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WORKING PAPER

ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

FATIGUE MANAGEMENT OF AIR TRAFFIC CONTROLLERS

(Presented by India)

EXECUTIVE SUMMARY

This working paper summarises the learnings gained during implementation of fatigue management for air traffic controllers in India. The scope of improvement during implementation process of the fatigue management is presented to ICAO and states for incorporation in the Standards and Recommended Practices (SARPs) and regulations.

Action: The Assembly is invited to:

a) note India's commitment towards implementation of fatigue management regulations for air traffic controllers which will result in a safer aviation ecosystem;
b) encourage to recognize that a holistic approach for fatigue management is required which enables air traffic controllers to be more productive and less fatigued during their duty; and
c) urge ICAO and its States to share issues and challenges in addressing fatigue management regulations for air traffic controllers.

Strategic Goals:	This working paper relates to *Every Flight is Safe and Secure.*
Financial implications:	Nil
References:	Annex 11 — *Air Traffic Services* Doc 9966, *Manual for the Oversight of Fatigue Management Approaches*

1. INTRODUCTION

1.1 Air traffic controllers is one of the key elements for effective functioning of any air traffic management (ATM) system. Fatigue is a major human factor hazard since it directly affects air traffic controller's ability to perform his job and has implications on aviation safety. Scientific studies have proven that an alert Air traffic controller contributes not only to aviation safety but also in air navigation efficiency by provisioning better Air Traffic Services.

1.2 ICAO mandates every state to establish regulations for fatigue management in air traffic services based on scientific principles, knowledge and operational experience through Amendment 50B of Annex 11 — *Air Traffic Services* applicable from 5 November 2020. States are given the flexibility to implement the fatigue management either through prescriptive limitation regulations or through Fatigue Risk Management system (FRMS).

1.3 India entered the league of nations in Asia by implementing the fatigue management regulations for its air traffic controllers from September 2023.The aviation safety regulator, Directorate General of Civil Aviation (DGCA)- India decided to adapt Prescriptive Fatigue management regulations through Watch Duty Time Limitations (WDTL) regulations after due analysis of practical implementation challenges in the prevailing aviation ecosystem of the country.

2. DISCUSSION

2.1 India is one of the rapidly growing aviation economies and is undergoing a swift development of civil airports connecting different destinations. The number of new air traffic services (ATS) units/Stations are also growing at a steady pace due to rapid growth of air-traffic. Based on decades of operational experience, the air traffic service provider (ATSP) in India (i.e) Airports Authority of India (AAI) has categorized ATS Stations for efficient implementation.

2.2 Accordingly, ATS Stations are categorized based on per day average of volume of traffic in preceding two years taken on 1st October of each year. The airport categorization is summarized as in table below :

Category of ATS Station	Number of average daily aircraft movements
A	> 400
B	> 100 but ≤ 400
C	> 30 but ≤ 100
D	≤ 30
E	Occasional non-scheduled aircraft movements

2.3 The prescriptive limitation regulations for air traffic controllers was adapted through a national regulation in DGCA-Civil Aviation requirements Section 9 Series L Part VII which elaborates the Watch duty time limitations (WDTL) and rest requirements for air traffic control officers (ATCOs) engaged in provision of air traffic services. The prescriptive limitation regulations of India (WDTL regulations) were made not only from ICAO guidelines but also from the global best practices for fatigue management.

2.4 The WDTL regulations are not only comprehensive but are also specific in the duties of ATSP, ATS-in-Charge and ATCO, towards managing the fatigue. It is strongly believed that only a collaborative approach from the ATSP, the senior management and ATCO can help reduce the stress and fatigue encountered in the workplace of an ATCO.

2.5 As per the regulations, the ATSP is required to develop and maintain a fatigue management policy and also provide awareness, rest and recreational ecosystem on fatigue management to ATCOs. Subsequently, ATSP (AAI) developed its Fatigue management Policy (FMP) thereby showing its commitment towards effective management of fatigue. As per the FMP of ATSP approved by DGCA-India, the WDTL regulations will be implemented in totality at all airports which are handling more than 30 aircraft movements in a day (A, B and C category of airports in the table) and with night shift aircraft operations.

2.6 It is mandated that ATSP should ensure the provision of adequate facilities and separate designated rest areas for all ATCOs. Also it is a required to provision facilities for adequate refreshment at each ATS station. Thus a holistic approach is mandated for the ATSP for effective fatigue management in ATCOs. This approach had proven to be very effective in fatigue management of ATCOs at all airports where the WDTL regulations have been implemented.

2.7 The WDTL regulations also mandates ATS–in-charges to make schedules/rosters within the limits specified in the regulations. As per the regulations, ATSP is required to publish schedules/roster at least five days in advance for a period of at least two weeks.

2.8 The ATCOs in India are not only required to comply with the WDTL guidelines but also are mandated not to perform any safety relevant tasks when fatigued.

2.9 The WDTL regulations provides limits on the duty period, interval between the duty period and limit on and interval following consecutive duty period. The limits on operational duty and break during operational duty is also prescribed. The length of night duties and intervals after night duties are specified in the limitation guidelines. The WDTL regulations provides also incorporates flexibility by allowing variations in exceptional circumstances such as operational disruptions.

2.10 The introduction of fatigue management regulations through WDTL guidelines have streamlined the work pattern and mitigate the risk arising out of fatigued ATCOs.

2.11 The WDTL regulations implementation journey was not very smooth, due to the diversity of airports in India. During the first phase, fatigue management regulations were implemented across 57 airports and is being continually implemented at all (A, B and C category of airports in the table) airports in a phase- wise manner. It is planned for 100 per cent implementation of Fatigue management regulations (WDTL regulations) by the year 2026 as committed through Fatigue management policy.

2.12 The additional manpower requirement at different ATS-Stations due to rapid retirements and delayed recruitments especially during Covid-19 pandemic is a major challenge towards implementation of fatigue management regulations in India. Also sudden exigencies such as regional conflicts wherein air-traffic is diverted through different routings /airspace, have become frequent and also require more manpower. It was realized that ATSPs throughout the world recruit ATCOs on need-basis in order to maintain minimal operational costs and are functioning mostly with shortages of ATCOs, thereby creating roadblocks towards effective fatigue management implementation.

3. CONCLUSION

3.1 A Fatigue Management Policy by the ATSP is required to be mandated in order to obtain a clear commitment from ATSP towards management of fatigue of ATCOs.

3.2 The environment and situational demands of air traffic controllers are primarily different from the flight crew in terms of a fixed location and by the nature of duties. Therefore, a holistic approach by provisioning ambient work environment, and adequate recreational facilities apart from an effective fatigue management regulation are required to be mandated as standards in the Standards and Recommended Practices (SARPs) (Annex 11).

3.3 The assembly may consider mandating the states to foresee, assess and recruit not only the required ATCOs for present scenario but also maintain a certain percentage of additional workforce through consistent recruitment programs, to factor for future expansion, contingency, attrition and other unforeseen circumstances.

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