting or amending Standards and Recommended Practices or in approving or amending Procedures for Air Navigation Services, the amendment will be drafted by the Secretary General.

4.2 The Secretary General will circulate the amendment, together with relevant explanatory material, in a memorandum to each Member of the Air Navigation Commission inviting each recipient to notify him, normally within seven days,\* whether formal discussion of the proposed amendment is desired.

4.3 If, at the end of the seven-day period,\* there has been no request for discussion of the amendment, formal approval will be given by the Air Navigation Commission acting on behalf of the Council\*\* or, if the Commission is in recess, by the President of the Council.

4.4 If any Commissioner indicates a desire for formal discussion of the amendment, the matter will be documented for formal consideration by the Air Navigation Commission. If the Commission concludes that the amendment is necessary, it is authorized to approve the amendment on behalf of the Council,\*\* in its original form or modified.

### 5. PROMULGATION OF APPROVED AMENDMENTS

5.1 Amendments to Regional Supplementary Procedures that have been approved in accordance with the above procedures will be promulgated in Doc 7030, *Regional Supplementary Procedures*.

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\* During recess, a period of three weeks will normally be allowed.

\*\* The Air Navigation Commission has been authorized [17-1, Doc 7328-1, (C/853-1)] to approve consequential amendments on behalf of the Council.

## Glossary

ACAS	airborne collision avoidance systems
ACC	area control centre
ADLP	aircraft data link processor
ADS-B	automatic dependent surveillance – broadcast
ADS-C	automatic dependent surveillance – contract
AFCS	automatic flight control system
AFTN	aeronautical fixed telecommunication network
AIM	ATFM information message
AIP	aeronautical information publication
AIRAC	aeronautical information regulation and control
AIS	aeronautical information service
ANM	ATFM notification message
ANP	air navigation plan
ARO	air traffic services reporting office
ASDA	accelerate-stop distance available
ASE	altimetry system error
ASTER	ATFM system of the EUR region
ATC	air traffic control
ATFM	air traffic flow management
ATIS	automatic terminal information services
ATM	air traffic management
ATS	air traffic service
B-RNAV	basic-RNAV, also referred to as RNAV 5
CAP	Code allocation plan
CARSAMMA	CAR/SAM monitoring agency
CFMU	central flow management unit
CHG	modification message
CNL	cancellation message
CPDLC	controller-pilot data link communications
CRAM	conditional route availability message
CTA	control area
CTOT	calculated take-off time
DAP	downlink aircraft parameter
DES	de-suspension message
DME	distance-measuring equipment
DOF	date of flight
EAD	European AIS database
EOBT	estimated off-block time

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FIR	flight information region
FIS	flight information service
FL	flight level
FLAS	flight level allocation scheme
FLS	flight suspension message
FPL	flight plan
GAT	general air traffic
HF	high frequency
IFBP	in-flight broadcast by pilots
IFF	identification friend/foe
IFPS	initial flight plan processing system
IFR	instrument flight rules
IGA	international general aviation
INS	inertial navigation system
LAM	logical acknowledgement message
LSA	localizer sensitive area
LVP	low visibility procedures
MASPS	minimum aviation system performance standards
MFA	minimum flight altitude
MNPS	minimum navigation performance specifications
MSA	minimum sector altitude
NOF	NOTAM offices
NOTAM	notice to airmen
OCA	oceanic control area
OTS	organized track system
PACOTS	Pacific organized track systems
PBN	performance-based navigation
PIB	pre-flight information bulletin
P-RNAV	precision-RNAV
RFP	replacement flight plan
RNAV	area navigation
RNAV 1	An RNAV specification having a lateral navigation accuracy of 1 nautical mile. RNAV 1 approved aircraft are approved for P-RNAV.
RNAV 5	An RNAV specification having a lateral navigation accuracy of 5 nautical miles. RNAV 5 is also referred to as B-RNAV in the EUR.
RNP	required navigation performance
RPL	repetitive flight plan



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RTF	radiotelephony
RVR	runway visual range
RVSM	reduced vertical separation minimum
SAM	slot allocation message
SRM	slot revision message
SATMA	South Atlantic monitoring agency
SAT NAV	satellite navigation
SATCOM	satellite communication
SD	standard deviation
SELCAL	selective calling
SID	standard instrument departure
SIF	selective identification feature
SLC	slot cancellation message
SLOP	strategic lateral offset procedures
SSR	secondary surveillance radar
STAR	standard instrument arrival
STS	special handling
TA	transition altitude
TAS	true airspeed
TLS	target level of safety
TMA	terminal control area
TODA	take-off distance available
TORA	take-off run available
TVE	total vertical error
UAC	upper area control centre
UIR	upper flight information region
VSM	vertical separation minimum
VFR	visual flight rules
VOLMET	meteorological information for aircraft in flight
VOR	VHF omnidirectional radio range
WATRS	West Atlantic Route System

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# Chapter 1. FLIGHT RULES

## 1.1 VISUAL FLIGHT RULES (VFR)

### 1.1.1 Special application

Nil.

## 1.2 INSTRUMENT FLIGHT RULES (IFR)

(A2 – Chapters 2 and 5)

*Note.— Annex 2, 2.2, permits a flight to operate using either instrument flight rules or visual flight rules when operated in visual meteorological conditions subject to the limitations listed in Chapter 4 of the Annex. The following indicates certain additional restrictions.*

### 1.2.1 Special application

1.2.1.1 Flights shall be conducted in accordance with the instrument flight rules when operated at or above flight level (FL) 60 or 600 m (2 000 ft) above ground, whichever is the higher, within:

- a) the New York Oceanic, Gander Oceanic, Shanwick Oceanic, Santa Maria Oceanic, Søndrestrøm and Reykjavik flight information regions (FIRs); and
- b) the Bodø Oceanic FIR when operated more than 185 km (100 NM) seaward from the shoreline.

### 1.2.2 Flight level changes

Nil.

## 1.3 AIR TRAFFIC ADVISORY SERVICE

Nil.

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## Chapter 2. FLIGHT PLANS

### 2.1 CONTENT – GENERAL

(A2 – Chapter 3; P-ATM – Chapter 4 and Appendix 2)

#### 2.1.1 Date of flight

Nil.

#### 2.1.2 Area navigation (RNAV) specifications

2.1.2.1 All RNAV 10 (RNP 10) approved aircraft intending to operate in the NAT Region shall insert the letter R in Item 10a of the flight plan and the A1 descriptor in Item 18 of the flight plan, following the PBN/indicator.

#### 2.1.3 Required navigation performance (RNP) specifications

2.1.3.1 All RNP 4 approved aircraft intending to operate in the NAT Region shall insert the letter R in Item 10a of the flight plan and the L1 descriptor in Item 18 of the flight plan, following the PBN/indicator.

#### 2.1.4 Minimum navigation performance specifications (MNPS)

2.1.4.1 All MNPS-approved aircraft intending to operate in the NAT Region shall insert the letter X in Item 10a of the flight plan.

*Note.— Refer to 4.1.1.5.1 for area of applicability and means of compliance.*

#### 2.1.5 Reduced vertical separation minimum (RVSM)-approved aircraft

2.1.5.1 All RVSM approved aircraft intending to operate in the NAT Region, regardless of the requested flight level, shall insert the letter W in Item 10a of the flight plan.

#### 2.1.6 Non-RVSM-approved aircraft

Nil.

#### 2.1.7 Non-RVSM-approved State aircraft

Nil.

### 2.1.8 Indication of 8.33 kHz channel spacing capability

Nil.

### 2.1.9 Route

#### 2.1.9.1 General

2.1.9.1.1 Flights conducted wholly or partly outside the organized tracks shall be planned along great circle tracks joining successive significant points. Flight plans shall be made in accordance with the following.

2.1.9.1.2 Flights operating between North America and Europe shall generally be considered as operating in a predominantly east-west direction. However, flights planned between these two continents via the North Pole shall be considered as operating in a predominantly north-south direction.

#### 2.1.9.2 Flights operating predominantly in an east-west direction

2.1.9.2.1 For flights operating at or south of 70°N, the planned tracks shall normally be defined by significant points formed by the intersection of half or whole degrees of latitude with meridians spaced at intervals of 10 degrees from the Greenwich meridian to longitude 70°W.

2.1.9.2.2 For flights operating north of 70°N and at or south of 80°N, the planned tracks shall normally be defined by significant points formed by the intersection of parallels of latitude expressed in degrees and minutes with meridians normally spaced at intervals of 20 degrees from the Greenwich meridian to longitude 60°W, using the longitudes 000W, 020W, 040W and 060W.

