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Atlantic Office

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NAT SPG HANDBOOK

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Prepared by the ICAO European and North Atlantic Office

on behalf of the North Atlantic Systems Planning Group (NAT SPG)

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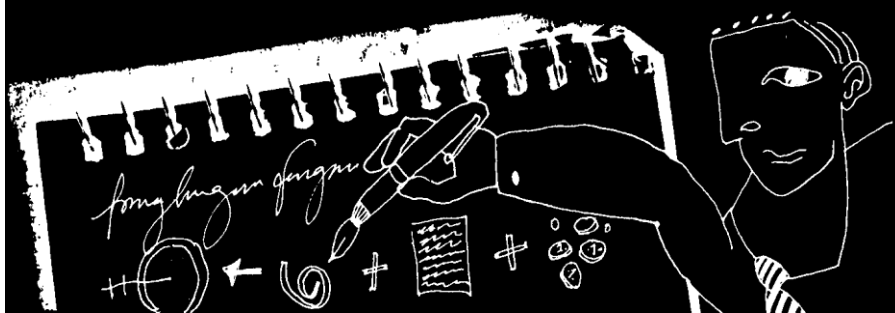
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*And so while the great ones depart for their dinner
The secretary stays, growing thinner and thinner
Racking his brain to record and report
What he thinks that they think that they ought to have thought.*

(Anstey)

INTRODUCTION

The North Atlantic Systems Planning Group (NAT SPG) was established in 1965 by the Council of ICAO as the first regional planning group. From its Terms of Reference the NAT SPG shall continuously study, monitor and evaluate the Air Navigation system in the light of changing traffic characteristics, technological advances and updated traffic forecasts.

At the 10th Air Navigation Conference, Montreal 5 - 20 September 1991, the ICAO Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) System was endorsed, and at the Limited North Atlantic Regional Air Navigation (LIM NAT RAN) Meeting, held in Cascais, Portugal 3 - 18 November 1992, the NAT SPG was tasked to develop proposals for CNS/ATM systems implementation actions as well as proposals for institutional arrangements.

In order to meet these new challenges, a Meeting of North Atlantic High Level Managers, held in Paris 20 - 21 January 1994, created a North Atlantic Implementation Management Group (NAT IMG) to co-ordinate and manage - on behalf of the NAT SPG itself - the NAT Implementation Plan. This led the NAT SPG to review and revise its organization and working methods.

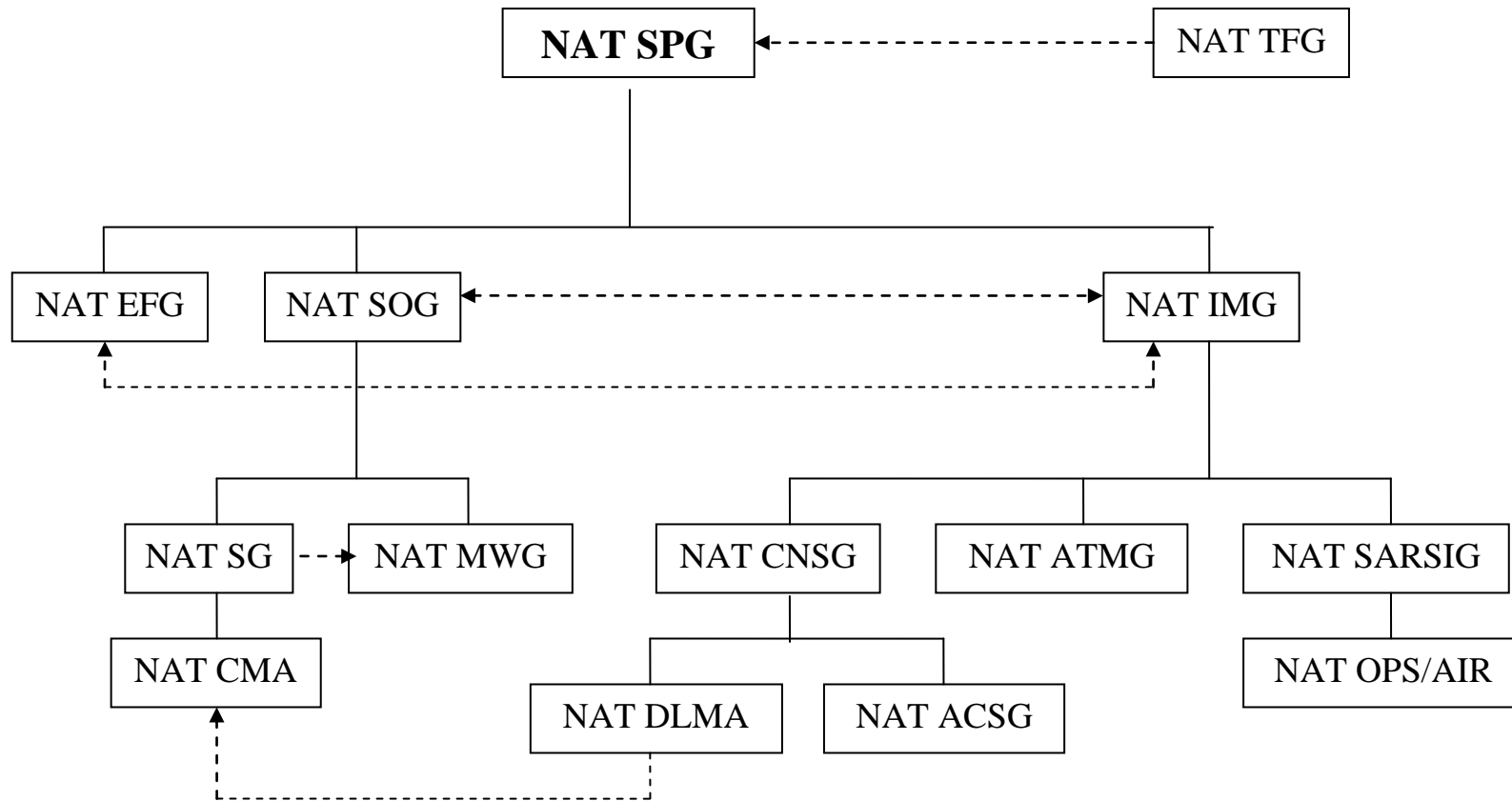
At NAT SPG/45, Paris, 23-26 June 2009, it was agreed to make adjustments to the [NAT SPG working structure](#) and to the terms of reference of its contributory bodies to accommodate the change in emphasis to performance based requirements, as driven by the Global ANP, and to take account of the Global Aviation Safety Plan (GASP). At the same time, the NAT SPG approved a high level [safety policy](#) which would be applicable to its work.

The purpose of the NAT SPG Handbook is to give an overview of the organization of the NAT SPG and its different groups, including terms of reference, working methods, participation, allocated Lines of Action from the NAT Implementation Plan and relevant Points of Contact. The handbook will be helpful to States and international organizations when planning and managing the resources for participation in the work.

The NAT SPG Handbook is published by the ICAO European and North Atlantic Office on behalf of the Chairman of the NAT SPG and distributed to all identified Points of Contact in the NAT SPG organization.

Asgeir PALSSON
Chairman of the NAT SPG

NAT SPG WORKING STRUCTURE



SAFETY POLICY STATEMENT

Safety is one of NAT SPG core business functions. The NAT SPG is committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under a balanced allocation of organizational resources. The NAT SPG will aim to achieve the highest level of safety performance and meet regional safety objectives in line with national and international standards, the Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan.

