Regulation in plain words

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Regulation In Plain Words

- What it means for the Regulator
- What it means for the Operator
- Implementing an FRMS
- Demonstrating Equivalent Level of Safety
- What Good Looks Like
- Continuous Process

First Things First

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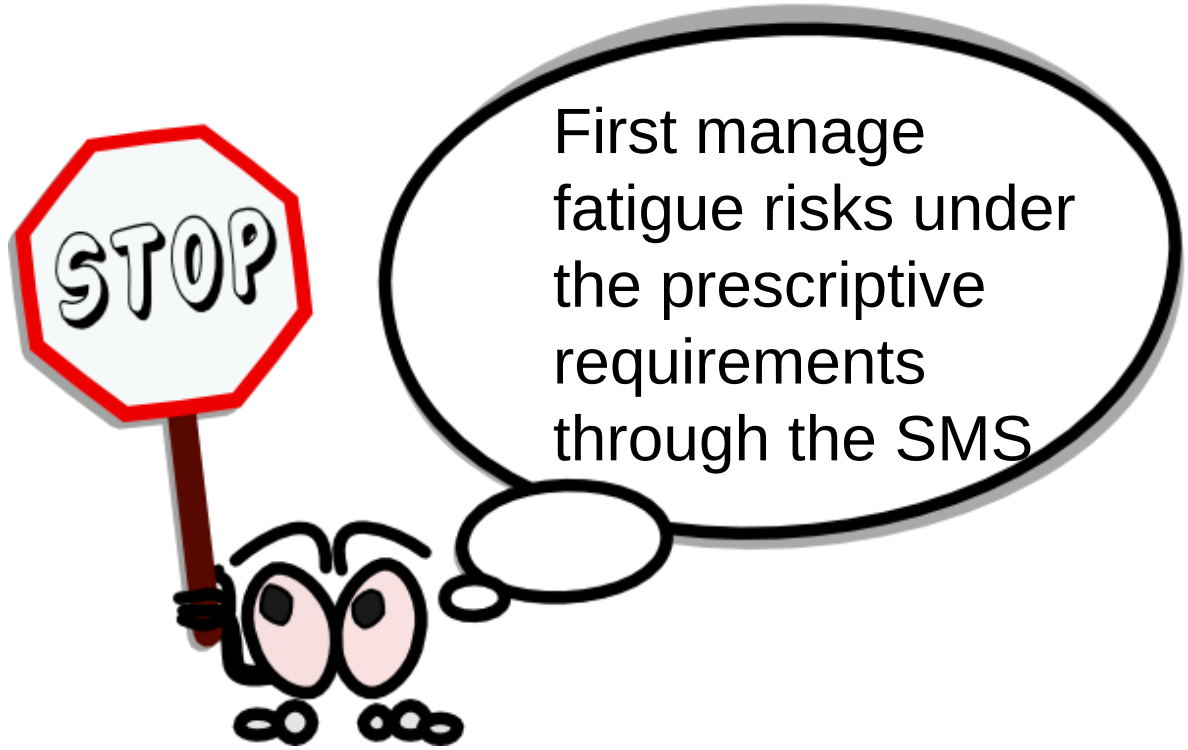
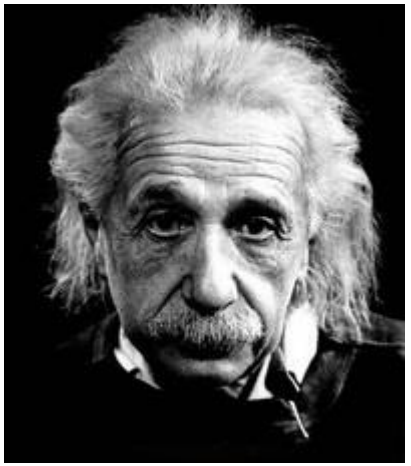


It’s Simple, or is it?

