



TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 4: Optimum capacity and efficiency – through global collaborative ATM

4.3: Enhanced operational decision-making through integrated meteorological information

EFFECTIVE ATM BY USING CUSTOM-MADE-WEATHER PRODUCTS

(Presented by Japan)

SUMMARY

This paper presents air traffic management (ATM) in Japan which has been operated in close collaboration between ATM and MET, with utilizing custom-made meteorological information, which can be applicable for future 4DT operation.

1. INTRODUCTION

1.1 The weather information is important elements for air traffic management (ATM), and has a significant impact to the operations of aircraft; especially the capacity of airport and airspace. It is also one of the most important factors to realize the 4D trajectory based operations. This paper provides collaborative efforts of Japan Civil Aviation Bureau (JCAB) and the Japan Meteorological Agency (JMA) in ATM Center (ATMC) Japan.

2. BACKGROUND

2.1 JCAB has established ATMC in 2005. At the same time, JMA established Air Traffic Meteorology Centre (ATMetC) to provide weather forecast for the ATMC. JCAB has been implementing ATM by using weather information since then, considering it in a proactive way.

2.2 The weather has a big impact for traffic management; especially in case airport or airspace capacities are close to traffic demands. However, ATM experts are not experts of meteorology. Vice versa, MET experts are not experts of ATM. Therefore, ATMC and ATMetC have maintained their close relationship in the same operations room. ATMetC provides dedicated meteorological information and briefings to support ATM operation. Regular weather briefings are provided 9 times a day, and extra briefing is conducted whenever more precise information is needed.

2.3 In addition to such operational support, ATMC and ATMetC established a joint study group in order to enhance mutual understanding of each others' operation and discuss further collaborative support. From the outcomes of the study group, they have developed ATM-tailored, scenario-based meteorological information which are very useful for ATM operation.

3. **ATMET CATEGORY FORECAST**

3.1 The ATMet category forecast is a product that indicates the probability that weather conditions influence air traffic flow for the purpose of supporting Air Traffic Management. It is updated on hourly basis by forecasters in ATMetC, except during 14UTC and 16UTC when air traffic is relatively light. ATMC gets informed of the weather conditions of airports and airspace, mainly through the ATMet category forecast, and judges whether air traffic capacity should be changed (or not), and control the air traffic flow, if necessary. Details of this product are described in IP/55 of this Conference.

3.2 The Category Forecast is one of the most important elements of ATM in Japan. To assess this weather information is in starting point for ATM planning. Since the Category Forecast is always displayed in the operation room in ATMC, we can also share the weather conditions changing after the weather briefing before ATM officers are on duty. It provides an overview of today's weather. It is helpful for all stakeholders joining CDM conference to instantly get a picture of what they are expected to do, considering today's situation.

4. **SIGWX BRIEFING SHEET**

4.1 When significant weather phenomena which may have large impacts on aircraft operations in and around of airport is forecasted, ATMetC issues the SIGWX briefing sheet which indicates specific impact scenarios expected to be occur by weather conditions. Detail study on past cases at congested aerodromes have revealed the fact that there are characteristic weather-related impacts often occur at the airport. For example, at Tokyo International Airport (RJTT), strong cross-winds over its runway 16L/34R may cause limitation of aircraft runway. Currently, since 2011, the ATMetC have begun issuing the SIGWX briefing sheet for RJTT and New-Chitose Airport (RJCC). Details of this product are also described in IP/55 of this conference.

4.2 SIGWX briefing sheet has information which is focused on to what the ATM officers have to necessarily pay attention. There will be a big impact on ATM in whole Japanese airspace, when the capacity of such a congested airport like RJTT, which has significant amount of traffic volume, has decreased. It is the same when RJCC, which has more traffic in winter, is forced to close its runway due to severe snow. The SIGWX briefing sheet can help ATM officers conduct more adequate ATFM actions in a timely manner, by providing them of possible specific impact at these vital airports.

5. **CONCLUSION**

5.1 ATM in Japan is supported by such custom-made meteorological information provided by the ATMetC. And also, ATMC operation taking ATM-tailored meteorological information into consideration will contribute to the future 4DT operations.

5.2 Those scenario-based products are developed by continuous collaborative work and mutual understanding between ATMC and ATMetC, as well as their operational experiences in the same operations room in ATMC.

5.3 The Conference is invited to note the information on this paper.