OBJECTIVE

The objective of the NAT SPG member States is to maintain and, where possible, improve the agreed safety standards in all activities supporting the provision of air navigation services in the North Atlantic Region:

- All involved States are accountable for the delivery of the agreed level of safety performance in the provision of air navigation services in the North Atlantic Region.
- All involved States are accountable for the delivery of the agreed level of safety performance in aircraft operations in the North Atlantic Region.
- Safety in the NAT Region is managed through the organization and activities of the relevant implementation and oversight groups established by the NAT SPG, in coordination with the non-member States and observers, to achieve its Safety Objective.

Guiding Principles

The NAT SPG will act to:

- **Clearly** define all accountabilities and responsibilities for the delivery of safety performance with respect to the provision of air navigation services and participation in the NAT SPG and its contributory bodies;
- **Support** the safety management activities that will result in an organizational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages safety within the NAT Region;
- **Share** safety related data, knowledge and expertise with concerned stakeholders;
- **Disseminate** safety information and NAT operating requirements to stakeholders;
- **Establish and implement** hazard identification and risk management processes in order to eliminate or mitigate the safety risks associated with air navigation services supporting aircraft operations in the North Atlantic Region;
- **Establish and measure** NAT Region safety performance against agreed safety standards; and
- **Continually improve** our safety performance through safety management processes

NORTH ATLANTIC SYSTEMS PLANNING GROUP (NAT SPG)

(Revised to reflect C-WP/13135, C 183/9 on 18 March 2008 and PRES RK/1560 dated 30 June 2008)

Terms of Reference The NAT SPG was established by the approval of the ICAO Council on 15 April 1965 (54/20) of Recommendation 4/1 - reproduced below - of the special North Atlantic Meeting, Montreal, 23 February - 20 March 1965, which specified within its sub-paragraphs the composition, terms of reference and method of operation of the Group.

Recommendation 4/1: North Atlantic Systems Planning Group

That, in order to ensure continuity in systems planning in the North Atlantic Region between successive North Atlantic Regional Meetings:

a) *The governments of Canada, Ireland, France, the Netherlands, the United Kingdom and the United States be invited to designate suitably qualified experts to participate on their behalf in the work of a North Atlantic Systems Planning Group with the following terms of reference:*

“To continuously study, monitor and evaluate the system in the light of changing traffic characteristics, technological advances and updated traffic forecasts, to the end that the North Atlantic Regional Plan may be adjusted on a timely, evolutionary basis. Throughout this work the group shall give close attention to the effectiveness of any suggested changes in relation to their costs.”

b) *Proposals by States for amendment of the North Atlantic Regional Plan that may be developed as a result of studies undertaken by the Group, be submitted for consideration by other North Atlantic States, either at ICAO North Atlantic Regional Meetings convened for the purpose, or by correspondence in accordance with established procedures.*

c) *The Group work with the flexibility and informality required to reduce to a minimum the administrative burden imposed on States and on ICAO.*

d) *The Group may invite, as and when it considers necessary or desirable, the co-operation and participation of other States and of public or private international organizations.*

e) *The Group meet approximately once a year and at least once every eighteen months either at the ICAO Paris Office, the ICAO Headquarters or elsewhere at the invitation of a State and pursue its work by correspondence between successive meetings.*

f) *All States of the North Atlantic Region be kept informed of the progress of work in the Group and be encouraged, as well as the international organizations concerned, to submit suggestions to assist the Group in its task*

- Members** All ICAO Contracting States, who are service providers in an air navigation region and part of that region's ANP, should be included in the membership of that region's PIRG. Furthermore, user States are entitled to participate in any other PIRG meetings as a non-member.
- Representatives of Canada, Denmark, France, Iceland, Ireland, Norway, Portugal, the United Kingdom and the United States are Members of the NAT SPG.
- Observers** International organizations recognized by the Council may be invited as necessary to attend PIRG meetings as observers.
- Representatives from the Russian Federation and Spain as well as Observers from IATA, IACA, IFALPA, IAOPA, IBAC, IFATCA, and IMSO are invited to participate in the work of the NAT SPG.
- Secretary** The ICAO Regional Director, European and North Atlantic Office, serves as the Secretary of the NAT SPG.
- Agenda** The NAT SPG normally meets for 3 working days once a year, and the following agenda is normally adopted for the Meetings:
- Agenda Item 1: Developments
 - 1.1 ICAO Panels and Committees
 - 1.2 Adjacent Regions
 - 1.3 NAT provider States
 - 1.4 Technology
 - 1.5 Progress on past Conclusions
 - 1.6 Structure and working methods of the NAT SPG
 - Agenda Item 2: Planning and implementation
 - 2.1 NAT Traffic Forecasting Group
 - 2.2 NAT Implementation Management Group
 - 2.3 NAT Economic and Financial Group
 - 2.4 Data link implementation matters
 - 2.5 Other issues
 - Agenda Item 3: Air navigation system review
 - 3.1 Safety Management
 - a) NAT Safety Management Coordination Group report
 - b) NAT Mathematicians Working Group report
 - c) Other safety related matters
 - 3.2 Operational issues
 - a) NAT Aeronautical Communications Group
 - b) Other issues
 - Agenda Item 4: Support services
 - 4.1 NAT Document Management Office
 - 4.2 NAT SPG Handbook
 - 4.3 NAT Programme Coordination Office
 - Agenda Item 5: Any other business
 - 5.1 NAT SPG follow-up
 - 5.2 Next meeting

Meeting Documentation

Working Papers and Information Papers, presented by States, international organizations or the Secretariat, form the basis of the discussions at the NAT SPG Meetings. Working Papers normally contain material which invites a conclusion by the NAT SPG, while Information Papers are submitted in order to provide the Group with information on which no conclusion is required.

Following a verbal presentation, the contents of Working Papers are discussed at the NAT SPG Meetings. The contents of Information Papers are presented verbally and discussed on request only and are normally not reflected in the Summary of Discussions.

Each NAT SPG Meeting is invited to agree on an English version of a Summary of Discussions of the Meeting, and the final version is distributed by the Secretariat in English.

Conduct of the meetings of the NAT SPG groups and sub-groups

Rapporteur – The Rapporteur facilitates the work of the meeting so as to encourage consensus or clearly identify barriers to consensus. The tasks of the Rapporteur include ensuring the efficient conduct of the meeting, ensuring that the tasks associated with the work programme are addressed or reported upon during the course of the meeting and reporting the findings of the meeting to the group(s) specified in the terms of reference. In the NAT SPG working structure, contributory groups to the NAT IMG and NAT SOG operate with Rapporteurs.

Chairman – In addition to the duties of a Rapporteur, the Chairman may make decisions regarding the conduct of the meeting and, in cases where it is not possible to reach consensus, determine the recommendation(s) that will be made by the meeting. In the NAT SPG working structure, the NAT SPG, NAT IMG, NAT SOG and NAT EFG operate with a Chairman.

