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# FRMS SARPs and their Intent



# Overview



- SARPs, regulations and policies
- Outline of fatigue management provisions
- Focus on fatigue management SARPs
- Information sources

# SARPs, Regulations and Policies



- ➔ ICAO provides provisions (SARPs and guidance material) to the States;
- ➔ The States establish regulations in accordance with the SARPs;
- ➔ Operators develop policies to comply with their State's regulations.

# ICAO Provisions



## → Annexes

- Standards (shall)
- Recommended Practices (should)
- Appendices (Standard = shall)
- Attachments (guidance)

## → Guidance Material

- Manuals
- Circulars

# Fatigue Management Provisions



## ➤ Fatigue Annex 6 Part 1 – flight and cabin crew

- Standards and Recommended Practices (SARPs)
- Appendix 8
- Attachment A (guidance for FTL regs)

## ➤ FRMS Guidance

- Operators
- Regulators



# Fatigue Management Approaches



- Prescriptive flight and duty time limitations
  - Identified by regulator
  - One-size fits all
  - Arbitrary “safety” line
- Fatigue Risk Management System (FRMS)
  - FTLs identified through operator’s FRMS processes
  - Specific to operational context
  - Continually evaluated and updated

# FRMS Defined



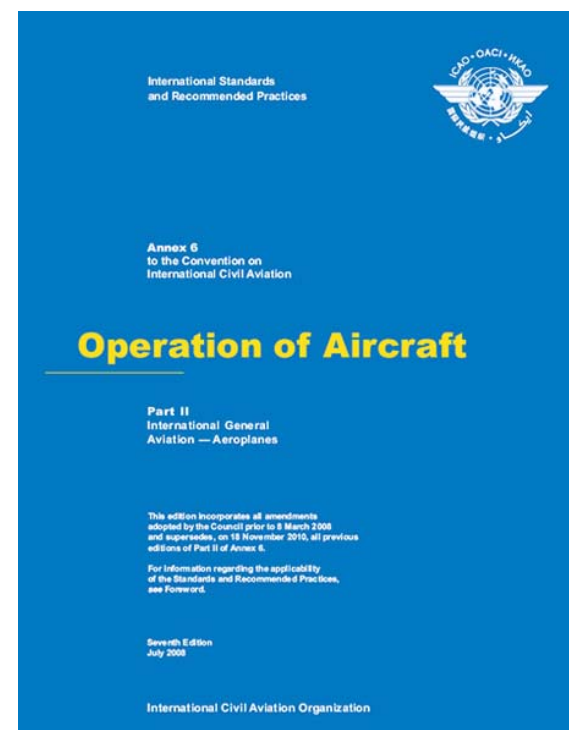
- A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon **scientific principles and knowledge** as well as **operational experience**, that aims to ensure relevant personnel are performing at adequate levels of alertness.

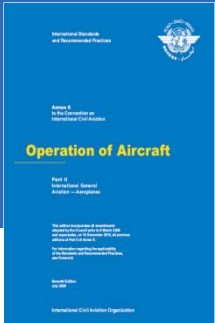


# Fatigue Management SARPs: 4.10

Annex 6 Part I: Combines all fatigue management standards into one section in Chapter 4:

- Prescriptive Flight & Duty time limitations
- FRMS





# FM SARP: 4.10.1

## → The State:

Must have regulations for managing fatigue based on scientific principles

- Mandatory Prescriptive Regulations
- Optional FRMS Regulations

# What are the scientific principles?



- The physiological need for sleep:
  - Quantity
  - Quality
- Recovery from sleep loss
  - Transient
  - Cumulative
- Circadian biological clock



# FM SARP: 4.10.2



## → The Operator:

Where FRMS regulations are offered, can choose how to manage their fatigue risks

- Complying with prescriptive regulations; or
- An FRMS for all operations; or
- An FRMS for some operations and prescriptive regulations for the remainder of the operations.



