



DIRECTION DE L'AVIATION CIVILE  
GRAND-DUCHÉ DE LUXEMBOURG



# Introduction to FRMS oversight

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LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG  
Ministère du Développement durable  
et des Infrastructures

Direction de l'aviation civile



# Content

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- Introduction
- Fatigue
- Management System
- Oversight
- Conclusions



# Where are we?

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- Introduction
- Fatigue
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# Introduction

- Direction de l'Aviation Civile:
  - Competent authority in Luxembourg
  - 8 AOC holders
  - DAC has not yet approved an FRMS but a derogation [to national rules] has been granted to Cargolux based on the demonstration of an equal or better level of safety based on FRM principles



**cargolux**



# Introduction

- Fatigue Risk Management System:
  - Performance-based regulation
  - The oversight in such regulatory system is a complex exercise
  - First thing to do is to clearly understand the concept
  - Once it is understood we can start thinking about the oversight
  - This reflects the point of view of an ops inspector regarding the approval & oversight of FRMS



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# Fatigue

- ICAO definition is only addressing crew members!

➤ Fatigue is also affecting other actors

➤ In a next step, FRMS could also address maintenance technicians, ATC personnel, ground handling personnel...





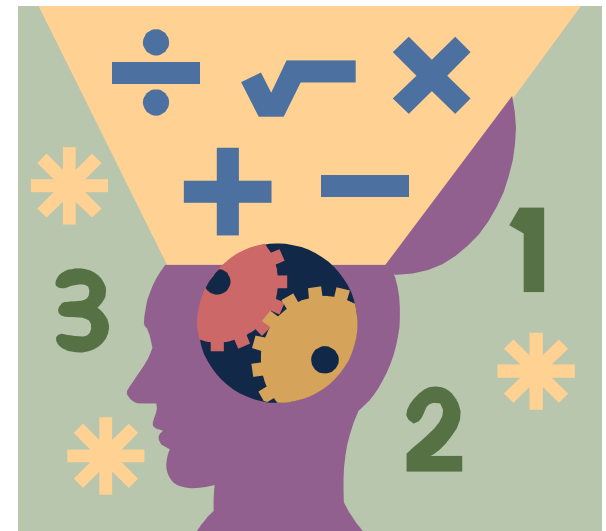
# Fatigue

- Fatigue is a hazard!
  - Even if operators do not have an FRMS in place, fatigue still need to be managed by the SMS
  - A dedicated system [FRMS] is required in order to apply performance-based rules for FTL



# Fatigue

- Fatigue is complex and subjective:
  - Individual physiology
  - Sleep history
  - Quality of sleep
  - Stress
  - Workload
  - ...

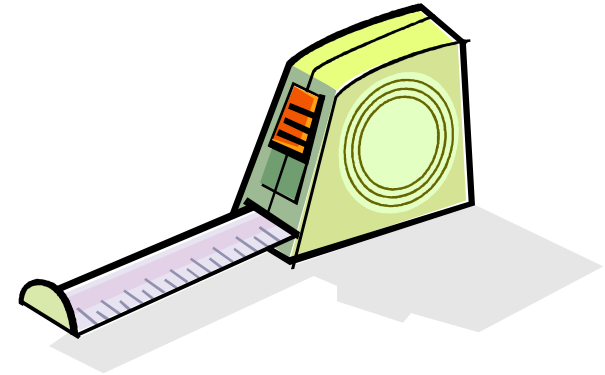




# Fatigue

- Therefore:

- Difficulties to measure
- For the oversight, it is important to understand and to assess the way the operator is measuring fatigue





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# Management system

- What is a **management** system?
- **Management** = Coordinated activities to direct and to control an organization [ISO 9000:2005]



# Management system

- What is a management **system**?
- **System** = Set of interrelated or interacting elements [ISO 9000:2005]





# Management system

- What is a **management system**?
- **Management System** = System to establish policy and objectives and to achieve those objectives [ISO 9000:2005]



# Management system

- If we apply this to FRMS:
  - Fatigue Policy
  - Objectives
  - To achieve those objectives:
    - ➔ Risk management processes
    - ➔ Safety assurance processes
    - ➔ Promotion processes



# Management system

- A Management System enables to manage complexity
- Fatigue is a complex concept and therefore, FRMS is a solution to manage this complexity



# Management system

- SMS is the closest management system from FRMS:
  - Some processes can be shared
  - Those systems are based on an effective safety reporting culture
  - Those 2 Management Systems can be integrated
  - FRMS goes beyond SMS for fatigue risks management



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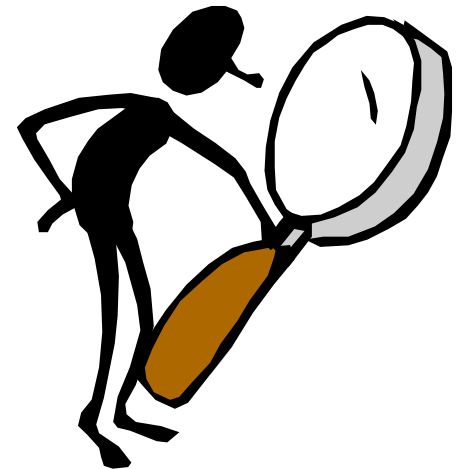
# Oversight

- Current situation in Luxembourg:
  - Approved derogation for Cargolux based on FRM principles
  - Initial evaluation of the methodology used by Cargolux was performed
  - Continuous oversight is achieved by monitoring crew fatigue on the specific approved routes
  - Procedures to approve and to assess a full FRMS still need to be developed



# Oversight

- How to approve & to perform the oversight of an FRMS in the future?
  - Initial evaluation of the FRMS
    - ➔ Documentation
    - ➔ Full audit
  - Continuous oversight of the FRMS
    - ➔ Audits / inspections programme
    - ➔ Analysis of updates to the documentation
    - ➔ Monitoring of operators' changes





# Oversight

- Experience gathered with the SMS oversight is useful:
  - FRMS should be implemented in a phased approach
  - A mature SMS will help to the FRMS implementation
  - Start FRMS with a defined part of operations (e.g. specific routes...)
  - The performance of the FRMS should be assessed



# Oversight

- Inhibitors to an effective FRMS:
  - Lack of data
  - Lack of just culture
  - Lack of trust in the management
  - FRMS not customized
  - Use of FRMS only to justify operations





# Oversight

- Just Culture within an FRMS:
  - The key element to get reports
  - Difficult to build up but easy to ruin
  - Fatigue is more than a physiological problem, it is an ethical problem [Pr. Sidney Dekker]
  - One of the most frequent reason for not reporting fatigue is a fear of punitive actions from the employers [OIG report AV-2011-176]





# Where are we?

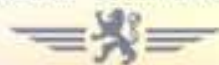
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# Conclusions

- FRMS oversight requires:
  - Qualified resources
  - Close continuous oversight of the FRMS performance
  - Being alert to operator's changes
  - Standardized performance assessment
  - Effective just culture



# Conclusions

- ICAO Doc 9966 provides excellent guidance
- SMS experience is helpful



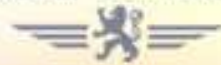


# Conclusions

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“FRMS can be one of those rare “win-win” programs”

William R. Voss ex-President & CEO of FSF  
AeroSafetyWorld Sep 2011



# Conclusions

- Thanks for your attention

- Questions?