Manuals published by the EUR/NAT Office on behalf of the NAT SPG:

- Guidance Material concerning Air Navigation in the North Atlantic Region (NAT Doc 001)
- NAT Minimum Navigation Performance Specifications (MNPS) Airspace Operations Manual (NAT MNPS OPS Manual)
- NAT International General Aviation Operations Manual (NAT IGA)

Other material maintained by the NAT SPG

- Application of Separation Minima (NAT Region) (NAT ASM)
- High Frequency Management Guidance Material for the North Atlantic Region (NAT Doc 003)
- Guidance Material for ATS Data Link Services in NAT Airspace
- The North Atlantic Common Coordination - Interface Control Document (NAT ICD)
- Common Aeradio Communications Interface Control Document for the North Atlantic Region
- Future ATM Concept of Operations for the NAT Region (NAT Doc 005)
- NAT Service Development Roadmap

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NAT AIR TRAFFIC FORECASTING GROUP (NAT TFG)

Terms of Reference

The NAT TFG was established as a result of actions taken by the Special NAT RAN (1965) Meeting. It was considered that the production of forecasts was an essential part of the programme for future action by the NAT SPG. This is reflected in the terms of reference of the NAT SPG itself which states: “*To continuously study, monitor and evaluate the system in light of changing traffic characteristics, technological advances and updated traffic forecasts, to the end that the NAT Air Navigation Plan may be adjusted on a timely evolutionary basis.*”

The above position was reiterated at the 5th NAT RAN (1970) Meeting and is reflected in Recommendation 1/1 of that Meeting which reads as follows:

Recommendation 1/1: Work of the NAT Air Traffic Forecasting Group

That the States responsible for the NAT Air Traffic Forecasting Group ensure that the Group reviews periodically the format and elements in the forecasts, coordinating as necessary with the ICAO Secretariat, and that the traffic forecasts be updated at least every other year and at other times as appropriate in order to reflect developments in air transport and associated changes in the environment, so that all information essential to NAT systems planning are made available in a timely fashion.

The Air Navigation Commission agreed at its 15th meeting of its 127th Session (127-15) for the LIM NAT RAN (1992) Meeting to use the air traffic forecasts developed by the NAT TFG in lieu of the Table of Aircraft Operations specified in *Directives to Regional Air Navigation Meetings and Rules of Procedure for their Conduct*, ICAO Doc 8144, as a basis for revision of the NAT Air Navigation Plan.

In view of the usefulness of the NAT air traffic forecasts in regional planning for the North Atlantic and the comparative advantage over the traditional Table of Aircraft Operations, the LIM NAT RAN (1992) Meeting agreed that the use of the traffic forecasts should be made a permanent feature in Doc 8144 for the NAT Region. For that reason, it was essential that the NAT TFG continue to produce this product annually under the guidance of the NAT SPG. To this end, the following Recommendation was adopted:

Recommendation 6/2: North Atlantic Air Traffic Forecasts

That:

- a) *the North Atlantic Air Traffic Forecasting Group (NAT TFG) produce detailed yearly forecasts for peak and off-peak movements in order to determine air traffic demand in the NAT Region in response to the needs of various users, particularly States and the North Atlantic Systems Planning Group;*
- b) *the forecasts be updated annually and included in the NAT Facilities and Services Implementation Document (FASID); and*
- c) *the North Atlantic Air Traffic Forecasts replace the Table of Aircraft Operations stipulated in Doc 8144, as one of the documents on which the North Atlantic Regional Air Navigation Plan shall be based.*

The above Recommendation was approved by Air Navigation Commission, under delegated authority by the Council, at the 3rd, 4th, 5th and 6th Meetings of its 132nd Session.

Meetings of the NAT TFG

At its Thirty-Second Meeting (1996), the NAT SPG agreed to the following

“NAT SPG Conclusion 32/5 – Meetings of the NAT Traffic Forecasting Group (NAT TFG)

That:

- a) the NAT TFG meet once every two years to update the short and medium term forecasts; and
- b) long range forecasts be updated every four years as of 1997.”

Composition The NAT TFG is composed of Members from Canada, Portugal, the United Kingdom and the United States.

Chairman The chairmanship rotates among the Members.

Secretary Secretariat services are provided by the ICAO European and North Atlantic Office.

NAT SPG ECONOMIC AND FINANCIAL GROUP (NAT EFG)

Terms of Reference

The establishment of the NAT EFG was based on NAT SPG Conclusion 36/7 to provide economic and financial advice to the NAT SPG in order to ensure the cost-effective management of the North Atlantic air traffic management system and has the following terms of reference:

1. Provide the NAT SPG with appropriate financial management expertise and advice in the areas of, inter alia, cost identification, cost allocation models, performance and productivity indicators, variance analyses and standardised financial reporting.
2. Provide advice to the NAT SPG as to best practice in the area of cost recovery and charging for the provision of air navigation services.
3. Develop proposals addressing financial and their related organisational aspects for implementing multinational facilities and services employed by provider States in the NAT region.
4. Review and provide input on financial and economic aspects of NAT development plans, in co-operation with the NAT IMG.
5. Address other issues as directed by the NAT SPG.
6. Report to the NAT SPG.

Composition

The NAT EFG is composed of Members from the NAT Oceanic service providers of Canada, Denmark, Iceland, Ireland, Norway, Portugal, the United Kingdom and the United States, and Members from IACA, IATA and IBAC with the participation of France as an observer.

The NAT EFG may invite other participants as and when required in order to ensure that the relevant expertise is available when addressing specific tasks or issues.

TERMS OF REFERENCE FOR THE NAT IMG AND ITS CONTRIBUTORY GROUPS

NAT IMPLEMENTATION MANAGEMENT GROUP (NAT IMG)

- Terms of Reference** The NAT IMG was established by a Meeting of North Atlantic High Level Managers, held in Paris 20-21 January 1994 and NAT SPG/30 decided on its initial terms of reference. Its current terms of reference are:
1. Support the objective of, and abide by the guiding principles of, the NAT SPG Safety Policy whilst carrying out its own activities and directing the activities of its implementation working groups.
 2. Develop and manage the NAT Services Development Roadmap, which identifies priorities and sets out timetables with associated milestones.
 3. Identify, detail and recommend allocation of tasks and resources required to fulfil the NAT Implementation Plan.
 4. Assess the cost-effectiveness of the elements of the NAT Implementation Plan.
 5. Approve or amend the terms of reference of NAT implementation working groups and to direct their work programmes.
 6. Ensure the necessary co-ordination and/or consultation with NAT Provider States, other States, NAT Users and appropriate International Organizations.
 7. Propose to the NAT SPG amendments to the Air Navigation Plan, the Facilities and Services Implementation Document and the Nat Implementation Strategy.
 8. Seek guidance from the NAT SPG on issues that the Group cannot resolve.
 9. Report to the NAT SPG.
- Composition** The NAT IMG is composed of representatives of the NAT SPG member States. In order to ensure that NAT users' views are represented and to provide valuable operational experience, NAT IMG meetings are also attended by representatives from IACA, IATA and IBAC.
- The NAT IMG might invite other participants as and when required in order to ensure that the relevant expertise is available when addressing specific tasks.
- In accordance with NAT SPG Conclusion 45/4, the Chairmanship of the NAT IMG will be reviewed every two years.
-

THE NAT IMG CONTRIBUTORY GROUPS

General principles applicable to the NAT IMG working structure

The principles listed below apply to all NAT IMG contributory bodies. They should to the extent possible be applied to task forces that the NAT IMG may set up from time to time as well as to the sub groups that the contributory bodies may establish.

