



Fatigue Risk Management Systems (FRMS)

Introduction

In November 2011, the International Civil Aviation Organization (ICAO) released an amendment to Annex 6 *Operation of Aircraft*, Part 1, Section 4 Flight Operations and Appendix 8 FRMS Requirements. The amendment introduced a science-based approach to flight and duty time limitations (FTLs) and provided a framework for Regulators to facilitate regulation to oversee FRMS. Prior to this amendment, the only international standards available for managing fatigue in flight operations were related to prescriptive FTLs.

The traditional regulatory approach to manage crewmember fatigue has been to prescribe limits on maximum flight and duty hours, and required minimum breaks within and between duty periods. It is a one-size-fits-all approach that does not take into account operational differences. FRMS is an enhancement to FTLs, enabling an operator to customize FTLs to better manage fatigue risk to the operation. There is scientific and operational support that FRMS will become a means for effectively mitigating fatigue risks.

ICAO, IATA & IFALPA released an *FRMS Implementation Guide for Operators*¹ and ICAO an *FRMS Manual for Regulators*² which provide detailed information for Operators and Regulators on implementing FRMS.

All States are currently required to have prescriptive regulations (FTLs) for fatigue management. This requirement will continue whether or not they choose to implement regulations for an FRMS.

What is an FRMS?

ICAO defines an FRMS as 'A data-driven means of continuously monitoring and managing fatigue-related safety risks, based on scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.' (ICAO, 2011)

FRMS, by applying the Safety Management System (SMS) principles of risk identification, assessment, mitigation and monitoring, provides a performance-based approach to manage fatigue risk.

Like SMS, FRMS seeks to achieve a realistic balance between safety, productivity and cost.

¹ *FRMS Implementation Guide for Operators*, 1st Edition, July 2011, IATA, ICAO, IFALPA

² *FRMS Manual for Regulators*, ICAO Doc 9966, 2011 Edition

FRMS Principles

The FRMS Implementation Guide for Operators was a result of the combined efforts of ICAO, IATA & IFALPA, representing the three parties to FRMS; the regulator, the operator and the crewmember. Trust between all parties is vital to ensure the success of FRMS.

A key feature of FRMS is that responsibility for managing fatigue risk is shared between operators and individual crewmembers. For example, operators are responsible for providing rest opportunities while crewmembers have a responsibility to use rest periods effectively.

As in SMS, the FRMS relies on the concept of an “effective reporting culture” with active involvement of all stakeholders where personnel are constantly encouraged to report hazards whenever observed in the operational environment for the attainment of optimum safety levels and a continuous improvement program.

What are the benefits of FRMS?

Generic prescriptive regulations (FTLs) may not address operational peculiarities and complexities. FRMS policies and procedures focus on the operator’s specific operations (e.g., continuous duty overnights, night versus day operations, short-haul versus long-haul, etc.). Therefore, an FRMS allows an operator to adapt policies, procedures and practices to the specific conditions that result in fatigue risk in a particular aviation setting. Operators may tailor their FRMS to meet their unique operational demands and focus on fatigue mitigation strategies that are specific to their operational environment.

In addition to fatigue mitigation, some of the benefits of an FRMS are:

- A reduction in fatigue related errors, incidents and accidents – which may be associated with financial costs and/or impact an operator’s reputation.
- Reduced insurance costs – some insurers may reduce premiums if the operator can demonstrate that fatigue risk is being managed.
- Reduced absenteeism – operators may notice a decrease in sickness and other absences which were related to fatigue.
- Attracting and retaining crew – ‘fatigue friendly’ rosters may attract and retain crew as a result of an improved work/life balance. Fatigue at work is more effectively managed, increasing morale.

Summary

FRMS provides a performance-based regulatory approach which defines requirements for operators to manage fatigue risk, rather than only prescribing FTLs that may not consider aspects specific to the organization or operating environment.