# Intent



## ✈ No FRMS –

- Fatigue risks managed within constraints of FTLs using SMS processes

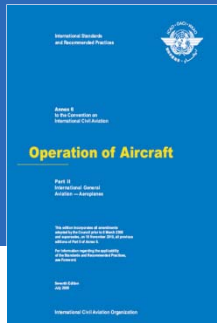
## ✈ FRMS –

- FRMS requirements over and above SMS processes
- “FTLs” are identified through FRMS processes and may be more or less than prescriptive limits
- FRMS approach can be used within FTLs



# FM SARP<sub>s</sub>

- 4.10.3 Variations to FTLs on the basis of a risk assessment.
- 4.10.4 FRMS processes must be functioning before approval can be given by the State.
- 4.10.5 **FRMS - Outer parameters to be identified by operator.**
- 4.10.6 **FRMS minimum requirements**
- 4.10.7 **Recommendation: FRMS integrated with SMS.**
- 4.10.8 Maintain records of flight and duty periods.



# FM SARP<sub>s</sub>



4.10.3 Variations to FTLs on the basis of a risk assessment.

4.10.4 FRMS processes must be functional before approval can be given by State.

4.10.5 FRMS - Outer parameters determined by operator.

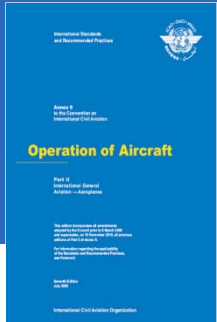
4.10.6 FRMS minimum requirements

4.10.7 Recommendation: FRMS integrated with

- Identify hazards and assess risk
- Mitigate
- Monitor

4.10.8 Maintain records of flight and duty periods.

Appendix 8



# FM SARP<sub>s</sub>



## 4.10.3 Variations to FTLs on the basis of a risk assessment.

/

## 4.10.7 Recommendation: FRMS integrated with SMS.

## 4.10.8 Maintain records of flight time limitation periods.

- Can build upon existing processes
- Ensure appropriate distribution of resources
- Appropriate prioritisation of risks



# FM SARPs



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# Appendix 8



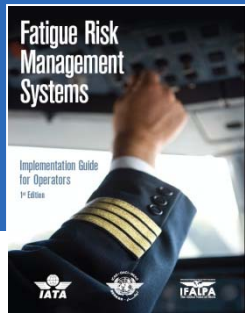
- Details the minimum requirements for an FRMS
- Highlights similar FRMS and SMS frameworks

## SMS Components

- Safety policy & objectives
- Safety risk management
- Safety assurance
- Safety promotion

## FRMS Components

- FRMS policy & documentation
- Fatigue risk management processes
  - Identification of hazards
  - Risk assessment
  - Risk mitigation
  - Implementation
- Fatigue safety assurance processes
  - Monitor effectiveness of FRMS
  - Processes for managing change
  - Continuous improvement of the FRMS
- FRMS promotion processes
  - Training programmes
  - FRMS communication plan



# FRMS Guidance Material



## → FRMS Implementation Guide for Operators

## → FRMS Manual for Regulators

- Provide detailed guidance to support new FRMS SARPs.
- Are based on the work of ICAO's FRMS Task Force.
- Apply current scientific knowledge and tools plus industry best practice.
- Are aligned.
- Are freely available on the web.

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22/5/12 - 25/5/12

ICAO, Montréal, Canada

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ICAO Symposium on Regional Safety Oversight Organizations (RSOOs)	26/10/11 - 28/10/11	ICAO, Montréal, Canada
Global Air Navigation Industry Symposium; Preparation for the Twelfth Air Navigation Conference	20/9/11 - 23/9/11	ICAO, Montréal, Canada
Fatigue Risk Management Systems (FRMS) Symposium and Forum	30/8/11 - 2/9/11	ICAO, Montréal, Canada

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**Initiatives**

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Address by Dr. Cur

**FRMS: What it is, and What it isn't**  
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FRMS Symposium 2011, Montréal, Canada

### Welcome to the ICAO Fatigue Management Site



ICAO is working to provide States and operators with provisions that will help them to better manage fatigue-related risks. We'll be continuing to develop this site and build up our bank of tools and information for your use.