Safety management statement

All NAT IMG contributory bodies shall support the objective of, and abide by the guiding principles of, the NAT SPG Safety Policy whilst carrying out their activities. In order to facilitate the exchange of safety management information, all reports of NAT IMG contributory groups shall clearly identify safety management related issues.

Working methods

The NAT IMG working groups will meet face-to-face at least once a year and at other times as required by the work programme. Yearly meeting dates and the requirement for additional face-to-face meetings will be as approved by the NAT IMG.

The working groups will make every reasonable effort to use other means such as teleconference and electronic correspondence to reduce the frequency of face-to-face meetings. Work will be carried out as required using such other means between face-to-face meetings in order to expeditiously carry their business.

Rapporteurship

The Rapporteur of each NAT IMG working group will be nominated from amongst the NAT SPG member States by the NAT IMG. The rapporteurship of each group will be reviewed at least once every two years. Keeping in mind the need to support continuity, changes will be made only when necessary and efforts will be made to avoid changing multiple Rapporteurs in the same year.

NAT AIR TRAFFIC MANAGEMENT GROUP
(NAT ATMG)

Terms of Reference

The NAT ATMG seeks approval from the NAT IMG for proposed changes to the NAT Region air navigation documentation in accordance with the following terms of reference:

1. Identify and propose remedial action for shortcomings and deficiencies.
2. Develop procedures to support the implementation of planned CNS/ATM initiatives.
3. Develop procedures for the application of agreed reductions in separation minima in the NAT Region.
4. Keep under review the Application of Separation Minima (North Atlantic Region) document and address outstanding issues.
5. Keep under review detailed operational requirements for Air Traffic Services (ATS) Inter-Facility Data Communication (AIDC) messages in support of Air Traffic Management (ATM).
6. Take into account, and develop as required, NAT Region requirements for Air Traffic Flow Management (ATFM) in harmonisation with Air Traffic Flow Management (ATFM) developments in the Caribbean (CAR), EUR and North America (NAM) Regions.
7. Take into account, and develop as required, NAT Region requirements for civil/military coordination
8. Establish the requirements for harmonisation of Flight Data Processing Systems (FDPS) within the NAT Region.
9. Determine the future operational requirements for Airspace Management (ASM) in the NAT Region.
10. In close cooperation with the NAT CNSG, determine the ATM procedures for the implementation of Communications, Navigation and Surveillance (CNS) in the NAT Region.
11. Co-ordinate the development of contingency plans
12. Address other issues as directed by the NAT IMG.

Composition

The NAT ATMG is composed of representatives from NAT SPG member States as well as participants from Spain, IATA, IBAC and IFALPA.

The Group may invite participants from other States, organisations or industry as required.

NAT SAFETY ANALYSIS AND REDUCED SEPARATION IMPLEMENTATION GROUP
(NAT SARSIG)

Terms of Reference The NAT SARSIG makes recommendations regarding changes to separation minima, procedures, safety compliance monitoring requirements, the implementation of new technologies and the safety assessments necessary to sustain changes to the NAT Region air navigation system, as assigned by the NAT IMG. It has the following terms of reference:

1. Develop a work programme for those tasks assigned to the group by the NAT IMG.
2. Develop material for elaboration of safety cases to be used for the proposed reductions or changes in application of separation minima or regional implementation of new technologies.
3. Ensure that collision risk assessments, including functional hazard and risk analysis, are carried out and if required, identify necessary mitigations for reductions or changes in application of separation standards or regional implementation of new technologies.
4. Ensure that an appropriate Target Level of Safety (TLS) is adopted for use in evaluating reductions of separation minima or changes in application of separation standards.
5. Identify those elements which are critical in the assessment of collision risk and suggest areas where safety improvements would be effective in reducing risk.
6. Assess the effects that projected increases in traffic would have on risk.
7. Ensure that Collision Risk Models (CRM), when used in the NAT Region, are appropriate.
8. As part of a safety case, determine the Communications Navigation and Surveillance (CNS) elements necessary to progressively reduce horizontal separation.
9. Study the aircraft operational issues related to the implementation of RNP in the NAT Region.
10. Address other issues as directed by the NAT IMG.
11. Report to the NAT IMG.

Composition The NAT SARSIG is composed of representatives from NAT SPG member States as well as participants from IATA and IFALPA.

The Group may invite participants from other States, organisations or industry as required.

OPERATIONS AND AIRWORTHINESS SUB-GROUP**(OPS/AIR)****Terms of Reference**

The OPS/AIR sub-group serves as a forum for State and aviation industry specialists to harmonise policy on airworthiness and operations issues related to separation standards. Its specific responsibilities are:

1. Co-ordinate on issues which may arise in the application of the Minimum Aircraft System Performance Specifications (MASPS).
2. Initiate necessary action to amend aeronautical charts to reflect navigational requirements related to separation standards (e.g. RVSM, Required Navigation Performance (RNP)).
3. Study operational issues related to the role of Airborne Collision Avoidance System (ACAS).
4. Harmonise aircraft operational and airworthiness policy for Automatic Dependent Surveillance (ADS), Controller Pilot Data Link Communications (CPDLC) and other data link initiatives.
5. Coordinate with the NAT ATMG and the NAT CNSG in the development of aircraft operational issues.
6. Study other aircraft operational issues as directed by the NAT SARSIG.
7. Report to the NAT SARSIG.

Composition

The OPS/AIR sub-group is composed of representatives from Canada, France, Ireland, Norway, Portugal, the United Kingdom, the United States, EUROCONTROL, IATA, IFALPA and manufacturers.

The OPS/AIR sub-group meets when required.

THE NAT COMMUNICATIONS, NAVIGATION AND SURVEILLANCE GROUP
(NAT CNSG)

- Terms of Reference** The NAT CNSG is responsible to the NAT IMG for the harmonisation, overall monitoring and reporting of CNS systems implementation conducted in the NAT Region and other related tasks directed by the NAT IMG. The principle tasks of the NAT CNSG are:
1. Develop the methodology for the CNS systems implementation process including harmonisation of implementation activities, monitoring requirements, reporting functions and arrangements among its members for use and distribution of CNS related data.
 2. Develop success criteria and methodology, inclusive of a safety analysis, for assessment of implementation programs.
 3. Evaluate CNS systems' end to end performance.
 4. Establish and oversee configuration management for the implementation of CNS systems for the NAT Region.
 5. Identify and resolve procedural and technical issues critical to the success of CNS systems implementation.
 6. Develop application level messages for ground/ground forwarding of data between ATC units.
 7. Implement and administer a CNS performance/problem monitoring and reporting system.
 8. Develop procedural and/or technical improvements to the use of CNS systems in the NAT Region.
 9. Address other issues as directed by the NAT IMG.
 10. Report to the NAT IMG.
- Composition** The NAT CNSG is composed of representatives from NAT SPG member States as well as participants from IATA, IBAC and IFALPA.
- The Group may invite participants from other States, organisations or industry as required.

