ELEVENTH AIR NAVIGATION CONFERENCE

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Agenda Item 4 : Capacity-enhancement measures

CAPACITY ENHANCEMENT PLAN FOR AIRSPACE OF THE REPUBLIC OF KOREA

(Presented by the Republic of Korea)

SUMMARY

This paper summarizes a capacity enhancement plan to solve the congestion matter in the Incheon Flight Information Region, Republic of Korea. Recently, air traffic volume in the Incheon FIR has continuously increased. The Republic of Korea has launched the 2nd phase of construction in the Incheon International Airport to expand passenger terminals, gates, aprons and to construct a 3rd runway since 2002.

1. INTRODUCTION

1.1 The Republic of Korea is responsible for supporting air traffic services within the Incheon Flight Information Region.

1.2 There are 16 airways (11 for international and 5 for domestic flights), 14 terminal control areas, and 120 special use airspaces for military in the Incheon FIR.

1.3 During the last decade, air traffic volume within Korean airspace has increased approximately by 8.3 per cent annually. Recently it is reported that 2 500 flights per day are flying within the Incheon FIR, including 1 000 civil flights, 900 military flights and 600 other flights.

1.4 Approximately 55 percent of air traffic is concentrated in Seoul TMA covering Incheon International Airport and Gimpo International Airport. Therefore, it is necessary to increase the airspace capacity in order to the solve the congestion matter and improve safety of airspace.

2. POSSIBLE MEASURES TO IMPROVE AIRSPACE CAPACITY

2.1 Simplification of procedures for take-off and landing

2.1.1 Capacity of airspace depends on the separation distance between aircraft, aircraft mixed rate, performance of air traffic controllers and the configuration of airspace. It is necessary to reduce separations between aircraft, rearrange aircraft sequence for smooth flow, and reduce the workload of air traffic controllers.

2.1.2 Air traffic controllers must pay attention and monitor flight tracks for take-off and landing and inbound/outbound. A heavy workload for controllers is expected to increase the capacity of airspace. The procedure for take-off and landing of flights, which is based on the ICAO separation standard rule, should be simplified as much as possible.

2.2 Establishment of a directional airway system

2.2.1 In a bi-directional type of airway configuration, it is difficult to increase the airway capacity to make a mutual separation between aircraft. Especially in the Incheon FIR, most airways are surrounded by MOAs (Military Operation Areas). A one-way type airway system, can ease traffic flow, thereby improving safety and increasing the en-route traffic capacity. It is required that the directional airway system should be reviewed and constructed as soon as practicable.

2.2.2 Airway G597 bound to China and B576 directed to South-Asia should be established as soon as possible to decrease the heavy traffic conditions and accomplish this task.

2.3 Review of the possibility of common airspace usage for civil and military aircrafts

2.3.1 The possibility of a scheme enabling civil aircraft to use an area of MOA airspace when military aircraft is not using the same airspace should be considered. Seoul TMA will be congested with aircraft landing or taking-off during peak periods for five to eight years. Common use of SUAs and MOAs is necessary for civil air traffic in order to increase capacity of airspace and simultaneously contribute to the safety of airspace.

2.4 Implementation of CNS/ATM

2.4.1 The CNS/ATM implementation plan in Korea can be organized as planned by modernizing and upgrading six functional areas: communications, navigation and landing systems, surveillance, air traffic services (ATS), airspace management and air traffic flow management.

2.4.2 The Implementation Plan has three stages:

a) near-term plan (2000 - 2004);

b) mid-term plan (2005 - 2009); and

c) long-term plan (2010 - 2015).

2.5 Implementation of RVSM in Incheon FIR

2.5.1 The KMOCT has a plan to implement RVSM at the beginning of 2005. The RVSM implementation area will be all of the airspace within the Incheon FIR. A task force team for the implementation of the Korean RVSM was established in May 2001, consisting of experts from the Korea Civil Aviation Safety Authority (KCASA), Korea Ministry of National Defense (KMND), Korea Aerospace Research Institute (KARI) and airlines.

2.5.2 For the implementation of RVSM in Incheon FIR, KCASA will maintain close cooperation with the Japan Civil Aviation Bureau (JCAB) for the efficient RVSM operation in the Northeast Asia region and maintain coordination with the People's Republic of China and DPR of Korea, if necessary.

3. CONCLUSION

3.1 For the increase of capacity in the Incheon International Airport, Incheon International Airport Corporation (IIAC) has launched the 2nd phase of construction to expand passenger terminals, gates, aprons and to build the 3rd runway since 2002.

3.2 In order to fulfill the 2nd phase of construction, airport terminal airspace should be reviewed carefully. The terminal airspace is very limited. Landing and take-off procedures for the new 3rd runway should be established by the end of 2007.

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