



*International Civil Aviation Organization*  
**ICAO** **Thirteenth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/13)**

Bangkok, Thailand, 03 – 07 April 2023

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**Agenda Item 4: Review of Current ATFM Operations and Problem Areas**

**NARAHG UPDATE**

(Presented by China, Japan and Republic of Korea)

**SUMMARY**

This paper presents the Time-Based ATFM operation trial implemented in NARAHG. Including new procedure for Typhoon detour flights and trial plan for the upcoming year.

**1. INTRODUCTION**

The background of the procedure for Typhoon detour flights

1.1 Northeast Asia has a high density of flights, and the flow of the airways continues to be high all the year round. Therefore, large-scale and large-volume westbound detour flights are often caused large-scale delays including regular flights as the boundary SADLI and AGAVO become a bottleneck. To solve this problem, NARAHG (Northeast Asia Region ATFM Harmonization Group) jointly conducted the operation test of the procedure for typhoon detour flights. The purpose is to accurately manage the number of detour flights, to organize as many detour flights as possible without affecting regular flights.

1.2 The basic principle of the procedure is that the downstream ATFM unit gives the acceptable detour flights capacity according to the number of regular FPLs 2 days in advance. On the operating day, the downstream issues the restriction only for detour flights, and the upstream issues GDP for detour flights according to this restriction. Regular flights can avoid delays by precisely focused detour flights. While the planning and organization of detour flights is based on the accept plan, delays can also be reduced.

The operation of the procedure for typhoon detour flights trial in China

1.3 In September 1<sup>st</sup> 2022, Shanghai ATCC issued a restriction plan (**Figure 1**) to the ROK Air Traffic Management Office (ATMO) two days in advance. ROK ATMO shared this plan with Aircraft Operators and organized them to choose routes and schedule according to the restriction plan.

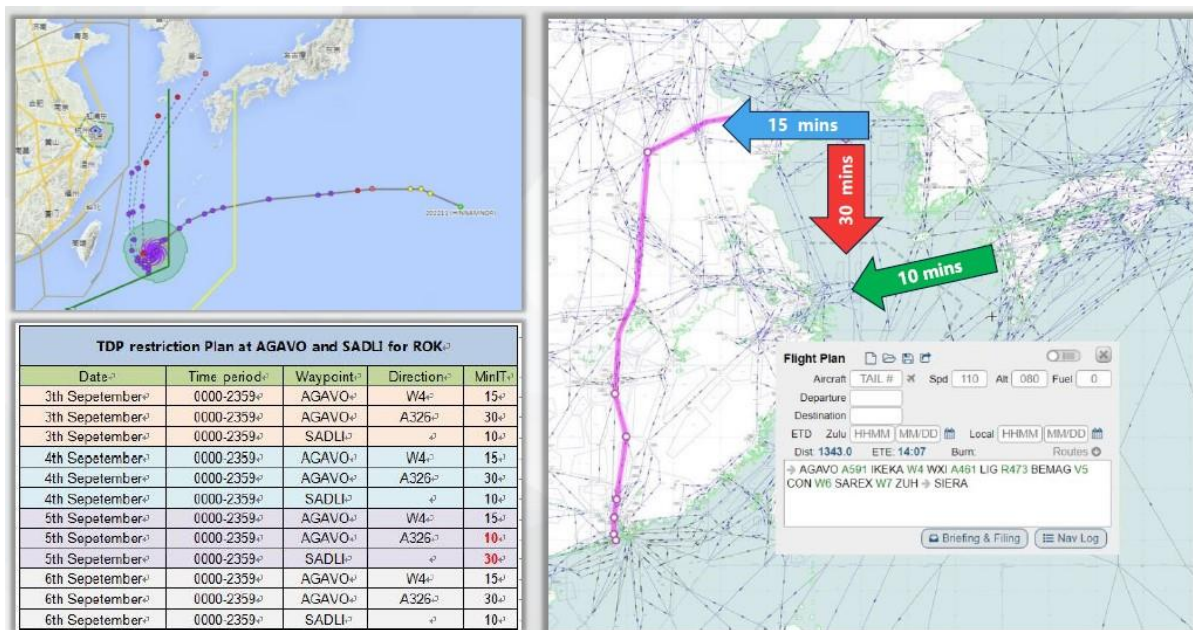


Figure 1: Shanghai ATCC issued the procedure 2 days in advance

1.4 According to flight data, from 1 – 18 September, a total of 888 flights from 25 airlines applied to enter Shanghai FIR via AGAVO or SADLI. More than half of them were flights departing from ROK. Statistics from ROK confirmed that the delay time was 50% shorter than before.

The operation of the procedure for typhoon detour flights trial in ROK

1.5 From 4 – 6 September, during the typhoon Hinnamnor, the procedure for typhoon detour flights was applied to 172 flights bound for Southeast-Asia departing from ROK. According to the path of the typhoon, 77 flights to AGAVO, 43 flights to SADLI, and 52 flights to RUGMA detoured.

1.6 China, Japan, and ROK regularly shared FPLs for each detour route. For AGAVO detouring flights, the average departure delay was 22 minutes, and max departure delay was 113 minutes. For SADLI detouring flights, the average departure delay was 14 minutes, and the max departure delay was 89 minutes. For RUGMA detouring flights, the average departure delay was 4 minutes and the max departure delay was 37 minutes.

The operation of the procedure for typhoon detour flights trial in Japan

1.7 Japan sufficiently coordinated with China and ROK, regarding the identification of detour flights to avoid assigning unnecessary delay.

1.8 Japan coordinated with ROK to share information on ETA for detour flights to minimize delays.

**2. DISCUSSION**

The benefit of the procedure for typhoon detour flights

2.1 The procedure only focuses on typhoon detour flights, which avoid the impact of regular flights. This can reduce the restriction scale and delay time, and it has been verified by trial data.

2.2 The mechanism of cross-border pre-tactical enlarge the prediction for both of upstream and downstream units.

2.3 China, Japan and ROK have also reviewed and detected several issues in our trials for the procedure for typhoon detour flights. One of them is the identification of target aircraft. All ATFMU and the airline operators need to have in common for the identification, and discuss about the conditions.

The improve plan for next phase

2.4 NARAHG decided to reduce the workload of data exchange by ATFM systems docking via CRV network. The data exchange test between China and ROK will start to test in May 2023.

2.5 The common operation procedure should be confirmed through more real trials for the new operation. NARAHG plans to hold monthly trials after the data connection established.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss the need for operational procedures for adverse weather conditions to be implemented in coordination with the airline operators; and
- c) discuss any relevant matters as appropriate.

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