NAT AERONAUTICAL COMMUNICATIONS SUB GROUP**(NAT ACSG)**

Terms of Reference	<p>The NAT ACSG reports to the NAT CNSG and is responsible for monitoring and analyzing the efficiency and effectiveness of NAT voice communications facilities and the Aeronautical Fixed Services (AFS).</p> <p>The main tasks of the NAT ACSG are:</p> <ol style="list-style-type: none">1. Monitor and analyze the efficiency and effectiveness of tools available to general purpose radio communications facilities including HF, GP/VHF and SATCOM voice systems.2. Address short term issues and propose solutions to problems related to fixed/mobile services.3. Keep under review the current network management arrangements including the distribution of traffic over the HF families of frequencies and make reservations to resolve unequal distribution of traffic.4. Provide advice on the operational voice communications requirements related to transition issues associated with the implementation of data link communications technologies.5. Provide advice/comment, as required, to the NAT CNSG and NAT ATMG on the impact of the implementation of communications systems and/or changes in ATC procedures on voice communications.6. Address and report to the NAT CNSG regarding issues related to planning and implementation, as directed by the NAT CNSG
Composition	<p>The NAT ACSG is composed of representatives from Canada, Iceland, Ireland, Norway, Portugal, the United States and IATA.</p>
Working Methods	<p>Through correspondence to the extent possible. Meetings may be required from time to time.</p>

NAT DATA LINK MONITORING AGENCY
(NAT DLMA)

Terms of Reference

The NAT Data Link Monitoring Agency (DLMA) will report to the NAT CNSG with respect to data link implementation, trials and operations.

It will receive and process routine and ad-hoc data and problem reports from end users and interested parties

The main tasks of the NAT DLMA are:

1. Monitor and report communications performance, availability and problems, with respect to requirements.
 2. Develop and promulgate forms, specifications and procedures required for reporting of problems and routine data.
 3. Monitor and report message traffic statistics.
 4. Co-ordinate end-to-end system functionality, performance and interoperability.
 5. Co-ordinate in order to diagnose and resolve system problems.
 6. Co-ordinate the development of ground system navigation databases.
 7. Report ATSUs' data link capabilities with respect to trials and operational requirements for the Region. Receive advisories of same from ATS providers.
 8. Co-ordinate with similar agencies for other airspaces.
 9. Collect notices of service disruptions, restorations and major system changes. Correlate the information same to problems reported.
-

NAT SAFETY OVERSIGHT GROUP

(NAT SOG)

Policy	Without prejudice to the responsibilities of ICAO contracting States in accordance with ICAO Annex 11, paragraph 2.27 the NAT SOG is responsible for the continuous monitoring and improvement of the safety level of the air navigation system in the NAT Region.
Terms of Reference	<p>The NAT SOG is responsible to the NAT SPG for directing safety oversight and management in the NAT Region. To that end, the NAT SOG will:</p> <ol style="list-style-type: none">1. Review system safety performance in the NAT Region.2. Share data on safety-related occurrences in the NAT Region.3. Develop best practices in the management of safety in the NAT Region.4. Ensure safety-related occurrences in the NAT Region are analysed by the appropriate NAT SPG contributory groups to determine root causes.5. Identify areas where mitigation is required and/or identify specific mitigation activities.6. Keep under review safety monitoring methods and analysis and recommend improvements to the process as appropriate.7. Monitor safety cases in progress and review completed safety cases prepared to support changes to the NAT air navigation system.8. Address other safety-related issues as necessary.9. Report to the NAT SPG.
Composition	The NAT SOG is composed of representatives from the NAT SPG member States, Spain, IATA, IBAC, IFALPA and IFATCA. States' representatives should be in a position to address regulatory and service delivery issues related the air navigation system in the NAT Region, and regulatory issues related to the conduct of flight operations in the NAT Region. The NAT SOG may invite participants from other States or organisations as required.

NAT MATHEMATICIANS' WORKING GROUP

(NAT MWG)

Terms of Reference	<p>The NAT MWG reports to the NAT SOG and is responsible for providing mathematical and statistical advice relating to the on-going monitoring of safety through the assessment of collision risk and any other tasks as determined by the NAT SOG. It has the following terms of reference:</p> <ol style="list-style-type: none">1. Estimate monthly and annually the lateral and vertical occupancies (traffic densities) in the NAT Region.2. Estimate the current lateral, longitudinal and vertical collision risks to show whether the estimated risks meet the respective Target Levels of Safety (TLS).3. Identify trends.4. For the purpose of safety management, identify trends in the component elements of the collision risk model and highlight where safety improvements could prove most effective.5. To reflect changes in operating conditions within the NAT region, review the collision risk model.6. Periodically perform other data collections (e.g. core navigation studies) in order to ensure that the parameter values within the mathematical collision risk models remain current.7. Review other mathematical aspects as directed by the NAT SOG and/or the NAT SPG.8. Report to the NAT SOG.
Composition	<p>The NAT MWG is composed of experts from the NAT SPG member States, Spain, IATA and IFALPA. Representatives from EUROCONTROL may also be invited as observers in order to ensure consistency between related European and North Atlantic work programmes.</p>
Working Methods	<p>The NAT MWG conducts its work via correspondence to the extent possible.</p>

NAT SCRUTINY GROUP

(NAT SG)

- Terms of Reference** The NAT SG is responsible to the NAT SOG for ensuring the correct categorization of NAT Region reported occurrences for the purposes of mathematical analysis and other safety management activities. To that end, the NAT SG will:
1. For the purpose of mathematical analysis, and in close cooperation with the NAT MWG, categorise navigational errors and altitude deviations of 300ft or more occurring in NAT MNPS airspace.
 2. For the purpose of safety management activities, categorize reported occurrences in the NAT Region as directed by the NAT SOG.
 3. Under the direction of the NAT SOG, analyse occurrences to determine root causes.
 4. Provide advice and recommendations to the NAT SOG regarding mitigation
 5. Work in close co-operation with the NAT CMA to compile data necessary to conduct safety analysis in the NAT Region.
 6. Keep under review the procedures for collecting and categorising occurrence reports.
 7. Address other related issues as directed by the NAT SOG.
 8. Report at least twice per year on safety management categorisations to the NAT SOG.
 9. Report once per year on mathematical categorisations to the NAT MWG.
- Composition** The NAT SG is composed of representatives from the NAT SPG member States, Spain, NAT MWG, NAT CMA, IATA, IBAC, IFALPA and IFATCA.
- Working Methods** The NAT SG conducts its work via correspondence to the extent possible.

NAT CENTRAL MONITORING AGENCY

(NAT CMA)

Terms of Reference

The NAT CMA is responsible to the NAT SOG for certain aspects of operations monitoring and reporting in the NAT Region. Specifically, its principle functions are:

1. Establish and amend, as required, mechanisms for the collection and analysis of occurrence data, including operational errors, for use in the risk assessment process.
2. Establish and operate a database of RVSM approvals, for the NAT Region, issued by State aviation authorities.
3. Investigate and analyse the causes of occurrences, including operational errors, in the NAT region and take follow-up action with State aviation authorities as required.
4. Establish a mechanism for the tactical monitoring of aircraft approvals and take follow-up action with State aviation authorities as required.
5. Act as the custodian of all aircraft technical height keeping data collected as part of the NAT Region monitoring process and take follow-up action, as required, with operators and State aviation authorities of aberrant or non-compliant aircraft.
6. Responsibility for the amendment and publication of the “NAT Minimum Monitoring Requirements” table in co-ordination with the NAT MWG and NAT SOG.
7. Provide NAT customers and State aviation authorities with height monitoring data on request.
8. Ensure that the requisite height monitoring is completed by operators of aircraft listed in the RVSM approvals database and to take appropriate action where necessary.
9. Ensure that system risk is assessed each calendar month and that appropriate action is taken if the risk in either dimension exceeds the published target level of safety.
10. Produce a quarterly report on operational performance in the NAT Region for distribution to the NAT SPG, the NAT SOG and other interested parties.
11. Liaison with other regional monitoring agencies in order to achieve an exchange of monitoring and RVSM approvals data amongst the regions.