2.1.9.2.3 For flights operating at or south of 80°N, the distance between significant points shall, as far as possible, not exceed one hour's flight time. Additional significant points should be established when deemed necessary due to aircraft speed or the angle at which the meridians are crossed, e.g.:

- a) at intervals of 10 degrees of longitude (between 5°W and 65°W) for flights operating at or south of 70°N; and
- b) at intervals of 20 degrees of longitude (between 10°W and 50°W) for flights operating north of 70°N and at or south of 80°N.

2.1.9.2.4 When the flight time between successive significant points referred to in 2.1.9.2.3 is less than 30 minutes, one of these points may be omitted.

2.1.9.2.5 For flights operating north of 80°N, the planned tracks shall be defined by points of intersection of parallels of latitude expressed in degrees and minutes with meridians expressed in whole degrees. The distance between significant points shall normally equate to not less than 30 and not more than 60 minutes of flying time.

#### 2.1.9.3 Flights operating predominantly in a north-south direction

2.1.9.3.1 For flights whose flight paths at or south of 80°N are predominantly oriented in a north-south direction, the planned tracks shall normally be defined by significant points formed by the intersection of whole degrees of longitude with specified parallels of latitude which are spaced at intervals of 5 degrees.

2.1.9.3.2 For flights operating north of 80°N, the planned tracks shall be defined points of intersection of parallels of latitude expressed in degrees and minutes with meridians expressed in whole degrees. The distance between significant points shall normally equate to not less than 30 and not more than 60 minutes of flying time.

#### 2.1.9.4 Flights operating on an organized track

2.1.9.4.1 For flights conducted along one of the organized tracks from the entry point into the NAT FIRs to the exit point, the organized track shall be defined in the flight plan by the abbreviation "NAT" followed by the code letter assigned to the track.

#### 2.1.9.5 Flights operating along fixed ATS routes

2.1.9.5.1 For flights operating along the fixed ATS route network between Canada, the United States, Bermuda and the CAR Region, the track shall be defined by appropriate reference to this route network.

### 2.1.10 Estimated times

2.1.10.1 The accumulated estimated elapsed time to each oceanic FIR boundary shall be specified in Item 18 of the flight plan.

### 2.1.11 Mach number

2.1.11.1 For turbo-jet aircraft intending to operate within the Bodø Oceanic, Gander Oceanic, New York Oceanic, Reykjavik, Santa Maria Oceanic and Shanwick Oceanic control areas, the planned true Mach number for any portion of their flight within these control areas shall be specified in Item 15 of the flight plan.

### 2.1.12 Alternative flight level

2.1.12.1 For turbo-jet aircraft intending to operate within the Gander Oceanic, New York Oceanic, Reykjavik, Santa Maria Oceanic and Shanwick Oceanic control areas, requests for a suitable alternative flight level may be included in Item 18 of the flight plan.

### 2.1.13 Special handling (STS)

Nil.

### 2.1.14 Data link services

2.1.14.1 All aircraft planning to operate in the NAT Region and intending to use data link services shall insert the appropriate descriptor (J2, J5 or J7) in Item 10a of the flight plan to indicate FANS 1/A interoperable equipment.

### 2.1.15 Automatic Dependent Surveillance – Broadcast (ADS-B)

2.1.15.1 All ADS-B approved aircraft intending to operate in the NAT Region shall insert either the B1 or B2 descriptor as appropriate in Item 10b of the flight plan.

*Note.— Eligibility for ADS-B service in the NAT Region is based upon the compliance considerations of the*

European Aviation Safety Agency (EASA) AMC 20-24 or equivalent.

### **2.1.16 Aircraft Registration and Aircraft Address**

2.1.16.1 All aircraft intending to operate in the NAT Region shall insert the nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7 of the flight plan, and, if available, the aircraft address (expressed in the form of an alphanumerical code of six hexadecimal characters) in Item 18 of the flight plan, following respectively the REG/ and CODE/ indicator.

## **2.2 CONTENT – AIR TRAFFIC FLOW MANAGEMENT (ATFM)**

### **2.2.1 Runway visual range (RVR)**

Nil.

### **2.2.2 Flight plan addressing and distribution**

Nil.

### **2.2.3 Slot allocation exemptions**

Nil.

## **2.3 SUBMISSION**

(A2 – Chapter 3; P-ATM – Chapter 4)

### **2.3.1 General**

2.3.1.1 Flight plans for flights departing from points within adjacent regions and entering the NAT Region without intermediate stops shall be submitted as early as possible.

### **2.3.2 Amendments**

Nil.

## **2.4 REPETITIVE FLIGHT PLANS (RPLs)**

Nil.





## Chapter 3. COMMUNICATIONS

### 3.1 AIR-GROUND COMMUNICATIONS AND IN-FLIGHT REPORTING

#### 3.1.1 Communications equipment

Nil.

#### 3.1.2 Continuous listening watch in uncontrolled airspace

Nil.

#### 3.1.3 Position reports

(A2 – Chapters 3 and 5; P-ATM – Chapter 4)

3.1.3.1 Unless otherwise required by air traffic services, position reports for flights on routes not defined by designated reporting points shall be made at the significant points listed in the flight plan.

3.1.3.2 Air traffic services may require any flight operating predominantly in an east-west direction to report its position at any of the intermediate meridians spaced at intervals of:

- a) 10 degrees of longitude south of 70°N (between 5°W and 65°W); and
- b) 20 degrees of longitude north of 70°N (between 10°W and 50°W).

3.1.3.3 In requiring aircraft to report their position at intermediate intervals, the air traffic services authorities will be guided by the requirement to have position information at approximately hourly intervals and also by the need to cater for varying types of aircraft and for varying traffic and meteorological conditions.

#### Position and time

3.1.3.4 Verbal position reports shall be identified by the spoken word “Position” transmitted immediately before or after the aircraft identification.

3.1.3.5 For flights outside the ATS route network, the position shall be expressed in terms of latitude and longitude as follows:

- a) for flights operating in a predominantly east-west direction:
  - 1) latitude in degrees and minutes; and
  - 2) longitude in degrees only;

b) for flights operating in a predominantly north-south direction:

- 1) latitude in degrees only; and
- 2) longitude in degrees and minutes.

3.1.3.6 When making position reports, all times should be expressed in four digits, giving both the hour and minutes.

#### **Time over next position**

3.1.3.7 If the estimated time for the next position last reported to air traffic control is found to be in error by three minutes or more, a revised estimated time over shall be transmitted as soon as possible to the ATS unit concerned.

#### **Transmission**

(P-ATM – Chapter 4)

3.1.3.8 Position reports made by aircraft operating within an oceanic control area at a distance of 110 km (60 NM) or less from the common boundary with an adjacent oceanic control area, including aircraft operating on tracks through successive points on such boundary, shall also be made to the area control centre serving the adjacent control area.

3.1.3.9 Responsibility for the transmission of position reports to the additional ATS units specified in 3.1.3.8 may be delegated to the appropriate communications station(s) through local arrangements.

#### **3.1.4 Abbreviated position reports**

Nil.

#### **3.1.5 Read-back of VHF channels**

Nil.

### **3.2 MANDATORY CARRIAGE OF 8.33 KHZ CHANNEL SPACING CAPABLE RADIO EQUIPMENT**

Nil.

### **3.3 CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)**

#### *Area of applicability*

3.3.1 All aircraft intending to conduct flights in the airspace defined below shall be fitted with and shall operate controller-pilot data link communications (CPDLC) equipment:

- a) from 7 February 2013, on specified tracks and flight levels within the NAT organized track system (OTS); and



- b) from 5 February 2015, in specified portions of NAT minimum navigation specifications (MNPS) airspace.

*Note 1.— The specified tracks and flight level band within the NAT OTS will be published by the States concerned in national AIPs and identified daily in the NAT track message.*

*Note 2.— The specified portions of NAT MNPS airspace and aircraft equipment performance requirements where applicable will be published by the States concerned in national AIPs.*

#### *Means of compliance*

3.3.2 Operators intending to conduct flights within the airspace specified in 3.3.1 shall obtain CPDLC operational authorization, where applicable, either from the State of Registry or the State of the Operator. The State of Registry or the State of the Operator shall verify that the equipment has been certified in accordance with the requirements specified in RTCA DO-258/EUROCAE ED-100 or equivalent, capable of operating outside VHF data link coverage.

3.3.3 The services provided within the airspace specified in 3.3.1 shall comply with the Oceanic Safety and Performance Requirements as specified in RTCA DO-306/EUROCAE ED-122 or equivalent.

