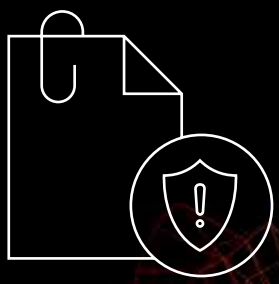

APPENDIX 7 – FRMS

This appendix sets out the requirements for a fatigue risk management system (FRMS) in which an operator will develop flight and duty limits for its personnel and manage their risk of fatigue using safety management systems and principles. An operator's FRMS will need to be assessed and approved by CASA before operating under this appendix.

An FRMS forms part of the holder's operations manual and may be subject to a direction by CASA under CASR 11.245.

General (1)

For all or for part of its operations, an operator may apply to CASA for:

- a trial FRMS implementation approval, or
- a full FRMS implementation approval.

Note: An AOC holder is not eligible for a full implementation approval until the FRMS has been in effective operation for at least 12 months from the date of a trial implementation approval. Refer: Full FRMS implementation approval.

An FRMS applicant (for a trial or full FRMS) must incorporate the following elements in their FRMS:

- policy and documentation
- practical operating procedures
- hazard identification, risk assessment and mitigation procedures
- safety assurance procedures
- safety promotion procedures
- change management procedures.

Note 1: Significant changes require CASA approval, see FRMS change management procedures.

Note 2: Guidance for the development and implementation of an FRMS is available on the CASA website.

If the operator has a safety management system (SMS), an FRMS implementation approval[1] will not be given unless CASA is satisfied that the operator's FRMS is integrated with their SMS.

Before CASA issues either a trial or a full FRMS implementation approval, CASA must be satisfied that the FRMS:

- incorporates the elements referred to above
- is a safe, integrated, data-driven system that appears to be reasonably capable of continuously and effectively monitoring and managing fatigue-related safety risks using scientific principles and knowledge, and operational experience
- will enable the operator to assess the alertness of their FCMs and other relevant personnel for the purpose of ensuring safe operations.

FRMS policy and documentation (2)

The operator's FRMS policy must:

- be in writing
- address the elements referred to above
- if the operator has an SMS – require the FRMS to integrate with the SMS
- clearly define the operations to which the FRMS applies
- make it clear that while primary responsibility for the FRMS lies with the operator, its effective implementation is a responsibility shared by management, FCMs and other relevant personnel
- clearly indicate the safety objectives of the FRMS
- be approved in writing by the Chief Executive Officer
- be accessible to all relevant areas and levels of the organisation
- clearly indicate the operator's specific endorsement of the policy
- declare management commitment to:
  - » effective safety reporting
  - » provision of adequate resources for the FRMS
  - » continuous improvement of the FRMS
- require that clear lines of accountability be identified for management, FCMs and all other relevant personnel
- require periodic reviews to ensure the policy remains relevant and appropriate
- address any relevant limits and procedures contained in the operations manual.

1 Trial or full

The documents that comprise the FRMS and FRMS policy must:

- identify and describe the personnel (including the FRMS manager) who are accountable, responsible and who have authority to effectively implement the FRMS
- describe the mechanisms for the ongoing involvement of management, FCMs and all other relevant personnel in fatigue risk management
- describe the FRMS training programs, training requirements, and maintain records of attendance at training
- address the creation and maintenance of records of:
  - scheduled and actual flight times
  - duty periods and off-duty periods
  - any significant deviations from any limits
  - reasons for the significant deviation from the limits
- allow the recording of the outputs of the FRMS, including findings from collected data, and any recommendations made or actions taken.

FRMS practical operating procedures (3)

The FRMS practical operating procedures must, as a minimum:

- incorporate scientific principles and knowledge
- identify, on an ongoing basis, fatigue-related safety hazards and the risks that may result
- ensure that remedial actions necessary to effectively mitigate the risks associated with the hazards are implemented properly
- provide for continuous recording and monitoring, and regular assessment of:
  - fatigue-related safety hazards
  - relevant remedial actions
  - the extent to which mitigation of fatigue-related risks is achieved by remedial actions
- provide for continuous improvement in the effectiveness of the FRMS.

The FRMS practical operating procedures must set out:

- the maximum values for each FCM for the following:
  - flight times
  - flight duty periods
  - duty periods
- the minimum values for each FCM off-duty periods.

The maximum and minimum values for each FCM referred to above must be based on scientific principles and knowledge and subject to safety assurance processes.

Where an operator acquires data from an FRMS that indicates that the maximum and minimum values set out in their FRMS practical operating procedures (above) are too high or too low respectively, the operator must amend the FRMS in accordance with their FRMS change management procedures to ensure that these values are acceptable.

FRMS hazard identification, risk assessment and mitigation procedures (4)

Hazard identification procedures

FRMS hazard identification procedures must be based on processes that are:

- predictive
- proactive
- reactive.

Predictive processes must be capable of identifying fatigue-related hazards by examining FCM scheduling and considering the following:

- factors known to affect sleep
- factors known to affect fatigue
- the effect of sleep and fatigue factors on FCM performance.

Proactive processes must be capable of identifying fatigue-related hazards within current flight operations.

Reactive processes must be capable of identifying the contribution of fatigue-related hazards to events that could have affected, or did affect, safety, with a view to determining how the effects of fatigue on each event could have been minimised.

