

The ICAO Fatigue Risk Management Systems Task Force

RASG – PA/2
Mitchell A. Fox
Chief Flight Safety Section
International Civil Aviation Organization
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Overview

- Fatigue issues
- Fatigue Management
- Fatigue Risk Management
- The future



Why is fatigue a safety concern?

➤ Associated with performance declines

- Less vigilant
- Increasingly variable but overall slower reaction times
- Forgetfulness
- Inattention
- Poor decision-making
- Apathy
- Mood swings
- Diminished communication
- Non-reactive - ASLEEP



What Causes Fatigue?

- Task-related factors
- Circadian factors
- Sleep-related factors



How have we managed fatigue to date?

- **Limit hours of work (FDLs)**
 - Addresses fatiguing nature of increasing hours of work
 - Ignores other factors
 - Limits identified by industrial agreements
 - Numerous exemptions granted



Fatigue Management

The State of the Operator shall establish regulations specifying the limitations applicable to the flight time, flight duty periods, duty periods and rest periods for flight and cabin crew. (Guidance in Attachment A to Annex 6).



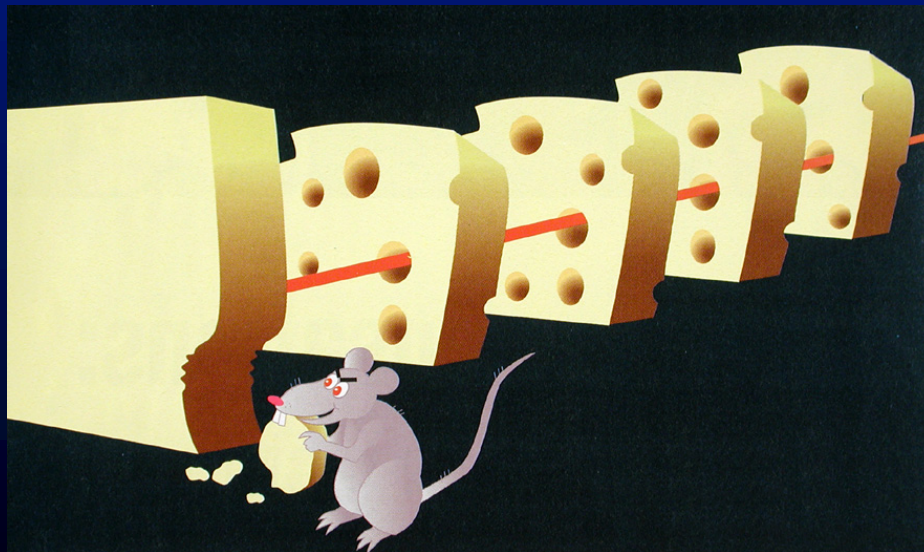
What is FRMS?

- **An organisational approach**
- **An on-going and adaptive, data-driven, continuous improvement programme for managing fatigue.**
- **Aims to manage fatigue irrespective of the causes**
- **Based on science and empirical findings**
- **Enables greater operational flexibility (e.g. ULR)**



Why move to FRMS?

- Prescribed limitations provide only “one slice of cheese”
- FRMS provides more defence barriers



FRMS TF- Background

- 2003 – ICAO Operations Panel forms FTL Subgroup to develop guidance material for developing prescribed flight and duty time limitations to manage fatigue.
- 2003 - Flight Safety Foundation international task force develops ULR guidelines based on fatigue risk management (FRM) principles.
- 2006 – ICAO Operations Panel forms FRM Subgroup to develop FRMS guidance material.
- 2008 – Introduction of FRMS to Annex 6 proposed in a Working Paper.
- Need identified for detailed guidance on how to implement and oversee FRMS.
- August, 2009 – Secretariat forms FRMS Task Force.



What are we proposing?

- Clearly defined FRMS minimum requirements (SARPs)
- Detailed guidance for implementation and oversight
- Examples of various means of compliance for different types of operations



The SMS / FRMS Relationship

SMS Framework	FRMS
1. Safety policy and objectives	1. FRMS Policy and Procedures
2. Safety risk management	2. Fatigue risk management processes - Detection, reporting and investigation of fatigue risk based on objective operational data and self reports; - Reactive and proactive measures (e.g. scheduling, rostering, rest periods, etc) - Reporting, investigating and recording incidents/accidents
3. Safety assurance	3. Fatigue safety assurance - Fatigue Monitoring and Measurement - Processes for managing changes to the operational environment, within the organisation, or to the FRMS itself. - Continuous improvement of the FRMS
4. Safety promotion	4. Fatigue training and awareness Programme



FRMS TF Approach

- Represents a novel approach for ICAO
- Wide ranging participation
 - Geographical
 - Background
- Work together in a virtual office
 - Actual meeting in Montreal, this week



FRMS TF– Members and Advisors

States	Organisations	*Operators	Scientists
Australia Canada China France Germany Japan New Zealand Nigeria Singapore United Arab Emirates United Kingdom United States	EASA IATA ICCAIA - *Boeing *Airbus IFALPA	Delta Airlines Emirates Airlines Etihad Airways Qantas easyJet Air New Zealand DHL Singapore Airlines Lufthansa	Prof. Philippa Gander (NZ) Prof. Philippe Cabon (FR) Dr Greg Belenky (US)

* Advisors to member States or organisations.



FRMS TF- Leadership

- **TF Leader: Curt Graeber, PhD**
 - Lead Scientist, NASA Fatigue Countermeasures Group
 - Senior Technical Fellow, Chief Engineer Human Factors - Boeing Commercial Airplanes (Ret)
 - Organizer and Co-Chair, FSF International Ultra Long-Range Crew Alertness Initiative, June 2001-05.
 - Chair, ICAO Flight Time Limitations Subgroup, 2004 - 05.
 - Chair, ICAO Fatigue Risk Management Subgroup, 2005 - 08.
- **TF Tech Coordinator: Michelle Millar, PhD**
 - Sleep/Wake Research Centre (Massey University), Auckland University, Otago University.
 - Scientific expert in sleep, fatigue and performance
 - FRMS Consultant to CAANZ, CASA
- **ICAO:**
 - Flight Safety Section, Air Navigation Bureau



FRMS TF- Work Arrangements

- **Role of the Members:**
 - submit official input to TF
- **Role of the Advisors:**
 - provide guidance and input to members for consideration.
- **Role of the Regional facilitators:**
 - encourage timely input and close collaboration among regional groups.



FRMS TF Proposed Outcomes

- To provide standards and guidance which:
 - Are based on joint industry-government consensus;
 - Identify various operationally viable methods;
 - Assure appropriate regulatory oversight;
 - Improve ability to manage fatigue in aviation industry;
 - Allow greater operational flexibility than prescriptive limits.



For....

- **Annex 6, Part 1 Operators:
International Commercial Air
Transport – Aeroplanes**

- **Flight crew and cabin crew**



Beyond the FRMS TF...

- **FRMS offers a systemic approach :**
 - **Maintenance engineers**
 - **Dispatchers**
 - **Schedulers**
 - **Management**
 - **Baggage Handlers**
 - **Air Traffic Controllers**



Thank You

