



International Civil Aviation Organization

**Trans-Regional Airspace and Supporting ATM Systems Steering Group
Third Meeting (TRASAS/3)**

Paris, France, 19 – 20 October 2010

Agenda Item 3: Work currently underway to enhance the ATS route network

**REPORT ON THE STATUS OF THE ARCTIC 50 NM LATERAL SEPARATION REDUCTION
PROJECT**

(Presented by the United States of America)

SUMMARY

This paper presents the status of the Arctic 50 nautical mile (NM) Lateral Separation Reduction Project to implement 50 NM lateral separation between operators/aircraft authorized Required Navigation Performance (RNP) 10 or RNP 4 in the Anchorage Arctic Flight Information Region (FIR) and the Canadian Minimum Navigation Performance Specifications (CMNPS) airspace.

1. INTRODUCTION

- 1.1 The Second Meeting of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS/2) invited the regional planning groups (PIRGs) concerned to consider actions to harmonise the application of separation standards and means to implement the various required navigation performance (RNP) provisions in the short-term (1-2 years), medium-term (2-5 years) and long-term (5-10 years) plans. To support the planning and implementation activities, TRASAS/2 agreed on the following Conclusion:

TRASAS Conclusion 2/2 – RNP for Cross-Polar and Trans-East Operations

That all PIRGS concerned be invited to consider actions that will harmonise the application of separation standards and a means to achieve:

- a) Implementation of the RNP 10 provisions in the airspaces covering the Cross-Polar and Trans-East routes/operations as a short-term/medium-term action;*
- b) Implementation of the RNP 4 provisions in the same airspaces as described above, as a medium-term/long-term improvement; and*
- c) Amend, as appropriate, the provisions of Regional Supplementary Procedures and the Regional Air Navigation Plans.*

- 1.2 Following the discussions of the TRASAS/2, the Fifth Meeting of the Cross Polar Trans-East Air Traffic Management Providers' Working Group (CPWG/5) identified a need to harmonize separation standards and improve efficiencies across the polar region, and agreed to include the work called for by TRASAS Conclusion 2/2 in the CPWG Work Program.

(3 pages)

- 1.3 The Federal Aviation Administration (FAA), NAV CANADA and ISAVIA reported to the Seventh Meeting of the CPWG that they had formed a team to explore implementing 50 nautical mile (NM) lateral separation between operators and aircraft authorized RNP 10 or RNP 4 in Anchorage Arctic Flight Information Region (FIR) and Canadian Minimum Navigation Performance Specifications (CMNPS) airspace.

- 1.4 This information paper presents an update on the work conducted by the Project team.

2. DISCUSSION

- 2.1 The United States and Canada in coordination with the TRASAS are planning to implement a reduction of the lateral separation standard within the Control Areas (CTAs) of Anchorage Arctic FIR and Edmonton FIR/CTA. The lateral separation applied in the Anchorage Arctic FIR will be reduced from the existing 90 NM standard to 50 NM between aircraft authorized for RNP 10 or RNP 4 operations. This will harmonize the application of 50 NM lateral separation across the Pacific CTA/FIRs, the Anchorage Arctic FIR and Edmonton FIR/CTA. The lateral separation applied in the Edmonton FIR/CTA will be reduced from the existing 60 NM standard to 50 NM between aircraft authorized for RNP 10 or RNP 4 operations.
- 2.2 A Safety Risk Management (SRM) Panel composed of representatives from the FAA and NAV CANADA, facilitated by CSSI Inc., was convened to ensure that hazards were identified and unacceptable risk was mitigated and accepted prior to any changes to the United States (US) National Airspace System (NAS). Applying the principles of the SRM process, the panel identified no high or medium risk hazards and only two low risk hazards. It was determined by the SRM Panel that the reduction of lateral separation in the Anchorage Arctic FIR could be safely implemented.
- 2.3 A safety assessment conducted by the FAA William J Hughes Air Traffic Control Technical Center was completed in November 2009. This safety assessment provided information that showed that RNP 10 was a sufficient requirement for safe operations under the initial introduction of 50 NM lateral separation in the Anchorage Arctic FIR. The 95 percent upper confidence estimate of lateral occupancy results was used to prepare the collision risk estimate, which should account for demand well into the future for this airspace. Under the assumptions outlined in the safety assessment and using the collision risk model parameter estimates, the estimate of lateral collision risk was 0.429×10^{-9} fatal accidents per flight hour due to the loss of planned lateral separation for the Anchorage Arctic FIR airspace when a lateral navigational performance of 7 NM/95% containment is used.
- 2.4 If it is assumed that aircraft population performance meets RNP 10 performance (10 NM/95% containment), the resulting estimate of lateral collision risk is 0.528×10^{-9} fatal accidents per flight hour due to the loss of planned lateral separation.
- 2.5 Both of these values satisfy the ICAO-endorsed target level of safety value applicable to the lateral separation standard, 5×10^{-9} fatal accidents per flight hour due to the loss of planned lateral separation. This assessment showed that given prevailing conditions and expected performance, the Arctic 50 NM lateral separation reduction would meet international guidelines for implementation.
- 2.6 The FAA Safety Risk Management Document (SRMD) has been submitted and is awaiting FAA approval. The North American Regional Supplementary Procedures (ICAO Doc 7030) amendment awaiting approval of the ICAO North American, Central American and Caribbean (NACC) Regional Office. The Arctic 50 NM Lateral Separation Reduction Project web site can be found at:

http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/oceanic.

The operational policy and procedures have been added to the US Notices to Airman - Domestic and International publication, Part 3, Section 2 (International Oceanic Airspace Notices).

- 2.7 The planned implementation date is 18 November 2010 for the Anchorage Arctic FIR and in 2011 for Edmonton FIR/CTA CMNPS airspace. NAV CANADA will not be implementing simultaneously with the FAA due to the installation of the Canadian Automated Air Traffic System (CAATS) at Edmonton Area Control Centre.

3. ACTION BY THE STEERING GROUP

- 3.1 The meeting is invited to note the information provided in this paper.

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