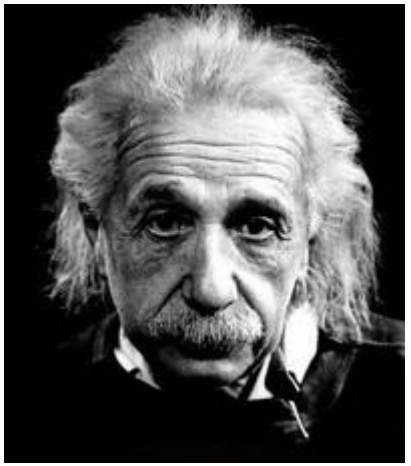
- Write down the issue
- Think about it
- Write down the answer

- “If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.”
  — Albert Einstein



Well maybe not so simple

- “Fatigue” can be tricky to measure
- **Need a variety of measures**
- Some measures require specialist knowledge
- Fatigue needs to be measured as part of an FRMS to:
  - Identify times of higher fatigue risk
  - Monitor effectiveness of mitigations
- Continuous review process required



ICAO Guidance

Manual for the Oversight of Fatigue Management Approaches

- Explains the intent of the SARPs
- Provides scientific background
- Explains the prescriptive regulation development as well as FRMS
- Discusses approval and oversight of FRMS

Fatigue Management Guide for Airline Operators

- Summarises supporting science
- Explains prescriptive and FRMS approaches
- Describes how to implement an FRMS
- Provides examples of various means of compliance

Role of the Regulator

- Ensure that the operator is managing their fatigue related risks to an acceptable level of safety
- Recognise that an FRMS needs to be unique to each operator
- Recognise that operational maturity is required for a successful FRMS implementation

What a Regulator needs to develop FRMS Regulations

- A platform of robust prescriptive flight and duty limitation regulations
- Time and resources to develop sufficient knowledge related to fatigue management processes.
- Access to scientists.
- Experience in oversight of performance-based regulations.
- Clear approval and oversight processes

Challenges for the Regulator

- Providing a regulatory environment that supports effective safety reporting
- Performance-based regulations require different regulatory skill sets
- Assessing the balance – flexibility within tolerable risk
- Provision of consistent and comprehensive guidance to operators
- Consistency in regulatory decisions

Questions the Regulator will ask themselves

- Has the operator demonstrated they have been able to collect meaningful data and translated it into useful information?
- Have the scientific principles been used appropriately?
- What has been the benchmark to establish the equivalent level of safety?
- Is the baseline scenario reasonable?
- Are all the statements supported by evidence?
- Does the evidence support the claims?
- Are the proposed mitigations effective to manage the fatigue risk?
- What assurance actions are proposed?
- Has the equivalent level of safety been demonstrated?

Moving to FRMS

- The operator needs to be able to demonstrate fully that they are meeting the prescriptive requirements **BEFORE** developing an FRMS

Questions an Operator will be asked

- What is your understanding of the regulations?
- What is your understanding of how the regulations work in your operation?
- Why you believe that you can demonstrate through a safety case that what you are planning to do provides at least the same or a better level of safety?
- What are you going to do to demonstrate that it actually does achieve the predicted level of safety in your operation?

Is your aviation professional worker……

An alien?

Or a person?

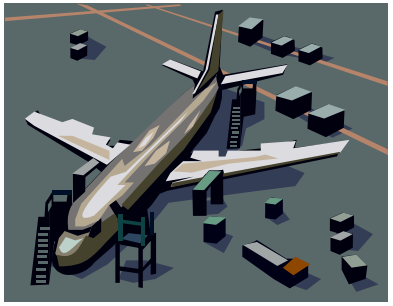
Core Principles to be managed

Civil Aviation Authority

- Sleep Loss
- Extended Wakefulness
- Circadian Phase
- Workload

Workload – Task related considerations

- The mental or physical demand
- Environmental conditions
- Airports
- Aircraft
- Experience
- Facilities for support
- Type of operation