**NAT IMPLEMENTATION MANAGEMENT GROUP (IMG)
COST EFFECTIVENESS GROUP**

(NICE)

Terms of Reference	<p>The NICE Group is responsible to the NAT IMG for the maintenance of the simulation capability needed to support NAT implementation planning. The principle tasks are:</p> <ol style="list-style-type: none">1. Assess the various elements of the NAT ATM plan.2. Conduct cost efficiency studies related to the NAT ATM plan.3. Carry out studies assigned to it by the NAT IMG.
Composition	<p>The Group is composed of Members from Iceland, the United Kingdom, and the United States and is supported by IATA.</p>
Rapporteur	<p>Iceland</p>
Working Methods	<p>The Group carries out its work by correspondence and only meets when required. The composition of NICE meetings is determined by resources needed for the assigned task.</p> <p>Inputs to the NICE Programme from the NAT IMG working groups are essential. Work packages are allocated to the working groups by the NAT IMG through the NICE Programme Manager.</p>

NAT DOCUMENT MANAGEMENT OFFICE

(NAT DMO)

Terms of Reference

The NAT DMO is responsible to the NAT SPG for ensuring the currency and consistency of the documentation relating to NAT operations which is resident on the NAT PCO web site with the following terms of reference:

1. Track changes to external source or reference documents and ensure that relevant NAT documentation is duly updated.
2. Apprise NAT Groups of any changes or potential changes to provisions which could impact their work.
3. Undertake, solicit and/or review changes to NAT documentation which might follow from the work of NAT Groups.
4. Apprise the NAT IMG of any need for changes to NAT documentation and seek approval for such work.
5. Brief the NAT SPG annually on all changes affecting NAT documentation.
6. Coordinate/liaise with commercial vendors of NAT-specific data to endeavour to ensure global consistency and currency of information and guidance available to users.
7. Maintain contact via an established contact point with the ATS and AIS units of NAT Region and NAT bordering states to ensure that planned or effected changes to any services or facilities that affect NAT operations are appropriately reflected in NAT documentation.
8. Review all relevant ICAO amendment proposals and apprise the NAT IMG of any potential impact on NAT operations.

Composition

The NAT DMO service will be provided by Iceland on behalf of the NAT SPG.

NAT SPG POLICIES

IMPLEMENTATION OF DATA LINK

NAT SPG Conclusion 41/7 - Mandating Data Link Requirements

That the NAT Implementation Management Group:

- a) proceed with the road map to enable mandating data link in portions of the NAT Region by 2015; and
- b) report to NAT SPG/42

NAT SPG Conclusion 42/6 - Operational Status of the FANS 1/A ADS and CPDLC Trials

That the Future Air Navigation Systems (FANS) Automatic Dependent Surveillance (ADS) Waypoint Position Report (WPR) and Controller Pilot Data Link Communications (CPDLC) trials be declared operational with the following provisos:

- a) phase IV CPDLC has been implemented;
- b) the current strategic operating concept remains the basis for service provision;
- c) the current HF system remains;
- d) continuous monitoring of system performance is carried out by the FCMA, with at least an annual report being provided to the SMCG.

NAT SPG Conclusion 44/6 - Data Link Harmonisation Strategy

That the Secretariat update the entries in the NAT SPG Handbook to replace NAT SPG Conclusion 43/1 with the following:

- a) Any additional aircraft implementation of Automatic Dependent Surveillance - Contract (ADS-C) should either;
 - i) utilise without change the existing DO-258A/ED-100A* (FANS-1/A) ADS-C, or
 - ii) move to the full implementation of the internationally agreed common technical definition that will be defined based on relevant provisions and guidance material (*Manual of Air Traffic Services Data Link Applications* (Doc 9694)) developed by ICAO and its technical bodies

Partial or divergent aircraft data link evolutions should not be pursued, as they will continue to promote divergent paths to the detriment to the broader community. Interim steps or phases toward full implementation of the common technical definition in ground systems should only be pursued on a regional basis, after coordination between all States concerned.

* *RTCA/EUROCAE Interoperability Requirements for ATS Applications Using ARINC 622 Data Communications (FANS 1/A INTEROP Standard)*

IMPLEMENTATION OF DATA LINK

- b) Any additional aircraft implementation of Controller-Pilot Data Link Communications (CPDLC) should either;
- i) utilise without change the existing DO-258A/ED-100A (FANS-1/A) or DO-280B/ED-110B[†] (ATN) CPDLC for ACM/ACL/AMC[‡] data link services, or
 - ii) move to the full implementation of the internationally agreed common technical definition, based on *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444), and other operational material as appropriate

Partial or divergent aircraft data link evolutions that result in excluding messages from aircraft systems should not be pursued, as they will continue to promote divergent paths to the detriment to the broader community. Interim steps or phases toward full implementation of the common technical definition in ground systems should only be pursued on a regional basis, after coordination between all States concerned.

- c) Harmonization of operational procedures for implementation of the above packages is considered essential. States, planning and implementation regional groups, air navigation services providers and other ATS coordinating groups should adopt common procedures to support seamless ATS provision across flight information region boundaries, rather than each State or Region developing and promulgating unique procedures for common functions.

NAT SPG Conclusion 45/11 – Mandate for data link equipage in the NAT Region

That the NAT Implementation Management Group (NAT IMG):

- a) develop a NAT Region plan to mandate Automatic Dependent Surveillance-Contract (ADS-C) and Controller Pilot Data Link Communications (CPDLC) equipment certified against requirements specified in RTCA DO-258A/EUROCAE ED-100A (or ED-100);
 - i) from 7 February 2013, in order to operate on specified tracks within the Organised Track System (OTS); and
 - ii) from 5 February 2015 in NAT Minimum Navigation Specifications (MNPS) Airspace;
- b) determine the applicable flight level band taking account of the EUR Region mandate;
- c) ensures that the plan includes provisions for aircraft not able to be equipped within the above time frame;
- d) draft, on behalf of the NAT SPG, a proposal for amendment to the NAT *Regional Supplementary Procedures* (Doc 7030) in order to initiate the processing by 15 December 2009; and
- e) provide NAT SPG/46 with a progress report.

[†] RTCA/EUROCAE Interoperability Requirements Standard For ATN Baseline 1 (ATN B1 INTEROP Standard)

[‡] Air traffic control communications management/Air traffic control clearances and information/Air traffic control microphone check.

IMPLEMENTATION OF DATA LINK

NAT SPG Conclusion 45/12 – Inter-regional coordination of data link requirements

That the ICAO Regional Director, Europe and North Atlantic, on behalf of the NAT SPG:

- a) coordinate with adjacent regions to facilitate a mutual understanding and harmonisation of data link equipage requirements and implementation plans between the NAT and adjacent regions; and
 - b) provide updates to the NAT SPG to support maintenance of the NAT data link implementation plan.
-

SAFETY RELATED POLICIES

NAT SPG Conclusion 42/1 - ICAO provisions with specific applicability dates

That:

- a) States be invited to take appropriate action to achieve timely implementation of the ICAO provisions having a specific applicability date;
- b) States experiencing difficulties to achieve timely implementation of those provisions be invited to seek assistance and advice from the Regional Office with a view to overcome the difficulties; and
- c) the ICAO Regional Director identify means to provide assistance and advice as appropriate as provided for in the unified strategy.

