Thirty First Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/31)

Video Teleconference - Bangkok, Thailand, 14 to 16 December 2020

Schedule: 10:00 – 13:15 Bangkok Time [UTC+7hrs]

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.2: **ATM**

IMPLEMENTATION STATUS OF FATIGUE MANAGEMENT SYSTEM FOR ATCOS

(Presented by the Republic of Korea)

SUMMARY

This paper presents the ROK's implementation status of Fatigue Management System for Air Traffic Control Officers (ATCOs) in accordance with the provisions in the 14th edition of ICAO Annex 11. Member States are invited to share their experience in introducing fatigue management system for ATCOs.

Strategic Objectives:
A: ***Safety*** *– Enhance global civil aviation safety*

1. INTRODUCTION

1.1 The 14th edition of Annex 11, effective on July 2016, added new provisions on the fatigue management of Air Traffic Control officers (ATCOs). ICAO urged States to manage ATCO fatigue risks as appropriate through compliance with prescriptive limits and/or the implementation of a Fatigue Risk Management System (FRMS), while providing minimum standards and requirements for fatigue management in APPENDIX 5 and 6. The related provisions have been applicable since 5 November 2020.

1.2 FRMS refers to a data-based approach of consistently identifying and managing fatigue-related safety risks based on operation experiences and scientific principles to ensure that personnel work under conditions of sufficient level of vigilance and alertness. The key to the successful implementation of FRMS would require a comprehensive approach that encompasses scientific research, policy considerations, and legal reviews towards dealing with the fatigue experienced by ATCOs.

1.3 This paper aims to introduce studies that the Republic of Korea (ROK) had conducted with air traffic controllers for the past 3 years (2018–2020) and share its current status of fatigue management system, including the implementation plans and experience during the process.

2. DISCUSSION

2.1 A set of studies that ROK conducted to implement a fatigue management system for air traffic controllers are provided below.

2.1.1 First, a study on measures to introduce fatigue management system was conducted in August 2018, in an attempt to explore fatigue management systems that best align with ROK's work environment and meet the international standards prescribed by ICAO.

2.1.2 Second, an empirical research for implementing a fatigue management system was conducted from August 2019 to the end of 2020. The research examined various factors that could possibly contribute to fatigue such as workplace conditions by employing scientific approach that included objective measuring of fatigue, whereby a fatigue prediction model was developed.

2.1.3 Lastly, a development project for a web-based fatigue management system was carried out from March 2020 to computerize the results from empirical research on fatigue management to the work management system. This web-based system provides a variety of functions including personnel management, scheduling for ATCOs, and statistics of their work hour and traffic volume.

2.2 The ROK's method is based on prescriptive limitation regulations. It involves expansion of the existing 3 requirements (consecutive duty hours, consecutive work days, duration of non-duty periods) to a total of 7 requirements identified by ICAO which include both 4 maximum requirements—number of hours in any duty period, number of consecutive work days, number of hours worked in a defined period, and time-in-position—and 3 minimum non-working hour requirements—duration of non-duty periods, number of non-duty days, and duration of breaks between periods of time-in-position. The method is expected to effectively manage fatigue in a safer and more systematic manner.

2.2.1 Since a number of elements played a part such as type of air traffic control service and workload are varied significantly by airports and air traffic control units, such diversity poses a long-term challenge in implementing a single universal standard on the road to the successful implementation of FRMS. The ROK has made extensive efforts to ensure its fatigue prediction model duly incorporates such diverse attributes. For example, not only does the model take into account of basic demographic variables such as age, career and gender, it also considers additional variables such as type of air traffic control service, shift schedule patterns, work days, traffic volume, previous night's sleeping hours, subjective assessment of fatigue and more.

2.2.2 The ROK's studies found that fatigue level for the night shifts was higher than other duty periods. The subsequent focus was naturally on the napping which could be considered an effective means of alleviating fatigue. As the results support that napping could provide beneficial effects of fatigue reduction in a significant manner, ROK is considering about adopting policies that encourage napping.

2.3 The series of studies conducted over the past 3 years have helped ROK take its first step in implementing a fatigue management system. The ROK will remain committed to collecting the best possible scientific data to make sure the system takes root successfully.

2.4 While being mindful that the immediate implementation of FRMS would not be practical at the current state, ROK is seeking to establish fatigue management using time-limit standards which are recommended in prescriptive approach by the first half of 2021. The challenge still remains, however, as most of the civilian ATCOs in ROK are employed as government officials, which means a prolonged period is expected to take until the sufficient number of personnel required for the implementation of a successful fatigue management system is prepared.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information contained in this paper;

b) encourage States to share experience and challenges on their implementation of ATCO's fatigue management system; and

c) discuss any other related matter as appropriate.

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