



ICAO

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First Meeting of the APAC Project 30/10 Task Force

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Agenda Item 2: States Challenges and Implementation Plan

MINIMUM LONGITUDINAL SEPARATION STANDARDS BETWEEN FUKUOKA FIR AND NEIGHBORING FIRS

(Presented by Japan)

SUMMARY

This paper describes the current status, challenges, and implementation plans for longitudinal separation standards between the air navigation service provider (ANSP) in Fukuoka Flight Information Region (FIR) and ANSPs in the adjacent foreign FIRs.

1. INTRODUCTION

1.1 The purpose of this paper is to provide information on the minimum longitudinal separation standards applied between aircraft operating within Fukuoka Flight Information Region (FIR) and those in neighboring FIRs. The coordination of separation standards between adjacent FIRs is essential to ensure the safety, efficiency, and orderly flow of international air traffic.

1.2 Fukuoka FIR is geographically surrounded by several foreign FIRs, including Incheon FIR, Taipei FIR, and Manila FIR, among others. Due to high traffic density in these regions, harmonized separation standards and coordination procedures are implemented through Letters of Agreement (LOAs) between ANSP in Japan and ANSP in each country and regions.

1.3 This paper summarizes the currently applied minimum longitudinal separation standards agreed upon between Fukuoka FIR and the neighboring FIRs and provides an overview of coordination practices at FIR boundaries.

2. DISCUSSION

2.1 The minimum longitudinal separation standards applied between Fukuoka FIR and adjacent FIRs are determined based on factors such as surveillance capability, navigation performance, traffic volume, and route structure. These standards are established through bilateral agreements and are consistent with ICAO provisions where applicable.

2.2 Specific separation values between Fukuoka FIR and neighboring FIRs are detailed in the respective LOAs.

Fukuoka FIR – Incheon FIR (Daegu ACC & Incheon ACC)

2.3 Although both FIRs are Category S airspaces at Transfer of Control (TOC) under AIDC circumstances, the minimum longitudinal separation is set to 20 NM. However, the separation may be reduced to 15NM depending on the day of the week and time of day.

Fukuoka FIR – Shanghai FIR

2.4 Both FIRs are Category R airspaces at TOC under non-AIDC circumstances. The minimum longitudinal separation between Fukuoka FIR and Shanghai FIR is set to 15 minutes.

Fukuoka FIR – Taipei FIR

2.5 Although both FIRs are Category S airspaces at TOC under AIDC circumstances, the minimum longitudinal separation between Fukuoka FIR and Taipei FIR ranges from 10 NM to 70 NM, depending on aircraft speed differentials and downstream routing. Larger separations apply when the succeeding aircraft is faster or both aircraft proceed beyond adjacent FIRs, while reduced minima apply when the preceding aircraft maintains the same or greater speed, with directional application on certain routes.

Fukuoka FIR – Manila FIR

2.6 Both FIRs are Category R airspaces at TOC under non-AIDC circumstances. The minimum longitudinal separation between Fukuoka FIR and Manila FIR is set to 15 minutes. However, the separation may be reduced to 10 minutes when the Mach Number Technique is applied for aircraft on the same or continuously diverging tracks, with directional application on certain routes, including traffic from Manila FIR to Fukuoka FIR.

Fukuoka FIR – Oakland and Anchorage Oceanic FIRs

2.7 TOCs between FIRs are within Category R airspaces under AIDC circumstances and the separation is based on standard oceanic longitudinal and lateral criteria. The minimum longitudinal separation is 15 minutes, which may be reduced to 10 minutes with the application of the Mach Number Technique and further reduced using ADS-C distance-based separation. The minimum lateral separation is 100 NM, reducible to 50 NM with RNP 10 and 30 NM with RNP 4 in conjunction with RCP 240/RSP 180.

2.8 In addition, for Anchorage Oceanic FIR, 30 NM longitudinal and 23 NM lateral separation are applied at designated transfer points depending on traffic direction.

Fukuoka FIR – Khabarovsk FIR

2.9 The minimum separation between Fukuoka FIR and Khabarovsk FIR is 20 NM or 10 minutes, depending on the route and transfer point. The radar handover is conducted via a specific FIX.

Challenges

2.10 The application of reduced longitudinal separation minima (30 NM in oceanic/remote airspace and 10 NM in other airspace) is constrained by several factors, including limited or non-existent surveillance, non-AIDC environments, aircraft speed differentials, downstream FIR restrictions, and route structure complexity.

2.11 In addition to these constraints, a number of operational considerations need to be taken into account, including:

- a) the characteristics of each transfer point;
- b) the capacity of Fukuoka FIR and downstream FIRs;
- c) common understanding with neighboring FIRs on transfer conditions and fallback procedures;

- d) the readiness of ATFM arrangements; and
- e) interdependencies with other ATM-related improvements.

2.12 A phased implementation approach is required to achieve reduced longitudinal separation minima in a safe and coordinated manner. In this regard, it is important to view Project 30/10 within the broader context of comprehensive ATM improvements in the APAC region, including enhancements in efficiency, predictability, and regional harmonization.

2.13 In particular, the implementation of reduced longitudinal separation minima needs to be supported by related measures, including CTOT, CTO, wider regional ATFM coordination, trajectory-based operations, and the optimization of lateral separation minima where applicable.

Implementation Plan considering Project 30/10

2.14 As an initial step, Japan will continue to review the current separation standards, transfer conditions, applicable LOAs, traffic characteristics, and operational constraints at each transfer point between Fukuoka FIR and neighboring FIRs.

2.15 Based on these reviews, Japan will consider optimizing existing procedures and the LOA in order to reduce the minimum longitudinal separation value to a limited extent while satisfying safety and operational conditions.

2.16 Full adoption of the 30/10 standard will require technical and operational enablers, including expansion of AIDC, enhancement of surveillance through ADS-B, increased PBN capability, safety risk assessment, controller training, and improved traffic flow management.

2.17 Through these efforts, implementation needs to be pursued progressively taking into account the conditions and coordination with neighboring FIRs, as well as the overall operational environment

3. ACTION BY THE MEETING

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

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