NAT SPG Conclusion 43/4 - Determination of an appropriate value for the safety case to support a reduction to ½ degree track spacing

That the NAT Implementation Management Group (NAT IMG) ensure that all safety analyses supporting the implementation of ½ degree track spacing use a value that accommodates the requirements of the Gentle Slope Rules for the proposed lateral spacing between tracks.

NAT SPG Conclusion 45/5 – Exchange of safety management related information

That, recognising the importance of all NAT SPG contributory groups being aware of safety management issues in the NAT Region and thereby maximising contributions to the resolution of these issues and to facilitate the exchange of safety management information, each meeting of every NAT SPG contributory group shall:

- a) review the safety management sections of the most recent reports of all other NAT SPG contributory groups; and
- b) document any relevant comments in the safety management section of their own report.

NAT SPG Conclusion 45/14 - Convening NAT users meeting

That ICAO, on the basis of a recommendation from the NAT Implementation Management Group (NAT IMG) or of the NAT Safety Oversight Group (NAT SOG) and with the assistance of NAT service providers convene Conferences from time to time to explain to those directly involved with operations in the NAT Region current and future developments, especially those that affect safety.

SAFETY RELATED POLICIES

NAT SPG Conclusion 45/17 - Establishment of a NAT Data Link Monitoring Agency (NAT DLMA)

That the:

- a) United States establish by 31 December 2009 a NAT DLMA;
- b) NAT Implementation Management Group coordinate all safety related matters with the NAT Safety Oversight Group; and
- c) NAT IMG provide a report to NAT SPG/46.

NAT SPG Conclusion 45/25 - Implementation of Air Traffic Services (ATS) Inter-Facility Data Communication (AIDC) throughout the NAT Region

That:

- a) all States make arrangements to fully implement AIDC, including the re-negotiation function, by 15 November 2012;
 - b) the NAT Implementation Management Group (NAT IMG) oversee the development of a detailed implementation plans to assist Air Navigation Service Providers (ANSP) to meet the 15 November 2012 date;
 - c) the NAT IMG direct its contributory groups to assist in the development of a harmonised multi-regional AIDC Interface Control Document (ICD);
 - d) the NAT Safety Oversight Group keep under review the impact that the gradual implementation of AIDC may have on reducing risk; and
 - e) the NAT SPG be provided with regular progress reports.
-

IMPLEMENTATION PLANNING

NAT SPG Conclusion 43/5 - Changes to the NAT IMG work programme to take account of global planning

That the NAT Implementation Management Group (NAT IMG):

- a) adjust its work programme to include specific reductions in lateral and longitudinal separation minima based on definable improvements to Communications Navigation Surveillance (CNS) performance; and
- b) provide the NAT SPG with regular updates.

NAT SPG Conclusion 45/10 – NAT concept of operations to support reducing lateral separation to 25 Nautical Miles (NM)

That the:

- a) following concept of operations be used to develop an implementation plan for reducing lateral separation to 25 NM:
 - i) Phase 1 – 2012 – introduce 25 NM lateral separation by implementing ½ degree spacing between the two core tracks, FL350 to FL400 inclusive; only aircraft with the appropriate RNP approval, Automatic Dependent Surveillance-Contract (ADS-C) and Controller Pilot Data Link Communications (CPDLC) would be permitted to operate on the ½ degree spaced tracks.
 - ii) Phase 2 – 2013 – expand the introduction of 25 NM lateral separation by implementing ½ degree spacing through the entire NAT Organised Track System (OTS), FL350 to FL400 inclusive; only aircraft with the appropriate RNP approval, ADS-C and CPDLC would be permitted to operate on the ½ degree spaced tracks.
 - iii) Phase 3 – 2015 – introduce 25 NM lateral separation throughout the entire NAT Region, including for converging and intersecting track situations, between FL350 to FL400 inclusive. The application of the reduced separation standard between targets of opportunity should be permissible in any part of the NAT Region outside the OTS (mixed mode operations).
- b) NAT Implementation Management Group (NAT IMG) develop the following material to support implementation plan for reducing lateral separation to 25 NM:
 - i) a proposal for amendment to the NAT *Regional Supplementary Procedures* (Doc 7030); and
 - ii) safety material to so as to initiate the development of global provisions;
- c) ICAO Regional Director, Europe and North Atlantic coordinate with ICAO Headquarters in order to initiate the development of global provisions; and
- d) NAT IMG provide NAT SPG/46 with a progress report.

IMPLEMENTATION PLANNING

NAT SPG Conclusion 45/22 – Implementation planning for reduced lateral separation

That the NAT Implementation Management Group:

- a) ensure that the errors arising from the input and display of $\frac{1}{2}$ degree coordinates (for example, 48°30' North) are subject to specific hazard analysis and mitigation developed to address the identified hazards;
 - b) develop a robust plan to capture and contain errors arising from flight crews misconstruing $\frac{1}{2}$ degree coordinates as a full degree coordinate or vice versa (for example, flying to 43°30' rather than 43°00' or vice versa); and
 - c) ensure that the results of a) and b) are an integral part of the implementation plan for reduced lateral separation.
-

NAT DOCUMENTATION

NAT SPG Conclusion 43/31 - format of NAT SPG follow-up action list

That the NAT SPG follow-up action list:

- a) identify related Strategic Objectives, Global Planning Initiatives (GPI), and/or Global Air Traffic Management System Goals for each Conclusion;
- b) identify which work programme(s) is/are responsible for specific actions;
- c) track progress on each Conclusion until it is closed; and
- d) be maintained on-line and be available via the members' portal on the ICAO EUR/NAT web site.

NAT SPG Conclusion 43/32 - Updates to NAT SPG handbook

That the Secretariat update the NAT SPG Handbook to incorporate Conclusions that are of a policy nature as soon as practicable after each NAT SPG meeting.

NAT SPG Conclusion 44/38 - Updates to the NAT Minimum Navigation Performance Specifications (MNPS) Airspace Operations Manual

That:

- a) the NAT Document Management Office (NAT DMO) carry out an annual review and update of the NAT MNPS Airspace Operations Manual following each meeting of the NAT SPG;
- b) Air traffic services providers and safety regulators advise the NAT DMO of any significant developments between NAT SPG meetings, which demand immediate amendments to the Manual;
- c) the NAT Implementation Management Group ensure that the NAT MNPS Airspace Operations Manual is reviewed on a regular basis in order to provide updates; and
- d) in the event of interim amendments being made to the NAT MNPS Airspace Operations Manual, an alert be posted on the ICAO NAT Programme Coordination Office (PCO) website and in the Remarks section of the NAT Organized Track System Message.

NAT SPG Conclusion 45/13 – Amendment to the Application of Separation Minima (North Atlantic Region) (NAT ASM) Document – Edition 2009

That the:

- a) Secretariat be requested to published the NAT ASM– Edition 2009 electronically on the EUR/NAT web site by 15 July 2009; and
- b) NAT Implementation Management Group oversee the configuration management of the ASM.