*Note.— Additional guidance can be found in the ICAO Global Operational Data Link Document (GOLD).*

### **3.4 SATELLITE COMMUNICATION (SATCOM)**

(A2 – Chapter 3; P-ATM – Chapter 15; P-OPS, Vol. 1)

3.4.1 Within the Bodø Oceanic, Gander Oceanic, New York Oceanic, Reykjavik, Santa Maria Oceanic and Shanwick Oceanic control areas, aircraft with installed aeronautical mobile satellite (route) services (AMS(R)S) voice equipment, may use such equipment for additional ATS communications capability, provided the following requirements are met:

- a) the equipment shall be approved by the State of the Operator or the State of Registry;
- b) the equipment shall be operated in accordance with the provisions of the respective AIPs;
- c) pilots shall operate SELCAL in accordance with Section 3.5.1 or maintain a listening watch on the assigned HF frequency; and
- d) AMS(R)S voice communications should be made to aeronautical stations rather than ATS units unless the urgency of the communication dictates otherwise.

*Note 1.— AMS(R)S voice communication initiated due to HF propagation difficulties does not constitute urgency. Dedicated AMS(R)S voice telephone numbers (short codes) for air-ground radio facilities and air traffic control facilities are published in national AIPs where approved.*

*Note 2.— AMS(R)S voice is not a replacement for ADS-C, CPDLC or HF communications, but rather a means of reducing the risk of communications failure, improving the safety of operations and alleviating HF congestion. AMS(R)S voice provides an additional discrete communications medium and potential minimum equipment list (MEL) relief because States approving reduced carriage requirements for HF radio may allow aircraft to operate with only one serviceable HF radio.*

### 3.5 AERONAUTICAL MOBILE SERVICE

#### 3.5.1 Selective calling (SELCAL)

3.5.1.1 While operating in an HF air-ground communications environment, pilots shall maintain a listening watch on the assigned radio frequency. This will not be necessary, however, if a SELCAL watch is maintained and correct operation is ensured. Correct SELCAL operation shall be ensured by:

- a) the inclusion of the SELCAL code in the flight plan;
- b) the issue of a correction to the SELCAL code if subsequently altered due to change of aircraft or equipment; and
- c) an operational check of the SELCAL equipment with the appropriate radio station at or before initial entry into oceanic airspace. This SELCAL check must be completed successfully before commencing a SELCAL watch.

*Note.— A SELCAL watch on the assigned radio frequency should be maintained, even in areas of the region where VHF coverage is available and used for air-ground communications.*

#### 3.5.2 HF operations

(A10, Vol. II – Chapter 5)

##### 3.5.2.1 Assignment of voice traffic to HF families

3.5.2.1.1 Procedures for the distribution of the NAT HF air-to-ground message traffic of the users on the NAT routes between the various NAT HF families are indicated in Table 1.

*Note.— Use of the NAT-D radiotelephony network frequencies is extended to the Arctic area of the Anchorage Arctic FIR, via Gander Radio.*

3.5.2.1.2 In the event of overloading of a family or for other operational reasons, stations should not assign a frequency from an alternate family to aircraft flying routes outside the areas defined in Table 1, without prior coordination and agreement of other network stations, in order to minimize adverse impact on existing sub-network traffic.

**Table 1. Procedures for the distribution of NAT HF air-to-ground message traffic**

<i>HF NAT family</i>	<i>Route or portion of route flown</i>	<i>Radio stations</i>	<i>Remarks</i>
D	Aircraft flying routes with reporting point coordinates north of 62°N	Bodø Gander Iceland Shanwick	During off-peak periods and when watch is reduced on other families, Family D should remain the primary assignment for aircraft flying north of 62°N.
B and C	Aircraft flying routes with reporting point coordinates between 47°N and 64°N	Gander Iceland Shanwick	In order to ensure even peak-time distribution of traffic between Family B and C, aircraft may be assigned to either family on the basis of State of Registry, airline company or other such criteria as agreed between Shanwick Radio and Gander Radio.
F	Aircraft flying routes entirely within the Gander and Shanwick areas	Gander Shanwick	Hours of operation of Family F shall be coordinated on a tactical basis between Shanwick Radio and Gander Radio.
A	Aircraft flying routes with reporting point coordinates between 43°N and 47°N	Gander New York Santa Maria Shanwick	During off-peak periods and when watch is reduced on other families, Family A should remain the primary assignment for aircraft flying south of 43°N.
E	Aircraft flying routes with reporting point coordinates south of 43°N	New York Santa Maria	During off-peak periods and in the case of reduction of the number of available families, the guard of this family should be discontinued.

### 3.5.2.2 Procedures for mutual assistance

3.5.2.2.1 NAT radio stations shall function as a network and render assistance to each other and all aircraft as necessary, in accordance with Annex 10, Volume II.

### 3.5.2.3 Procedures to follow when unable to obtain an oceanic clearance using HF communications

(P-ATM – Chapter 15)

3.5.2.3.1 Aircraft experiencing radio communication failure shall maintain their current flight level, route and speed to the Oceanic exit point. Thereafter, it shall follow the radio communication failure procedure applicable for that airspace.

*Note.— In this context, the current flight level is the last cleared level unless the preceding units' radio communication failure procedure dictates otherwise. In all cases, aircraft should stay in level flight in the oceanic area. Current speed should be the initial oceanic Mach number in the flight plan, if the aircraft does not have a speed clearance.*

### **3.6 AERONAUTICAL FIXED SERVICE**

#### **3.6.1 AFTN rationalization**

Nil.

### **3.7 RADIO CHANNELS/FREQUENCIES**

Nil.

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# Chapter 4. NAVIGATION

## 4.1 PERFORMANCE-BASED NAVIGATION (PBN)

*Note.— As the North Atlantic (NAT) Region transitions to PBN as contained in the Performance-based Navigation (PBN) Manual (Doc 9613), the contents of 4.1 will be amended. Doc 9613 provides guidance on aircraft, operations and maintenance programmes for the initial achievement and continued compliance with the authorized navigation specification.*

### 4.1.1 Area navigation (RNAV) specifications

#### 4.1.1.1 RNAV 10 (RNP 10)

*Note.— RNAV 10 retains the RNP 10 designation, as specified in Doc 9613, 1.2.3.5.*

4.1.1.1.1 The RNAV 10 (RNP 10) specification shall be applicable to navigation systems used to support the separation minima specified in 6.2.1.1b), 6.2.1.1 c) and 6.2.2.2 a) when published in State AIPs. Additionally, the navigation performance shall be measured to ensure that the following criteria are met in order for this separation minima to be utilized in the New York Oceanic East FIR and Santa Maria Oceanic FIR:

- a) The proportion of the total flight time spent by aircraft 46km (25NM) or more off the cleared track shall be less than  $9.11 \times 10^{-5}$ ; and
- b) The proportion of the total flight time spent by aircraft between 74 and 111 km (40 and 60 NM) off the cleared track shall be less than  $1.68 \times 10^{-5}$

#### *Means of compliance*

4.1.1.1.2 The aircraft and operator must be approved RNAV 10 (RNP 10) by the State of the Operator or the State of Registry, as appropriate.

~~4.1.1.1.3 Operator programmes shall be established to mitigate the occurrence of navigation errors due to equipment malfunction or operational error:~~

- ~~a) operator in flight operating drills shall include mandatory navigation cross-checking procedures to identify navigation errors in sufficient time to prevent aircraft from inadvertent deviation from ATC cleared route; and~~
- ~~b) the operator shall establish programmes to provide for the continued airworthiness of aircraft navigation systems necessary to navigate to the degree of accuracy required.~~

4.1.1.1.3 When granting RNAV 10 (RNP 10) approvals for operators that intend to operate in the NAT Region, States shall take account of the RNAV 10 (RNP 10) time limits for aircraft equipped with dual INS or inertial reference unit (IRS) systems.

*Note.— RNAV 10 (RNP 10) time limits are discussed in the Performance-based Navigation (PBN) Manual (Doc 9613) Part B, Volume II, Chapter 1.*

**4.1.1.2 RNAV 5**

Nil.

**4.1.1.3 RNAV 2**

Nil.

**4.1.1.4 RNAV 1**

Nil.

