

The Global Voice of Pilots



IFALPA

Global Review of Fatigue Management: Existing Challenges & Next Steps

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Time for a Review

Industry stakeholders are recognising the need for a **review & update** of the **ICAO Fatigue Management provisions/manuals**.

IFALPA aims to put FRM back on **ICAO's work plan**, with the establishment of an expert group.

- Science review/update/gap analysis.
- Mindful of original intentions – how did we do in review?
- Consider the practical implementation challenges and realities.

IFALPA/Pilot Experiences

The **experiences & insights** of FM Implementation Challenges are **drawn from**:

- Feedback provided by IFALPA's **Member Associations**
- IFALPA's Fatigue Management Working Group (**FMWG**)
- Experiences from facilitating the IFALPA **FM Course**
- Industry and academic **research and publications**
- Liaising with **fatigue scientists and industry associations**
- And **other sources** and material

How can the aviation industry strengthen its resilience in the face of growing complexity?

Join us at the EUROCONTROL headquarters in Brussels, as we explore the critical factors of mental health, well-being, fatigue, and workload management, all essential to ensuring resilience in an evolving industry. With aviation operations expected to double in the next 20 years, the role of human resilience has never been more crucial.

Let's discuss how we can protect and enhance the human element that drives safety and operational success.

Source: The Flight Safety Foundation



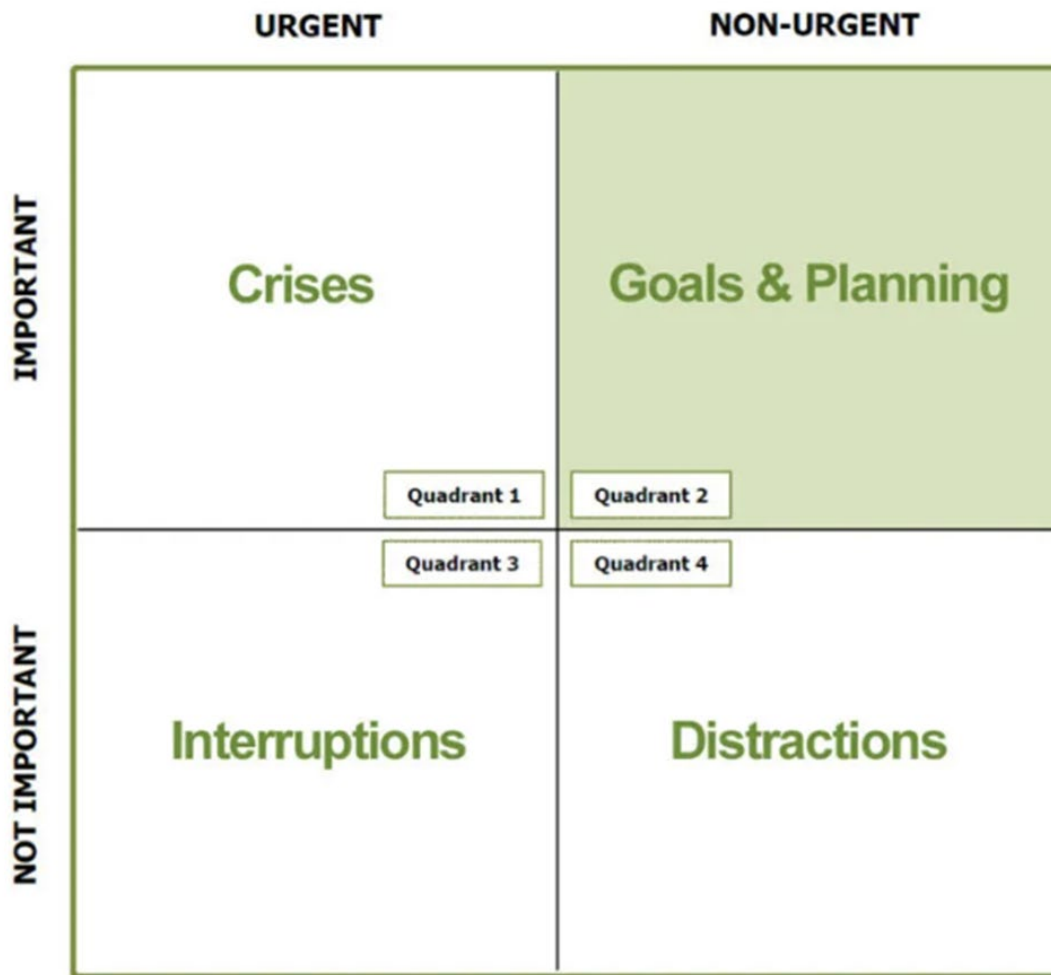
Growing Complexity?

The context of the review of FRM provisions and Guidance Material.

How much complexity is too much? Helping or hindering?

An imbalance has been observed between the **intention** of the fatigue management provisions and guidance material and the **practical implementation**.

The Urgent Important Matrix Quadrants



Source: The Coaching Tools Company.com



Finite Resources and Time

The **URGENT-IMPORTANT** Matrix

Contextualisation of the reality of
prioritisation of organizational time
and resources.

*Is there ever enough time, money,
expertise and resources?*

Back to the past! ...2011 History



What was ICAO trying to achieve?