NAT DOCUMENTATION

NAT SPG Conclusion 45/29 - Amendment to the NAT Minimum Navigation Performance Specifications (MNPS) Airspace Operations Manual

That the NAT Documentation Management Office (DMO):

- a) continue to manage the NAT MNPS Airspace Operations Manual;
- b) in coordination with the ICAO Secretariat, prepare an amendment to the NAT MNPS Airspace Operations Manual taking account of the decisions of NAT SPG/45, changes to the NAT Air Navigation System since September 2008 and the material shown in Appendix L to this report; and
- c) arrange to publish electronically the NAT MNPS Airspace Operations Manual – Edition 2009 – in September 2009.

NAT SPG Conclusion 45/30 - Amendment to the Guidance Material concerning Air Navigation in the North Atlantic Region (NAT Doc 001)

That the NAT Documentation Management Office (NAT DMO):

- a) develop a draft electronic edition of the Guidance Material concerning Air Navigation in the North Atlantic Region (NAT Doc 001);
 - b) prepare a proposal on how to rationalise all remaining NAT Region documentation; and
 - c) present the results of its work to NAT SPG/46 for endorsement.
-

REFERENCES

OCCURRENCE CLASSIFICATION CODES
--

General

CF	Communications failure
CI	Crew Injury
CR	Crew Request
CW	Cracked window
DW	Destination Weather
ED	Engine Defect
ES	Engine Shutdown
F	Fire
FL	Fuel Leak
FPD	Fuel Pump Defect
FS	Fuel shortage
HP	Hydraulic Problem
IRSF	IRS Failure
LFT	Low Fuel Temperature
ME	Medical Emergency
PD	Passenger Disturbance
PEI	Precautionary-Engine Indication
PR	Pressurisation problem
S	Smoke
SIC	Smoke in Cockpit
TP	Technical Problem
W	Weather

Contingency Action

CA

CF	Communications failure
CI	Crew Injury
CR	Crew Request
CW	Cracked window
DW	Destination Weather
ED	Engine Defect
ES	Engine Shutdown
F	Fire
FL	Fuel Leak

OCCURRENCE CLASSIFICATION CODES
--

FPD	Fuel Pump Defect	
FS	Fuel shortage	
HP	Hydraulic Problem	
IRSF	IRS Failure	
LFT	Low Fuel Temperature	
ME	Medical Emergency	
PD	Passenger Disturbance	
PEI	Precautionary-Engine Indication	
PR	Pressurisation problem	
S	Smoke	
SIC	Smoke in Cockpit	
TP	Technical Problem	
W	Weather	
	Diversion	DIV
D	Failed to comply with restriction in clearance	
L	ATC error	
	Horizontal Separation Erosion	HSE
C	Crew error	
ISO	Followed flight plan iso clearance	
L	ATC error	
L4	ATC Co-ordination error	
	Intervention	INT
A	Committed by aircraft not certified for operation in MNPS airspace	
B1	ATC Loop Error - Controller error	
B2	ATC Loop Error - Poor information exchange between CONTROLLER and the third party communicator	
B3	ATC Loop Error - Poor information exchange between PILOT and the third party communicator	
B4	ATC Loop Error - Poor centre to centre co-ordination	
C	Crew error	
C1	Equipment control error encompassing incorrect operation of fully functional FMS or navigation system.	

OCCURRENCE CLASSIFICATION CODES
--

C2	Incorrect transcription of ATC clearance or re-clearance into the FMS.	
	Wrong information faithfully transcribed into the FMS e.g. flight plan followed rather than ATC clearance or original clearance followed instead of re-clearance	
C3		
D	Other with failure to notify ATC in time for action	
E	Other with failure to notify ATC too late for action	
F	Other with failure not notified/received by ATC	
G	Inter-facility co-ordination problem	
ISO	Followed flight plan iso clearance	
L	ATC error	
W	Weather	
	Lateral Deviation <25nm	L
	Lateral Deviation <15nm	L15
A	Committed by aircraft not certified for operation in MNPS airspace	
B1	ATC Loop Error - Controller error	
B2	ATC Loop Error - Poor information exchange between CONTROLLER and the third party communicator	
B3	ATC Loop Error - Poor information exchange between PILOT and the third party communicator	
B4	ATC Loop Error - Poor centre to centre co-ordination	
C1	Equipment control error encompassing incorrect operation of fully functional FMS or navigation system.	
C2	Incorrect transcription of ATC clearance or re-clearance into the FMS.	
	Wrong information faithfully transcribed into the FMS e.g. flight plan followed rather than ATC clearance or original clearance followed instead of re-clearance	
C3		
D	Other with failure to notify ATC in time for action	
E	Other with failure to notify ATC too late for action	
F	Other with failure not notified/received by ATC	
G	Inter-facility co-ordination problem	
W	Weather	

OCCURRENCE CLASSIFICATION CODES
--

GROSS NAVIGATION ERRORS

The GNE occurred in MNPS airspace and the aircraft was observed exiting the ocean through the windows and the deviation $\geq 30\text{Nm}$.

Alpha (eta)

The GNE occurred in MNPS airspace and the aircraft was observed exiting the ocean through the windows and the deviation $\geq 50\text{Nm}$ or ≥ 1 deg, as appropriate.

Alpha (zeta, risk-bearing)

The GNE occurred in MNPS airspace, was NOT observed exiting the ocean through the windows and the deviation $\geq 25\text{Nm}$ or WAS observed exiting the ocean through the windows and the deviation $\geq 30\text{Nm}$.

B

The GNE occurred above or below MNPS airspace (not necessarily at the windows) and the deviation $\geq 25\text{Nm}$

C

C	Crew error
D	Failed to comply with restriction in clearance
E	Climb/descent without ATC clearance.
L	ATC error
W	Weather

Longitudinal Separation Erosion

LSE

C	Crew error
L	ATC error
MA	Mach no.
WP	Waypoint

Time-Related Incident

TRI

CF	Communications failure
CI	Crew Injury
CR	Crew Request
CW	Cracked window

OCCURRENCE CLASSIFICATION CODES
--

DW	Destination Weather
ED	Engine Defect
ES	Engine Shutdown
F	Fire
FL	Fuel Leak
FPD	Fuel Pump Defect
FS	Fuel shortage
HP	Hydraulic Problem
IRSF	IRS Failure
LFT	Low Fuel Temperature
ME	Medical Emergency
PD	Passenger Disturbance
PEI	Precautionary-Engine Indication
PR	Pressurisation problem
S	Smoke
SIC	Smoke in Cockpit
TP	Technical Problem
W	Weather

Turnback**TB**

A	Contingency action due to engine fault.
B	Contingency action due to pressurization failure.
C	Contingency action due to other cause.
D	Failure to climb/descend as cleared.
E	Climb/descent without ATC clearance.
F	Entry to RVSM airspace at an incorrect level.
G	ATC FL re-clearance resulting in a loss of lateral or longitudinal separation.
H	Deviation due to TCAS.
I	Aircraft unable to maintain level.
J	ATC failure to correctly record, coordinate, or follow through on FL changes and/or other clearances.
K	Aircrew not maintaining level as cleared.
L1	ATC failure to capture incorrect read back of control instructions.
L2	ATC failure to maintain situational awareness.
L3	ATC failure to resolve transposed call signs.

OCCURRENCE CLASSIFICATION CODES
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L4	ATC Co-ordination error	
M	Actions taken due to mechanical or equipment failure.	
O	Other	
W	Weather	
	Final level within RVSM airspace	1
	Final level above RVSM airspace	2
	Final level below RVSM airspace	3

– END –

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