**4.1.1.5 Pre-PBN navigation specifications***4.1.1.5.1 Minimum navigation performance specifications (MNPS)**Area of applicability*

4.1.1.5.1.1 The MNPS shall be applicable in that volume of airspace between FL 285 and FL 420 within the Oceanic Control Areas of ~~Santa Maria, Shanwick, Reykjavik, Bodø Oceanic, Gander Oceanic, and New York Oceanic East, Reykjavik, Santa Maria and Shanwick,~~ excluding the ~~area west of 60°W and south of 38°30'N~~ ~~NBrest Oceanic Transition Area (BOTA) and the Shannon Oceanic Transition Area (SOTA).~~

*Note.— This volume of airspace is referred to as the “MNPS airspace”.* *The volumes of airspace in 4.1.1.5.1.1 are referred to as the “North Atlantic High Level Airspace (NAT HLA), part of which were previously referred to as the “North Atlantic Minimum Navigation Performance Specifications Airspace (NAT MNPSA)”.*

*Means of compliance*

(A2 – Chapter 5; A6, Part I – Chapters 3, 4 and 7; A6, Part II – Chapters 3 and 7; A8 – Chapter 8)

~~4.1.1.5.1.2 Except for those flights specified in 4.1.1.5.1.8, aircraft operating within the volume of airspace specified in 4.1.1.5.1.1 shall have lateral navigation performance capability such that:~~

- ~~———— a) the standard deviation of lateral track errors shall be less than 11.7 km (6.3 NM);~~
- ~~———— b) the proportion of the total flight time spent by aircraft 56 km (30 NM) or more off the cleared track shall be less than  $5.3 \times 10^{-4}$ ; and~~
- ~~———— c) the proportion of the total flight time spent by aircraft between 93 and 130 km (50 and 70 NM) off the cleared track shall be less than  $1.3 \times 10^{-4}$ .~~

~~4.1.1.5.1.3 The State of Registry or the State of the Operator, as appropriate, should verify that the lateral navigation capability of approved aircraft meets the requirements specified in 4.1.1.5.1.2.~~

~~———— Note. Guidance material of use to those involved in the initial achievement and continued maintenance~~

~~of the navigation capability set forth in 4.1.1.5.1.2 has been issued by ICAO under the title North Atlantic Operations and Airspace Manual (NAT Doc 007) and will be supplemented and updated as required and as new material becomes available.~~

~~4.1.1.5.1.4 Aircraft that have been approved by the State of Registry or the State of the Operator, as appropriate, for RNP 10 (PBN application of RNAV 10) or RNP 4 are considered to meet the requirements specified in 4.1.1.5.1.2 a).~~

~~————— Note. ——— The Performance-based Navigation (PBN) Manual (Doc 9613) provides guidance on aircraft approval, operations and maintenance programmes for initial achievement and continued compliance with RNAV 10 (Designated and Authorized as RNP 10) and RNP 4.~~

~~4.1.1.5.1.5 From 1 January 2015 the means of compliance for demonstrating performance to 4.1.1.5.1.2 a) above shall be in accordance with the RNAV 10 or RNP 4 navigation specifications as detailed in the Performance Based Navigation Manual (Doc 9613). Aircraft that have been MNPS approved by the State of Registry or the State of the Operator based on standard deviation of lateral track error of 11.7 km (6.3 NM) before 1 January 2015 shall be permitted to operate in NAT MNPS airspace until 1 January 2020.~~

~~4.1.1.5.1.6 When granting approval for operations in MNPS airspace, States should take account of the RNP 10 time limits for aircraft equipped with dual INS or inertial reference unit (IRU) systems.~~

~~————— Note. ——— RNP 10 time limits are discussed in (Doc 9613) Part B, Volume II, Chapter 1.~~

4.1.1.5.1.2 Aircraft that have been MNPS approved before 1 January 2015 based on standard deviation of lateral track error of 11.7 km (6.3 NM) by the State of Registry or the State of the Operator shall be permitted to operate in NAT HLA until 30 January 2020.

4.1.1.5.1.3 Only aircraft approved for RNP 4 or RNAV 10 (RNP 10) shall be eligible for a new MNPS specific approval.

4.1.1.5.1.74 When granting MNPS specific approvals for operations in MNPS airspace NAT HLA, the State of Registry or the State of the Operator, as appropriate, shall ensure that: in-flight operating drills include mandatory navigation cross-checking procedures which will identify navigation errors in sufficient time to prevent the aircraft inadvertently deviating from the ATC cleared route. Guidance on procedures is detailed in NAT Doc 007:

- a) in-flight operating drills include mandatory navigation cross-checking procedures which will identify navigation errors in sufficient time to prevent the aircraft inadvertently deviating from the ATC-cleared route. Guidance on procedures is detailed in NAT Doc 007;
- b) the operator has established programmes to provide for the continued airworthiness of aircraft navigation systems necessary to navigate to the degree of accuracy required;
- c) the operator has established procedures to ensure flight crews have adequate knowledge of the current provisions regarding:
  - i) the position reporting procedures detailed in 3.1.3;
  - ii) mandatory carriage of the NAT OTS message as detailed in 6.4.1.2; and
  - iii) the NAT special procedures detailed in Chapter 9.

Note 1.— Guidance material of use to those who intend to operate aircraft in the ICAO NAT Region is provided in the North Atlantic Operations and Airspace Manual (NAT Doc 007).

Note 2.— The Performance-based Navigation (PBN) Manual (Doc 9613) provides guidance on aircraft, operations and maintenance programmes for the initial achievement and continued compliance with the authorized

**navigation specification, including programmes for avoiding navigational errors.**

4.1.1.5.1.8 Flights not subject to an Oceanic Clearance, which flight plan to route through Brest Oceanic Transition Area (BOTA) and/or Shannon Oceanic Transition Area (SOTA), are not subject to MNPS approval.

~~————— Note 1. SOTA is defined as that airspace from DINIM (510000N 0150000W) — LESLU (510000N 0080000W) — 483000N 0080000W — BEDRA (490000N 0150000W) to DINIM (510000N 0150000W).~~

~~————— Note 2. BOTA is defined as that airspace from 483400N 0084500W — 483000N 0080000W — 450000N 0080000W — 450000N 0084500W to 483400N 0084500W.~~

## 4.1.2 Required navigation performance (RNP) specifications

### 4.1.2.1 RNP 4

4.1.2.1.1 The RNP 4 specification shall be applicable to navigation systems used to support the separation minima specified in **6.2.1.1a), 6.2.1.1b) 6.2.1.1 c), 6.2.2.2 a) and 6.2.2.2 b)** when published in State AIPs. Additionally, the navigation performance shall be measured to ensure that the following criteria are met in order for this separation minima to be utilized in the New York Oceanic East FIR and Santa Maria Oceanic FIR:

- 1) ~~the proportion of the total flight time spent by aircraft 28 km (15 NM) or more off the cleared track shall be less than  $5.44 \times 10^{-5}$ ; and~~
- 2) ~~the proportion of the total flight time spent by aircraft between 44 and 67 km (24 and 36 NM) off the cleared track shall be less than  $1.01 \times 10^{-5}$ .~~

#### *Means of compliance*

4.1.2.1.2 The aircraft and operator shall be approved RNP 4 by the State of the Operator or the State of Registry, as appropriate.

~~4.1.2.1.3 Operator programmes shall be established to mitigate the occurrence of navigational errors due to equipment malfunction or operational error:~~

- ~~a) operator in-flight operating drills shall include mandatory navigation cross-checking procedures to identify navigation errors in sufficient time to prevent aircraft from inadvertent deviation from ATC-cleared route; and~~
- ~~b) the operator shall establish programmes to provide for the continued airworthiness of aircraft navigation systems necessary to navigate to the degree of accuracy required.~~

### 4.1.2.2 Basic RNP 1

Nil.

### 4.1.2.3 Advanced RNP 1

Nil.



## 4.2 REDUCED VERTICAL SEPARATION MINIMUM (RVSM)

### Area of applicability

4.2.1 RVSM shall be applicable in that volume of airspace between FL 290 and FL 410 inclusive in all FIRs of the NAT Region.

### Means of compliance

(A2 – Chapter 5 and Appendix 3; A6, Part I – Chapters 3, 4 and 7;  
A6, Part II – Chapters 3 and 7; A8, Part IIIA – Chapter 8, A11 – Chapter 2)

4.2.2 Operators intending to conduct flights within the NAT Region where RVSM is applied shall require an RVSM approval either from the State of Registry or the State of the Operator. The State of Registry or the State of the Operator, as appropriate, should verify that the height-keeping performance capability of approved aircraft meets the requirements specified in Annex 6, Parts I and II.