**On this site, you will find:**

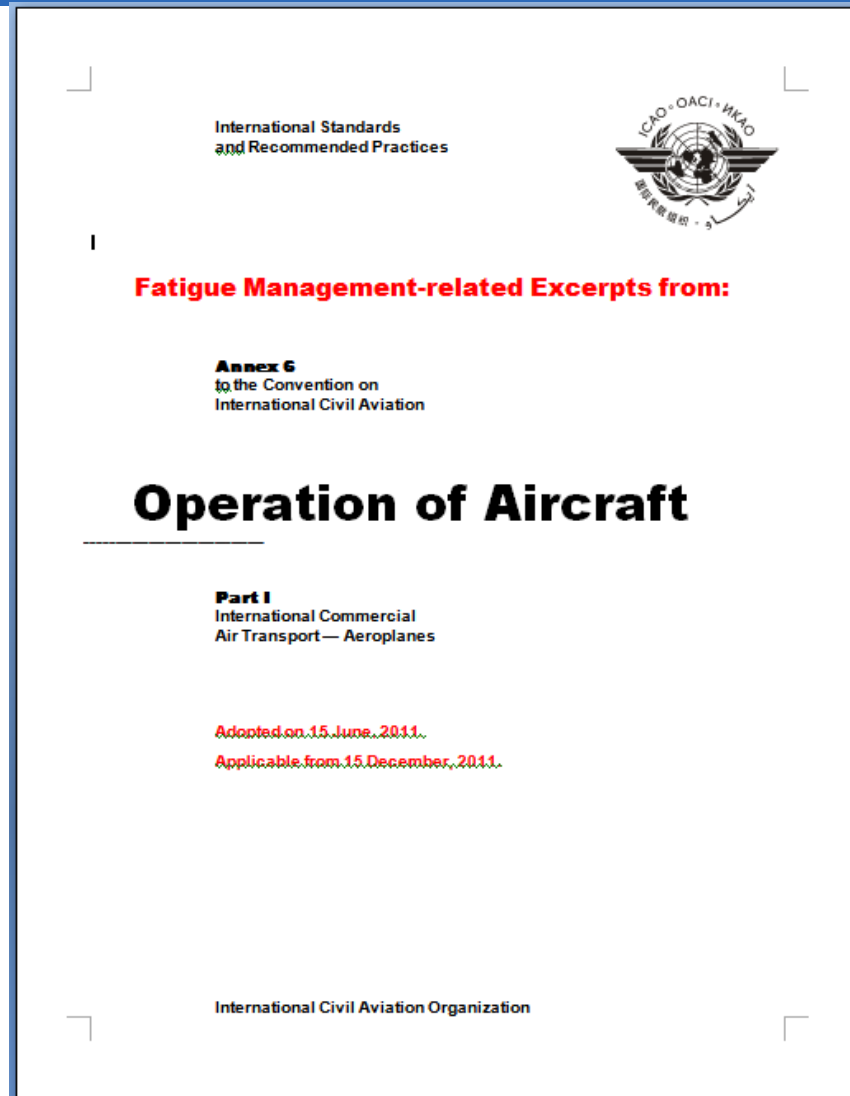
- Information on related ICAO events, including the FRMS Symposium (30-31 August, 2011)
- Provisions for prescriptive and performance-based methods of managing fatigue
- Practical guidance on the oversight and implementation of Fatigue Risk Management Systems
- FRMS tools for use by operators and regulators
- Information on FRMS Workshops to be conducted by ICAO, IATA and IFALPA

**In the future, we intend to include:**

- Examples of Best Practices related to managing fatigue-related risks from around the globe
- Links to useful fatigue management sites
- Computer-based training on FRMS oversight

For more information, please contact: [FatigueManagement@icao.int](mailto:FatigueManagement@icao.int)


# Fatigue Management SARPs



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## Fatigue Management Documents and Toolkits

These documents and toolkits were developed to support the SARPs pertaining to FRMS in Annex 6, Part I, which relates to specifically flight and cabin crew.

However, other safety-critical personnel, such as air traffic controllers and maintenance engineers can also benefit from taking an FRMS approach to managing their fatigue-related risks. The general principles of an FRMS approach, as discussed in these manuals, are broadly applicable across the aviation industry.

To download a specific document, locate the "Download" column and click on the "Click here" hyperlink.

### DOCUMENTS AND TOOLKITS

Icon	Title	Author	Revision	Download
<b>Scope : Fatigue Risk Management Systems (FRMS) (2)</b>				
	FRMS Implementation Guide for Operators	ICAO / IATA / IFALPA	1st Ed. / Jul. 2011	<a href="#">Click here</a>
	FRMS Manual for Regulators (Doc 9966)	ICAO	2011 Unedited Version	<a href="#">Click here</a>
<b>Scope : Prescriptive Flight and Duty Time Limitations (1)</b>				
	Guidance Material for Development of Prescriptive Fatigue Management Regulations	ICAO		<a href="#">Click here</a>



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