



What is an FRMS?

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Defining FRMS

A Fatigue Risk Management System (FRMS) is a type of safety management system (SMS) designed to manage the risk of human fatigue within an operation.

The aim of an FRMS is:

‘to ensure that crew members [employees] are sufficiently alert so that they can operate to a satisfactory level of performance and safety’

(EASA NPA, GM OR.OPS.025.FTL Fatigue Risk Management System (FRMS)).

This is achieved by a repeatable, step-by-step process which is planned, transparent and documented.

A primary advantage of an FRMS is its flexibility, which allows it to be tailored to fit the needs of an individual operation, taking into account factors such as the nature of the operation, the size and complexity of the organisation and the regulatory environment in which it exists.

Rather than relying on prescribed limits, an FRMS focuses on the scientific measurement of the fatigue risk to which an individual operation is exposed. These measurement data inform the management of this risk in order to reduce it to as low as is reasonably practicable.

An FRMS can therefore be defined as:

‘a scientifically-based, data-driven addition or alternative to prescriptive hours of work limitations which manages employee fatigue in a flexible manner appropriate to the level of risk exposure and the nature of the operation’

(Brown, 2006; ALPA, 2008).

An FRMS is considered most effective when integrated into or supported by an operation's Safety Management System rather than operating independently of the existing safety management structure (Dawson and McCulloch, 2005b).

Components of an FRMS

As a tailored system, the components of an organisation's FRMS depend largely on the characteristics of the operation. However, the following components are often cited as integral to an effective FRMS (Booth-Bourdeau et al., 2005; Fletcher, 2007; ALPA, 2008; Holmes and Stewart, 2008; EASA NPA, GM OR.OPS.025.FTL Fatigue Risk Management System (FRMS)).

1. A fatigue risk management policy which includes:

- a. An outline of the respective commitment and responsibilities of senior management and employee for managing fatigue
- b. Identification of a manager who is ultimately accountable for fatigue risk
- c. A statement of commitment to a non-punitive, 'just' culture

2. A Fatigue Safety Action Group or Fatigue Management Steering Group

- a. This group should be responsible for coordinating all fatigue management activities within the organisation. Such activities include:
 - i. Investigation of fatigue-related issues
 - ii. Requesting internal audits
 - iii. Recommending fatigue risk safety targets
 - iv. Providing feedback to management and employees
 - v. Oversight of development and maintenance of training
 - vi. Providing advice and assistance on scheduling changes
- b. The group should incorporate a representation of all stakeholder groups within the organisation

3. Fatigue risk management processes including:

- a. Consultation and communication with staff
- b. Collection of information on fatigue as a hazard
- c. Identification and assessment of fatigue risks
- d. Implementation of controls to mitigate that risk
- e. Feedback on the effectiveness of these mitigation strategies
- f. Processes for ongoing monitoring of employee fatigue

4. A fatigue reporting system for employees which should be:

- a. Confidential
- b. Undertaken in accordance with a just culture policy

5. Fatigue incident investigation

- a. This should involve a formal, documented system for investigating safety incidents that may have fatigue as a contributory factor

6. Fatigue management training and education for employees, schedulers and management which should:

- a. Raise awareness of:
 - i. Fatigue causes
 - ii. The consequences can have for both individuals and the operation
 - iii. Effective countermeasures against fatigue
- b. Provide information about FRMS policy and the responsibilities of all individuals

7. Processes for the internal and external auditing of the FRMS, such as:

- a. Methodical, planned reviews carried out at regular intervals with corrective action taken where necessary
- b. Evaluation of mitigation strategies and constant monitoring of fatigue levels

Key point summary:

- + An FRMS is a flexible, scientifically-based approach to managing risk associated with human fatigue in an organised manner appropriate to the level of risk exposure and the nature of the operation
- + An FRMS is data-driven and represents a shift away from prescriptive standards towards outcome-based regulation
- + Ideally, an FRMS should be integrated with an SMS
- + An FRMS is documented and should exist within a 'just' safety culture
- + In being tailored to an operation, an FRMS utilises only those components which are required in order to run effectively. However, the following core components are recommended:
 1. A fatigue policy
 2. A committee responsible for the implementation and maintenance of the FRMS
 3. Risk management focused on fatigue
 4. Fatigue reporting
 5. Incident investigation
 6. Fatigue awareness and countermeasures training
 7. Auditing

Next steps

This paper has provided a generic overview of FRMS. For more information or assistance implementing an FRMS for your organisation, please contact us:

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For further information on fatigue management and FRMS, please contact Clockwork Research.