*Note.— Guidance material of use to those involved in the initial achievement and continued maintenance of the height-keeping performance has been issued by ICAO under the title North Atlantic Operations and Airspace Manual (NAT Doc 007) and will be supplemented and updated as required and as new material becomes available.*



# **Chapter 5. SURVEILLANCE**

## **5.1 SECONDARY SURVEILLANCE RADAR (SSR)** (P-ATM – Chapter 8; P-OPS, Vol. I )

### **5.1.1 Carriage of pressure-altitude reporting SSR transponders**

5.1.1.1 All aircraft operating as IFR flights in the NAT Region shall be equipped with a pressure-altitude reporting SSR transponder.

### **5.1.2 Code allocation methodology**

Nil.

### **5.1.3 Assignment of SSR codes**

Nil.

### **5.1.4 Operation of pressure-altitude reporting SSR transponders**

5.1.4.1 Unless otherwise directed by ATC, pilots of aircraft equipped with SSR flying in NAT FIRs shall retain the last assigned identity (Mode A) code for a period of 30 minutes after entry into NAT airspace.

### **5.1.5 Monitoring of SSR-derived information**

Nil.

## **5.2 SSR MODE S**

### **5.2.1 Carriage and operation of SSR Mode S**

Nil.

### **5.2.2 Transition between Mode A/C and Mode S**

Nil.

### 5.3 AIRBORNE COLLISION AVOIDANCE SYSTEMS (ACAS)

#### 5.3.1 Carriage and operation of ACAS II

(A2 – Chapter 3; A6, Part I – Chapter 6; A6, Part II – Chapter 3.6; A10, Vol. IV;  
A11 – Chapter 2; P-OPS, Part III, Vol. I; P-ATM – Chapters 4 and 10)

Nil.

### 5.4 AUTOMATIC DEPENDENT SURVEILLANCE – CONTRACT (ADS-C)

#### *Area of applicability*

5.4.1 All aircraft intending to conduct flights in the airspace defined below shall be fitted with and shall operate automatic dependent surveillance – contract (ADS-C) equipment:

- a) from 7 February 2013, on specified tracks and on specified flight levels within the NAT organized track system (OTS); and
- b) from 5 February 2015, in specified portions of NAT minimum navigation specifications (MNPS) airspace.

*Note 1.— The specified tracks and flight level band within the NAT OTS will be published by the States concerned in national AIPs and identified daily in the NAT track message.*

*Note 2.— The specified portions of NAT MNPS airspace and aircraft equipment performance requirements, where applicable, will be published by the States concerned in national AIPs.*

#### *Means of compliance*

5.4.2 Operators intending to conduct flights within the airspace specified in 5.4.1 shall obtain an ADS-C operational authorization, where applicable, either from the State of Registry or the State of the Operator. The State of Registry or the State of the Operator shall verify that the equipment has been certified in accordance with the requirements specified in RTCA DO-258/EUROCAE ED-100 or equivalent, capable of operating outside VHF data link coverage.

5.4.3 The data link services provided within the NAT airspace shall comply with the Oceanic Safety and Performance Requirements as specified in RTCA DO-306/EUROCAE ED-122 or equivalent. Conformance monitoring shall provide alerts to the controller when reports do not match the current flight plan, and the following ADS contracts shall be used:

- a) ADS periodic contracts at an interval consistent with safety requirements and published by the States concerned in national AIPs; and
- b) ADS event contracts that include the following event types:
  - 1) lateral deviation event (LDE) with a lateral deviation threshold of 9.3 km (5 NM) or less;

- 2) level range deviation event (LRDE) with a vertical deviation threshold of 90 m (300 ft) or less; and
- 3) waypoint change event (WCE) at compulsory reporting points.

*Note.— Additional guidance can be found in the ICAO Global Operational Data Link Document (GOLD).*

## 5.5 AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST (ADS-B)

5.5.1 The procedures contained in 5.5.2 shall be applicable in those portions of the following FIRs where an ADS-B based ATS surveillance service is provided:

Reykjavik FIR, Søndrestrøm FIR, Bodø FIR, Gander Oceanic FIR, New York Oceanic East FIR and Santa Maria Oceanic FIR.

5.5.2 An aircraft carrying 1090 MHz extended squitter (1090ES) ADS-B equipment shall disable ADS-B transmission unless:

- a) the aircraft emits position information of an accuracy and integrity consistent with the transmitted values of the position quality indicators; or
- b) the aircraft always transmits a value of 0 (zero) for one or more of the position quality indicators (NUCp, NIC, NAC or SIL), when the requirements of a) above cannot be met; or
- c) the operator has received an exemption granted by the appropriate ATS authority.

*Note.— The following documents provide guidance for the installation and airworthiness approval of ADS-B OUT system in aircraft and ensure compliance with a) above:*

1. *European Aviation Safety Agency (EASA) AMC 20-24; or*
2. *FAA AC No. 20-165A – Airworthiness Approval of ADS-B; or*
3. *Configuration standards reflected in Appendix XI of Civil Aviation Order 20.18 of the Civil Aviation Safety Authority of Australia.*

5.5.3 Downlinked ADS-B data shall not be used by the ATC system for determining aircraft position when any of the position quality indicators (NUCp, NIC, NAC or SIL) have a value of 0 (zero).



## Chapter 6. AIR TRAFFIC SERVICES

### 6.1 AIR TRAFFIC CONTROL (ATC) CLEARANCES

#### 6.1.1 Content

(A11 – Chapter 3; P-ATM – Chapters 4 and 11)

6.1.1.1 An abbreviated clearance shall only be issued by ATS when clearing an aircraft to follow one of the organized tracks throughout its flight within the NAT control areas or when clearing an aircraft to follow its flight plan route. In all other circumstances, full details of the cleared track shall be specified in the clearance message.

6.1.1.2 When an abbreviated clearance is issued to follow one of the organized tracks, it shall include:

- a) cleared track specified by the track code;
- b) cleared flight level(s);
- c) cleared true Mach number (if required); and
- d) if the aircraft is designated to report meteorological information in flight, the phrase “SEND MET REPORTS”.

6.1.1.3 On receipt of an abbreviated clearance, the pilot shall read back the contents of the clearance message. In addition, when cleared to follow one of the organized tracks, the pilot shall read back full details of the track specified by the code letter, except where alternative procedures using VHF techniques exist which include provision for the confirmation of cleared track by the pilot.

6.1.1.4 When an abbreviated clearance is issued to follow the flight plan route, it shall only be issued using direct controller-pilot communication and shall include:

- a) the expression “cleared via flight planned route”;
- b) cleared flight level(s); and
- c) cleared true Mach number (if required).

6.1.1.5 On receipt of an abbreviated clearance, the pilot shall read back the contents of the clearance message. In addition, when cleared via “flight planned route”, the pilot shall read back full details of the flight plan route.

6.1.1.6 A pilot-in-command shall, if at any time in doubt, request a detailed description of the route from ATS.

### 6.1.2 Adherence

(A2 – Chapter 3)

6.1.2.1 If an aircraft has inadvertently deviated from the route specified in its ATC clearance, it shall forthwith take action to regain such route within 185 km (100 NM) from the position at which the deviation was observed.

#### 6.1.2.2 Unable to obtain oceanic clearance using HF voice

(P-ATM – Chapter 15)

6.1.2.2.1 Aircraft operating outside VHF coverage that are unable to contact ATC on HF to obtain an Oceanic clearance shall continue to operate at the last assigned flight level and along the cleared route of flight until communications are re-established.

*Note.— Failure of HF communications often stems from poor signal propagation, frequently because of sun spot activity, and is likely to simultaneously affect multiple aircraft operating in a particular region. ATM systems dependent on HF are designed around the assumption that communication may be temporarily interrupted and that aircraft affected will continue to operate in accordance with the last received and acknowledged clearance, until communication is restored.*

## 6.2 SEPARATION

### 6.2.1 Lateral

(A11 – Attachment B; P-ATM – Chapter 5)

6.2.1.1 Minimum lateral separation shall be:

- a) 55.5 km (30NM) between aircraft operating within the control area of the New York Oceanic **East** FIR and **Santa Maria Oceanic FIR** provided that the following conditions are met:
  - 1) navigation – RNP4 specification in accordance with the provisions of 4.1.2.1;
  - 2) communication – CPDLC shall be monitored against RCP 24; and
  - 3) surveillance – ADS-C shall be monitored against RSP 180.