Provide standards and guidance which:

- Improve the ability to manage fatigue risk
- Apply current scientific knowledge and tools plus industry best practice
- Are based on joint industry-government consensus
- Identify various operationally viable methods
- Assure appropriate regulatory oversight
- Enhance global harmonization in their use

Review of Safety Systems is important and necessary.

14 years on, how are we doing?

Source: Slide from 2011 FRMS Symposium presentation

<https://www.icao.int/safety/fatiguemanagement/FRMS2011/PRESENTATION%20DOCUMENTS/1A%20-%20Curt%20Graeber.pdf#search=frms%20task%20force>



Performance Based Challenges



The **implementation** of performance-based approaches to FM creates a **burden** on resources of service providers and regulators.

Expertise, experience, knowledge, teamwork, data, and reviews are **key characteristics** that need to be regularly relied on and **kept current**.

Understanding of **fatigue science** has developed since the publication of Doc. 9966 and the associated implementation manuals.

Buy or Build



Maintain Skills & Culture



Building Good Guidance

States and service providers would benefit from additional guidance on FM topics such as:

- **Fatigue hazard quantification** – understanding the level of fatigue at which it becomes a concern;
- **Fatigue data analysis and mitigation implementation** – understanding effective methods to interpret fatigue data and implement changes,
- **Safety Performance Indicators (SPIs)** – developing and revising metrics;
- **Fatigue management training** – syllabus structure and content; and
- **Performance-based approach assessment** – how to evaluate safety equivalence (compared with prescriptive approaches).



System Disablers Require Attention too



“No amount of building something good will remove something bad.”



It's not just about building more in – Safety systems need to actively enliven the removal of system disablers too.

Does ICAO FM GM currently and actively lead us into this balance?

Tripartite Trust & Vulnerability



Key Concepts



Vulnerability to Manipulation

- The FRMS data can be falsely manipulated by crew members who seek to portray a particular operation or duty roster as too fatiguing.
- Operators are at the mercy of “outlier” crew members.
- Standard statistical techniques can be used to identify data that originate from artificially manipulated inputs.
- Such data can be legitimately discarded.

Each party in the FM Tripartite has a shared responsibility to build and enable trust so the system can function as intended.

Here the 2011 Symposium highlighted the risks to fatigue management systems from crew members.

Source: Slide from 2011 FRMS Symposium presentation



Manipulation Risks to Outcomes



Key Concepts

Vulnerability to Manipulation

INTENTIONALLY (or unintentionally?) LEFT BLANK




What did the 2011 FRMS TF presentation highlight about the **risks of manipulation of FRMS from Service Providers or Regulatory Oversight Authorities?**

...are the risks proportional?



Manipulation Risks & Outcomes



Source of System Manipulation	Possible Max. Extent of Risk Realisation	Controls to mitigate Manipulation Risk	Possible Max. Longevity effect of Manipulation	Manipulation risk effect to safety (Risk Realisation)
Flight Crew 	Localized implications, reasonably isolated	Professionalism System procedures, overseen operator (i.e. system owner)	Sort term (a few days)	Reduce the extent of exposure to operational fatigue risks
Service Provider 	Broader implications, System wide	Professionalism Regulatory oversight *(Positive Safety Culture)	Medium term (Months to years)	Increase the extent of exposure to operational fatigue risks
Regulatory Authority 	Sector or Statewide implications, risk to operational safety of many operations	Professionalism Clear ICAO SARPs ICAO Audit Regulatory reviews Training	Med to Longer term (Regulatory review of self regulation has limitations)	Increase the extent of exposure to operational fatigue risks

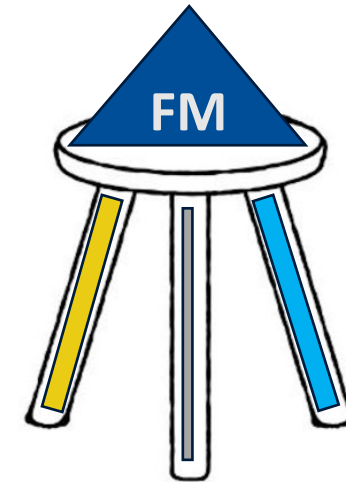
GM on what to remove too

Does the existing **guidance material** adequately aid how to identify and address fatigue management **manipulation vulnerabilities**? I.e. how to take out the bad.

ICAO can **enable greater global harmonization** in the adoption of fatigue management standards and guidance with a balanced approach to an expert group review.



FRMS is not for everyone





FRM – The Wider View of a Review



Challenges in implementation of FM:

- **Intentions versus realities** of implementation
- Performance based standards – **finite resources**/time/expertise (Urgent/Important matrix) Growing complexity
- **Flexibility vs safety safeguards** – Complexity (needs) vs simplification (wants)
- **Improved FM Guidance Material** – **adding** targeted content but also enabling guidance on **removing** disablers from the system

Next Steps & Collaboration



- **FATIGUE MANAGEMENT WP/258**
 - Tabled to the Assembly (see QR code)
- **Meetings with IATA FM specialists**
 - Commenced but more to come
- **Drafting of revised FMG (and possibly Doc 9966) provisions**
 - ICAO will need to allocate its resources
 - Lots of behind the scenes work to come