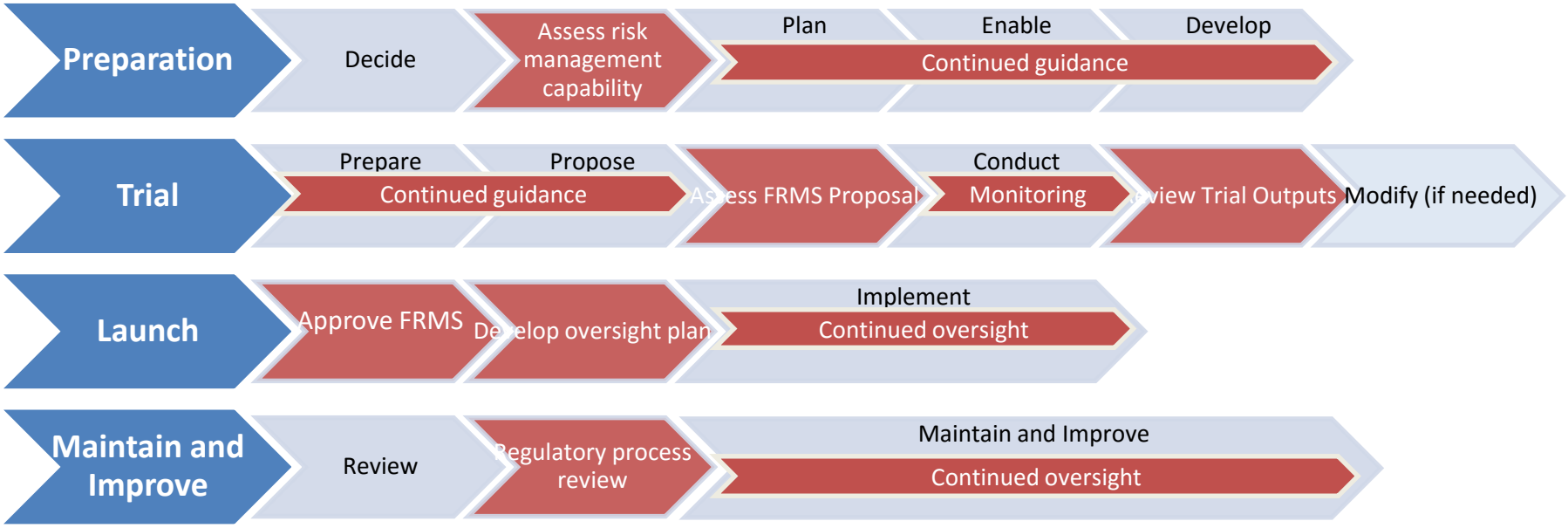
Question for the Operators
Are we ready for FRMS?

- Operator must assess their ability to operate under an FRMS
  - Commitment
  - Reporting Culture
  - Resources
  - Gap Analysis
- Must develop internal oversight process

FRMS Implementation

- There is no ‘off-the-shelf’ version of an FRMS that will suit all operators
- An FRMS needs to be developed, understood and managed by people who have comprehensive experience in the complex operational environment to which it will apply
- A fully functioning FRMS doesn’t happen overnight
- Implementation is necessarily accomplished in phases

FRMS Implementation and Approval Process



Actions
Blue – Operator
Red - Regulator

First steps

- Needs to be methodical
- Clear language
- Remember data is not the same as information – data drives the process when it is processed into something that is meaningful and useful (relevant to the case being presented)
- Do you need support from a Subject Matter Expert (internally and / or externally)?

Project Plan

BACKGROUND

Research

Challenges for Operators

- Current compliance issues
- Development of Fatigue risk assessment process
- Over-reliance on model outputs
- Under-valuing subjective information (SME, individual, FSAG)
- Monitoring and evaluation not well developed
- Poor feedback process

Establishing a baseline

- Comparison must be made to the FTL regulations
- Identify operational specific fatigue risks and mitigations
- Demonstrate knowledge of operational context
- Demonstrate knowledge of known responsibilities
- Demonstrate stakeholder engagement process

Core principles

- Identify similar long duties or combinations and some performance measures to assess (hours of sleep / alertness / behaviours)
- Understand how different options present themselves and how accurate the tools used reflect reality
- Mitigations must address the fatigue risk
- Demonstrate how the proposed mitigations are going to address the identified issues and produce an equivalent level of safety
- Assurance processes contain robust and varied measures

Using Models

- **All models have limitations**
- Good tool for comparison tasks
- Good tool for prediction where no other data exists (ULR)
- Good tool for meta data
- Don’t reduce decision making to model output – e.g. score
- Should not replace good practice scheduling principles
- Cannot be used to assess an individual
- Appropriate instruction and training essential

What good looks like

- Clear objectives, scope and measures of success (SPI's)
- Considerations of operation context
- Scientific principles clearly considered
- Fatigue reporting policy and process
- Acceptance – assessment / demonstration
- Change assessment for operation

What good looks like (cont'd)

- Unique Risk assessment process
- Mitigations (various)
- Ongoing review
- Management commitment
- Ongoing internal data collection and analysis methods
- Gap analysis – known unknowns
- Checklist – Internal / Regulators

FRMS Continuous Process

- Assess agreed performance indicators and mitigation measures using information from the assurance process
- Work to adjust mitigations and/or limits, if required
- Set up continuous review programme including change management process

Summary
An FRMS Requires

- A culture change that supports different attitudes and behaviours
- Managing risks rather than eliminating a problem
- Shared responsibility
- Acknowledge/address complexity
- Requires multiple solutions
- Science-based/data-driven solutions
- Evolve/integrate new science/data
- Continuous evaluation to maintain / improve

Thank you for your attention