*Note – Guidance concerning RCP and RSP specifications, application and performance requirements can be found in the ~~Global Operational Data Link Document (GOLD)~~ **Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869)**.*

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- b) 93 km (50 NM) between aircraft operating in the New York Oceanic East FIR and Santa Maria Oceanic FIR meeting RNP 10 or RNP 4 specification in accordance with the provisions of 4.1.1.1 or 4.1.2.1, respectively.
- c) 110 km (60 NM) between aircraft which meet the minimum navigation performance specifications (MNPS) provided that a portion of the route of the aircraft is within, above, or below ~~MNPS airspace~~ **NAT HLA**;
- d) 167 km (90 NM) between aircraft operating outside the ~~MNPS airspace~~ **NAT HLA** and at least one aircraft does not meet the MNPS:



- 1) between the Iberian Peninsula and the Azores Islands; and
  - 2) between Iceland and points in Scandinavia and in the United Kingdom;
- e) 167 km (90 NM) between aircraft not approved RNP 10 or RNP 4 operating outside MNPS airspace NAT HLA where no portion of the route of the aircraft is within, above, or below MNPS airspace NAT HLA:
- 1) between the United States/Canada and Bermuda; and
  - 2) west of 55°W between the United States, Canada or Bermuda and points in the CAR Region;
- f) 223 km (120 NM) between other aircraft;

*Note.* ~~NAT MNPS airspace is defined in 4.1.1.5.1.1.~~

except that lower minima in ~~5.4.1.1.2~~ 5.4.1.2 of the PANS-ATM may be applied, or further reduced in accordance with 5.11 when the conditions specified in the relevant PANS-ATM provisions are met (see 5.4).

6.2.1.2 In the practical application of the minima in 6.2.1.1 c), d), e) and f), tracks may be spaced with reference to their difference in latitude, using one degree instead of 110 km (60 NM); one and one-half degrees instead of 167 km (90 NM); and two degrees instead of 223 km (120 NM), provided that in any interval of ten degrees of longitude, the change in latitude of at least one of the tracks does not exceed:

- a) three degrees at or south of 58°N;
- b) two degrees north of 58°N and south of 70°N; and
- c) one degree at or north of 70°N and south of 80°N.

At or north of 80°N, or where the above rates of change of latitude are exceeded, the required lateral separation must be ensured by reference to the track spacing expressed in nautical miles.

## 6.2.2 Longitudinal (P-ATM – Chapter 5)

6.2.2.1 Minimum longitudinal separation based on time between turbo-jet aircraft shall be:

- a) 15 minutes; or
- b) 10 minutes, provided the Mach number technique is applied whether in level, climbing or descending flight; and the aircraft concerned have reported over a common point to follow continuously diverging tracks until some other form of separation is provided; and:
  - 1) at least 10-minute longitudinal separation exists at the point where the tracks diverge; and
  - 2) at least 5-minute longitudinal separation exists where lateral separation is achieved; and
  - 3) 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 1 112 km (600 NM) of the common point, whichever is estimated to occur first.

*Note.— The minima contained in 6.2.2.1 b) are in addition to those found in the PANS-ATM, 5.4.2.4.*

6.2.2.2 Minimum longitudinal separation based on distance between turbo-jet aircraft shall be:

- a) 93 km (50 NM) between aircraft operating within the control area of the New York Oceanic **East** FIR and **Santa Maria Oceanic FIR** provided that the following conditions are met:
- 1) navigation – RNP 10 or RNP 4 specification in accordance with the provisions of 4.1.1.1 or 4.1.2.1, respectively;
  - 2) communication – CPDLC shall be monitored against RCP 240; and
  - 3) surveillance – ADS-C shall be monitored against RSP 180.

*Note – Guidance concerning RCP and RSP specifications, application and performance requirements can be found in the Global Operational Data Link Document (GOLD).*

- b) 55.5 km (30 NM) between aircraft operating within the control area of the New York Oceanic **East** FIR and **Santa Maria Oceanic FIR** provided that the following conditions are met:
- 1) navigation – RNP 4 specification in accordance with the provisions of 4.1.2.1;
  - 2) communication – CPDLC shall be monitored against RCP240; and
  - 3) surveillance – ADS-C shall be monitored against RSP 180.

*Note.— Guidance concerning RCP and RSP specifications, application and performance requirements can be found in the Global Operational Data Link Document (GOLD).*

6.2.2.3 Minimum longitudinal separation based on time between non-turbo-jet aircraft shall be **30 minutes** .:

- ~~\_\_\_\_\_ a) 30 minutes; and~~
- ~~\_\_\_\_\_ b) 20 minutes in the West Atlantic route system (WATRS) area.~~

~~\_\_\_\_\_ *Note.— The WATRS area is defined as beginning at a point 27°00'N/77°00'W direct to 20°00'N/67°00'W direct to 18°00'N/62°00'W direct to 18°00'N/60°00'W direct to 38°30'N/60°00'W direct to 38°30'N/60°15'W, thence counterclockwise along the New York Oceanic control area/FIR boundary to the Miami Oceanic control area/FIR boundary, thence southbound along the Miami Oceanic control area/FIR boundary to the point of beginning.*~~

### 6.2.3 Composite

Nil.

### 6.2.4 Vertical

6.2.4.1 Between FL 290 and FL 410 inclusive, 300 m (1 000 ft) vertical separation shall be applied in the NAT Region.

6.2.4.2 At or above FL 450, vertical separation between supersonic aircraft, and between supersonic aircraft and any other aircraft, shall be considered to exist if the flight levels of the two aircraft differ by at least 1 200 m (4 000 ft).

### 6.2.5 Radar

Nil.

### 6.2.6 Reduction in separation minima

(A11 – Chapter 3; P-ATM – Chapter 5)

6.2.6.1 Where, circumstances permitting, separation minima lower than those specified in 6.2.1 and 6.2.2 will be applied in accordance with the PANS-ATM, appropriate information should be published in AIPs so that users of the airspace are fully aware of the portions of airspace where the reduced separation minima will be applied and of the navigation aids on which those minima are based.

### 6.2.7 Airspace reservations

#### 6.2.7.1 Separation minima between moving temporary airspace reservations

6.2.7.1.1 Lateral separation shall be:

- a) 110 km (60 NM) between the closest tracks of any aircraft for which the airspace is reserved, provided all aircraft or formation flights meet the MNPS; or
- b) 223 km (120 NM) between the closest tracks of any aircraft for which the airspace is reserved, except that in the New York oceanic control area (OCA) west of 60°W, 167 km (90 NM) may be applied.

*Note.— A formation flight with at least one of the aircraft in the formation meeting MNPS is deemed to meet the requirement for the application of 110 km (60 NM) in a).*

6.2.7.1.2 Longitudinal separation shall be 60 minutes.

#### 6.2.7.2 Separation minima between stationary temporary airspace reservations

6.2.7.2.1 Lateral separation shall be:

- a) 110 km (60 NM) between the boundaries of stationary temporary airspace reservations, provided the requesting agencies have guaranteed to confine their activities to the requested airspace, except that in the New York OCA west of 60°W, 84 km (45 NM) may be applied; or
- b) 223 km (120 NM) between the boundaries of the airspace reservations, if no guarantees have been given, except that in the New York OCA west of 60°W, 167 km (90 NM) may be applied.

#### 6.2.7.3 Separation minima between moving temporary airspace reservations and other aircraft

6.2.7.3.1 Lateral separation shall be:

- a) 110 km (60 NM) 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 the airspace is reserved, provided all aircraft meet the MNPS requirements and a portion of the route of the aircraft is within, above or below MNPS

airspace NAT HLA; or

- b) 110 km (60 NM) between the track of an aircraft operating under the control of the ATC unit concerned and the track of a formation flight for which the airspace has been reserved, provided at least one aircraft in the formation and the aircraft operating under the control of the ATC unit meet the MNPS requirements and a portion of the route of the aircraft is within, above or below ~~MNPS airspace~~ NAT HLA; or
- c) 223 km (120 NM) 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 the airspace is reserved, ~~except that in the New York OCA west of 60°W, 167 km (90 NM) may be applied.~~

#### 6.2.7.4 Separation minima between stationary temporary airspace reservations and other aircraft

6.2.7.4.1 Lateral separation shall be:

- a) 56 km (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, provided the aircraft meets the MNPS requirements and a portion of the route of the aircraft is within, above or below ~~MNPS airspace~~ NAT HLA and the requesting agency has guaranteed to confine its activities to the requested airspace; or
- b) 110 km (60 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, provided the aircraft meets the MNPS requirements and a portion of the route of the aircraft is within, above or below ~~MNPS airspace~~ NAT HLA and the requesting agency has **not** guaranteed to confine its activities to the requested airspace; or
- c) 110 km (60 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, when the aircraft does **not** meet the MNPS requirements and the requesting agency has guaranteed to confine its activities to the requested airspace, ~~except that in the New York OCA west of 60°W, 84 km (45 NM) may be applied;~~ or
- d) 223 km (120 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, when the aircraft does **not** meet the MNPS requirements and the requesting agency has **not** guaranteed to confine its activities to the requested airspace, ~~except that in the New York OCA west of 60°W, 167 km (90 NM) may be applied.~~

### 6.3 MINIMUM FLIGHT LEVEL

#### 6.3.1 Establishment

Nil.

### 6.4 ATS ROUTES

#### 6.4.1 Track systems

##### 6.4.1.1 Establishment and use of organized track system (OTS)

6.4.1.1.1 When necessary in order to permit the optimum use of the airspace, the area control centres serving Gander Oceanic, New York Oceanic, Santa Maria Oceanic and Shanwick Oceanic control areas may, subject to coordination with each other and, when appropriate, with Reykjavik area control centre, establish an organized track system. The procedures in 6.4.1.1.2 and 6.4.1.1.3 shall then be applied.

6.4.1.1.2 Operators conducting scheduled or non-scheduled flight operations at or above FL 280 within Gander Oceanic, New York Oceanic, Shanwick Oceanic and Santa Maria (North of 30°N) Oceanic control areas shall provide information to the area control centres concerned regarding the tracks likely to be requested by turbo-jet aircraft during peak traffic periods. Such information shall be provided as far in advance of the anticipated peak periods as practicable and as specified in appropriate aeronautical information publications.

6.4.1.1.3 Based on the above information, an OTS may be established. The location of the organized tracks will depend on traffic demand and other relevant factors. The related organized track messages will be disseminated to operators by Shanwick Oceanic area control centre for the predominantly westbound flow of air traffic and by Gander Oceanic area control centre for the predominantly eastbound flow of air traffic. These messages shall be disseminated at least three hours in advance of each anticipated peak traffic period. Any subsequent change made to the track system shall be notified to the operators as soon as possible.

##### 6.4.1.2 Mandatory carriage of the OTS message

6.4.1.2.1 All aircraft operating in or above MNPS airspace NAT HLA shall carry a copy of the current OTS message.

##### 6.4.1.3 Flights along the northern or southern boundaries of Gander Oceanic and Shanwick Oceanic flight information regions

6.4.1.3.1 Aircraft operating along tracks through successive points situated on the northern or southern boundaries of Gander Oceanic and Shanwick Oceanic flight information regions shall be provided with air traffic services by Gander or Shanwick area control centre as appropriate.

#### 6.4.2 RNAV

Nil.

**6.5 AERODROME OPERATIONS**

**6.5.1 Area of applicability**

Nil.

**6.5.2 Intersection take-off**

Nil.

**6.5.3 Multiple line-ups on the same runway**

Nil.

**6.5.4 Visual departures**

Nil.

**6.5.5 Visual approaches**

Nil.

**6.5.6 Advanced surface movement guidance and control systems (A-SMGCS)**

**6.5.6.1 General**

Nil.

**6.5.6.2 A-SMGCS functions**

Nil.

**6.5.6.3 A-SMGCS alerts**

Nil.

**6.5.6.4 A-SMGCS identification procedures**

Nil.

**6.6 RNAV PROCEDURES**

**6.6.1 General**

Nil.

**6.6.2 En route**

Nil.

**6.6.3 Terminal**

Nil.

**6.6.4 State aircraft**

Nil.

**6.7 RNP PROCEDURES**

**6.7.1 General**

Nil.

**6.7.2 En route**

Nil.

**6.7.3 Terminal**

Nil.

**6.7.4 State aircraft**

Nil.

**6.8 COMPOSITE PROCEDURES**

Nil.

**6.9 MNPS NAT HLA PROCEDURES**

6.9.1 Aircraft not meeting the requirements of 4.1.1.5.1 shall not be allowed to operate in MNPS airspace NAT HLA unless the following conditions are satisfied:

- a) The aircraft is being provided with ATS surveillance service;
- b) Direct controller-pilot VHF voice communication is maintained; and
- c) The aircraft has a certified installation of equipment providing it the ability to navigate along the cleared track.

6.9.2 An operator who experiences reduced navigation performance shall inform air traffic control (ATC) as soon as practicable.

*Note.— The procedures to be followed for an emergency descent through NAT HLA are detailed in 9.1.*

**6.10 RVSM PROCEDURES****6.10.1 General**

Nil.

**6.10.2 Transition to/from RVSM airspace**

Nil.

**6.11 ATS COORDINATION****6.11.1 Between units providing area control services**

Nil.

**6.11.2 RNAV**

Nil.

**6.11.3 RNP**

Nil.

**6.11.4 RVSM**

Nil.

**6.11.5 SSR codes**



Nil.

## 6.12 ATS MESSAGES

### 6.12.1 Flight plan and departure (P-ATM – Chapter 11)

6.12.1.1 Filed flight plan messages for flights intending to operate within the NAT Region at a distance of 110 km (60 NM) or less from the northern and southern boundaries of Gander Oceanic and Shanwick Oceanic FIRs shall be addressed to the ACCs in charge of the NAT FIRs along the route and, in addition, to the ACCs in charge of the nearest adjacent NAT FIRs.

6.12.1.2 For flights departing from points within adjacent regions and entering the NAT Region without intermediate stops, filed flight plan messages shall be transmitted to the appropriate ACCs immediately after the flight plan has been submitted.

### 6.12.2 Arrival

Nil.

### 6.12.3 Boundary estimates

Nil.

### 6.12.4 Computer-assisted coordination

Nil.

## 6.13 FLIGHT INFORMATION SERVICE (FIS)

### 6.13.1 Automatic terminal information services (ATIS)

Nil.

### 6.13.2 SIGMETs (P-ATM – Chapter 9)

6.13.2.1 SIGMET information shall be transmitted to aircraft by VOLMET broadcast, by a general call to a group of aircraft, or by directed transmission to individual aircraft, as determined by the appropriate ACC according to the circumstances, bearing in mind the need to ensure timely receipt of the information by the aircraft and to keep the load on the HF en-route communications channels to a minimum.

6.13.2.2 SIGMET information passed to aircraft shall cover a portion of the route up to two hours' flying time ahead of the aircraft.

**6.13.3 Special air-reports**

Nil.

**6.13.4 Amended aerodrome forecasts**

(P-ATM – Chapter 9)

6.13.4.1 Amended aerodrome forecasts shall be passed to aircraft within 60 minutes from the aerodrome of destination, unless the information has been made available through other means.

**6.13.5 Landing forecasts**

Nil.

**6.14 ALERTING SERVICE**

Nil.

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# Chapter 7. SAFETY MONITORING

## 7.1 STRATEGIC LATERAL OFFSET PROCEDURES (SLOP)

Nil.

## 7.2 AIRSPACE MONITORING

### 7.2.1 General

Nil.

7.2.1.1 Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of the achieved lateral navigation performance of the aircraft population in relation to the lateral separation minimum. A safety assessment shall be carried out periodically, based on the data collected, to verify that the safety level continues to be met. Data shall include operational errors due to all causes.

*Note.— Guidance material on monitoring and conducting safety assessments is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (SMM) (Doc 9859).*

### 7.2.2 RNAV

#### 7.2.2.1 RNAV 10 (RNP 10)

7.2.2.1.1 A target level of safety (TLS) of  $5 \times 10^{-9}$  fatal accidents per flight hour per dimension shall be established for route systems operating a 93 km (50 NM) lateral separation minimum. The safety level of such airspace shall be determined by an appropriate safety assessment.

*Note.— Detailed guidance material on conducting safety assessments is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (SMM) (Doc 9859).*

~~7.2.2.1.2 Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of the achieved lateral navigation performance of the aircraft population in relation to the lateral separation minimum. A safety assessment shall be carried out periodically, based on the data collected, to confirm that the safety level continues to be met. Data shall include operational errors due to all causes.~~

~~————— *Note.— Monitoring will be conducted in accordance with the appropriate material issued by ICAO. Detailed guidance is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689) and the Safety Management Manual (SMM) (Doc 9859).*~~

7.2.2.1.2 Navigation performance shall be measured to ensure that the following criteria are met in order for separation minima specified in 6.2.1.1 b) to be utilized in the New York Oceanic East FIR:

- a) the proportion of the total flight time spent by aircraft 46 km (25 NM) or more off the cleared track shall be less than  $9.11 \times 10^{-5}$ ; and
- b) the proportion of the total flight time spent by aircraft between 74 and 111 km (40 and 60 NM) off the cleared track shall be less than  $1.68 \times 10^{-5}$ .

#### 7.2.2.2 Legacy MNPS

7.2.2.2.1 Adequate monitoring of flight operations in the NAT Region shall be conducted to assist in the assessment of continuing compliance of aircraft with the lateral navigation capabilities specified in 4.1.1.5.1.2 below:

- a) the standard deviation of lateral track errors shall be less than 11.7 km (6.3 NM);
- b) the proportion of the total flight time spent by aircraft 56 km (30 NM) or more off the cleared track shall be less than  $5.3 \times 10^{-4}$ ; and
- c) the proportion of the total flight time spent by aircraft between 93 and 130 km (50 and 70 NM) off the cleared track shall be less than  $1.3 \times 10^{-4}$ .

*Note.— Monitoring will be conducted in accordance with the appropriate guidance material issued by ICAO. Guidance material on monitoring of flight operations in the NAT Region is contained in the North Atlantic Operations and Airspace Manual (NAT Doc 007).*

### 7.2.3 RNP

~~Nil.~~

#### 7.2.3.1 RNP 4

7.2.3.1.1 Navigation performance shall be measured to ensure that the following criteria are met in order for the separation minima specified in 6.2.1.1 a) to be utilized in the New York Oceanic East FIR:

- a) the proportion of the total flight time spent by aircraft 28 km (15 NM) or more off the cleared track shall be less than  $5.44 \times 10^{-5}$ ; and
- b) the proportion of the total flight time spent by aircraft between 44 and 67 km (24 and 36 NM) off the cleared track shall be less than  $1.01 \times 10^{-5}$ .

### 7.2.4 RVSM

7.2.4.1 Adequate monitoring of flight operations in the NAT Region shall be conducted to assist in the assessment of continuing compliance of aircraft with height-keeping requirements.

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## **Chapter 8. AIR TRAFFIC FLOW MANAGEMENT (ATFM)**

### **8.1 PROVISION**

Nil.

### **8.2 APPLICATION**

Nil.

### **8.3 EXEMPTIONS FROM ATFM SLOT ALLOCATION**

Nil.

### **8.4 DEPARTURE SLOT MONITORING**

Nil.

### **8.5 PROMULGATION OF ATFM MEASURES**

#### **8.5.1 Strategic ATFM measures**

Nil.

#### **8.5.2 Amendments to promulgated strategic ATFM measures**

Nil.

#### **8.5.3 ATFM circulars and information**

Nil.

#### **8.5.4 Pre-flight information bulletin (PIB)**

Nil.

**8.5.5 Query procedures**

Nil.

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## Chapter 9. SPECIAL PROCEDURES

### 9.1 EMERGENCY DESCENT PROCEDURES

(P-ATM – Chapter 15)

#### 9.1.1 Action by the pilot-in-command

##### 9.1.1.1 Descent through the MNPS RVSM airspace and/or NAT HLA

9.1.1.1.1 An aircraft that is not MNPS/RVSM-approved and is unable to maintain a flight level above MNPS/RVSM airspace should descend to a flight level below MNPS/RVSM airspace.

9.1.1.1.2 An aircraft that does not meet the MNPS and is unable to maintain a flight level above the NAT HLA should descend to a flight level that is below the airspace.

9.1.1.1.23 An aircraft compelled to make a descent through MNPS airspace the NAT HLA, whether continuing to destination or turning back, should, if its descent will conflict with an organized track:

- a) plan to descend to a level below FL 280;
- b) prior to passing FL 410, proceed to a point midway between a convenient pair of organized tracks prior to entering that track system from above;
- c) while descending between FL 410 and FL 280, maintain a track that is midway between and parallel with the organized tracks; and
- d) contact ATC as soon as practicable and request a revised ATC clearance.

#### 9.1.2 Action by the ATS unit

Nil.

### 9.2 CONTINGENCY PROCEDURES INCLUDING TURN-BACKS

Nil.

### 9.3 AIR-GROUND COMMUNICATION FAILURE

(A2 – Chapter 3; P-ATM – Chapter 15; P-OPS, Vol. I)

*Note.— The following procedures are intended to provide general guidance for aircraft operating into or from the NAT Region experiencing a communications failure. These procedures are intended to complement and not*

*supersede Annex 2, the PANS-ATM and State procedures/regulations. It is not possible to provide guidance for all situations associated with a communications failure.*

#### *General*

9.3.1 The pilot shall attempt to contact either another aircraft or any ATC facility and inform it of the difficulty and request that information be relayed to the ATC facility with whom communications are intended.

#### *Communications failure prior to entering NAT Region*

9.3.2 If operating with a received and acknowledged oceanic clearance, the pilot shall enter oceanic airspace at the cleared oceanic entry point, level and speed and proceed in accordance with the received and acknowledged oceanic clearance. Any level or speed changes required to comply with the oceanic clearance shall be completed within the vicinity of the oceanic entry point.

9.3.3 If operating without a received and acknowledged oceanic clearance, the pilot shall enter oceanic airspace at the first oceanic entry point, level and speed, as contained in the filed flight plan, and proceed via the filed flight plan route to landfall. That first oceanic level and speed shall be maintained to landfall.

#### *Communications failure prior to exiting NAT Region – Cleared on filed flight plan route*

9.3.4 The pilot shall proceed in accordance with the last received and acknowledged oceanic clearance, including level and speed, to the last specified oceanic route point, normally landfall, and then continue on the filed flight plan route. The pilot shall maintain the last assigned oceanic level and speed to landfall and, after passing the last specified oceanic route point, shall conform with the relevant State procedures/regulations.

#### *Communications failure prior to exiting NAT Region – Cleared on other than filed flight plan route*

9.3.5 The pilot shall proceed in accordance with the last received and acknowledged oceanic clearance, including level and speed, to the last specified oceanic route point, normally landfall. After passing this point, the pilot shall conform with the relevant State procedures/regulations and rejoin the filed flight plan route by proceeding, via the published ATS route structure where possible, to the next significant point ahead as contained in the filed flight plan.

*Note.— The relevant State procedures/regulations to be followed by aircraft in order to rejoin its filed flight plan route are specified in detail in the appropriate national Aeronautical Information Publication.*

## **9.4 DEGRADATION OR FAILURE OF THE RNAV SYSTEM**

### **9.4.1 Action by the pilot-in-command**

Nil.

### **9.4.2 Action by the ATS unit**

Nil.

## **9.5 LOSS OF VERTICAL NAVIGATION PERFORMANCE REQUIRED FOR RVSM**

### **9.5.1 General**

Nil.

### **9.5.2 Degradation of aircraft equipment – pilot reported**

Nil.

### **9.5.3 Severe turbulence – not forecast**

Nil.

### **9.5.4 Severe turbulence – forecast**

Nil.

## **9.6 EN-ROUTE DIVERSION**

### **9.6.1 En-route diversion across the prevailing NAT air traffic flow**

9.6.1.1 Before diverting across the flow of adjacent traffic, the aircraft should climb above FL 410 or descend below FL 280 using the procedures specified in 15.2.2 of the PANS-ATM. However, if the pilot is unable or unwilling to do so, the aircraft should be flown at a level as defined in 15.2.2.3 b) of the PANS-ATM for the diversion until a revised ATC clearance is obtained.

## **9.7 INTER-REGION INTERFACE FOR NON-RVSM-APPROVED AIRCRAFT**

Nil.

## **9.8 MANNED BALLOON FLIGHTS**

9.8.1 Manned balloon flights authorized to operate in the NAT Region shall operate outside the ~~MNPS airspace~~ NAT HLA.

9.8.2 Within the NAT Region, manned balloons shall have a communications capability in accordance with Annex 2.



## **Chapter 10. PHRASEOLOGY**

### **10.1 RNAV**

Nil.

### **10.2 RNP**

Nil.

### **10.3 SURVEILLANCE**

Nil.

### **10.4 AERODROME OPERATIONS**

Nil.

### **10.5 ATFM**

Nil.

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## **Chapter 11. SEARCH AND RESCUE**

### **11.1 INTERNATIONAL GENERAL AVIATION (IGA)**

Nil.

11.1.1 International general aviation (IGA) shall be equipped with functioning two-way radio communications equipment except that, under special local circumstances, the appropriate authorities may grant exemption from this requirement.

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## Chapter 12. METEOROLOGY

### 12.1 AIRCRAFT OBSERVATIONS AND REPORTS

Nil.

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## **Chapter 13. AERONAUTICAL INFORMATION SERVICES**

### **13.1 NOTAM ADDRESSING AND DISTRIBUTION**

Nil.

### **13.2 AERONAUTICAL CHART INFORMATION**

#### **13.2.1 Visual procedures**

Nil.

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