Risk assessment procedures

FRMS risk assessment procedures must be capable of determining the following:

› the probability of events occurring or circumstances arising that create a fatigue-related hazard

› the potential severity of fatigue-related hazards

› when the safety risks associated with a determined fatigue-related hazard require mitigation.

The FRMS risk assessment procedure above must ensure that identified fatigue-related hazards are examined in relation to the following:

› the relevant operational context and procedures in which the identified fatigue-related hazard arose

› the probability of the fatigue-related hazard arising in those circumstances

› the possible consequences of the fatigue-related hazard in those circumstances

› the effectiveness of existing safety procedures and controls.

Risk mitigation procedures

FRMS risk mitigation procedures for each fatigue-related hazard must be capable of:

› selecting appropriate mitigation strategies for the hazard

› implementing the selected mitigation strategies

› monitoring the implementation and effectiveness of the strategies.

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FRMS safety assurance procedures (5)

FRMS safety assurance procedures must provide for:

› continuous monitoring of the performance of the FRMS

› the analysis of fatigue-related trends

› measurements to validate the effectiveness of mitigation strategies.

FRMS safety assurance procedures must include a formal process for the management of changes to the FRMS arising from the following:

› identification of changes in the operational environment that may affect the FRMS

› identification of changes within the organisation that may affect the FRMS.

The FRMS safety assurance procedures must include a formal process to assess:

› what impact a change to the operational environment or organisation mentioned above may have on the effective performance of the FRMS

› for such a change – what amendment, change or modification to the FRMS may be needed to ensure its continued effective performance.

FRMS safety assurance procedures must provide for the continuous improvement of the FRMS by including the following:

› the elimination or modification of fatigue-related risk controls that:

  » have had unintended negative consequences, or

  » are no longer required because of changes in the operator's operational or organisational environment

› routine evaluations of facilities, equipment, documentation and procedures to determine their implications for fatigue-related risk management and control

› identification of emerging fatigue-related risks to allow the introduction of new procedures and processes to mitigate such risks.

FRMS safety promotion procedures (6)

FRMS safety promotion procedures for fatigue-related hazards must include:

- training and communication programs capable of supporting and continuously improving all elements of the FRMS in the delivery of optimum safety levels
- training programs for management, FCMs and all other relevant personnel to ensure their competency is commensurate with the role and responsibility of the person under the FRMS
- an effective FRMS communication plan that:
  - explains all elements of the FRMS to management, FCMs and all other relevant personnel
  - describes the communication channels that they must use to gather, disseminate and apply FRMS-related information.

FRMS change management procedures (7)

In this subsection, a significant change means:

- any increase to the FRMS established maximum flight times, flight duty periods or duty periods
- any decrease to the FRMS established minimum FCM off-duty periods
- any other change to any element of the FRMS that does not maintain or improve, or is not likely to maintain or improve, aviation safety.

The FRMS change management procedures must:

- meet the requirements of this subsection
- clearly indicate how the operator will amend, change or modify any element of the FRMS consistently with the requirements of this subsection.

The change management procedures set out in this subsection apply to:

- an operator with a trial FRMS implementation approval
- an operator with a full FRMS implementation approval.

After issuing an FRMS implementation approval, CASA may, in writing, direct an operator to amend, change or modify the FRMS (including practices and documents), and the operator must comply within the time specified by CASA in the direction.

Note 1: A failure to comply may result in revocation of the FRMS implementation approval.

Note 2: CASA's power to direct changes to an FRMS is an emergency power for safety purposes only. It does not relieve any approval holder of their own obligation to improve the performance of their FRMS where this is safe and practicable.

The operator must not make a significant change to any element of the FRMS unless an application to make the change is approved in writing by CASA.

An application for approval of a significant change must:

- be in writing
- set out the change
- be accompanied by a copy of the part of the operator's FRMS documentation affected by the change, clearly identifying the change.

A change to the FRMS that is not a significant change must be:

- in accordance with the FRMS change management procedures
- notified in writing to CASA within the following period after the change is made:
  - 7 days, or
  - the period specified in the operator's:
    - approved SMS amendment process, or
    - exposition change process under the Regulations.

Trial FRMS implementation approval (8)

Following an operator's written application, CASA may issue a trial FRMS implementation approval valid for up to 24 months if it is satisfied that each element of the operator's FRMS:

- complies with and meets the requirements, attributes and characteristics of an FRMS under this appendix
- can deliver:
  - identified safety outcomes
  - fatigue-risk data and reports
  - continuous improvement in the delivery of safety outcomes.

A new trial FRMS implementation approval may be issued to extend the duration of the approval:

- following the written application of the operator, or
- at CASA's initiative due to its safety considerations.

Note: More than 1 extension is possible if CASA considers it appropriate and trial FRMS implementation approval status could, therefore, be required to last longer than 24 months.

Full FRMS implementation approval (9)

Following the operator's written application, CASA may issue a full FRMS implementation approval if the operator:

- has held a trial FRMS implementation approval for at least 12 months
- has satisfied CASA, through relevant data and reports, that the FRMS:
  - is demonstrably delivering the safety outcomes expected when the trial FRMS implementation approval was given
  - can deliver continuous improvement in the delivery of safety outcomes.

If CASA decides not to issue the operator with a full FRMS implementation approval, the operator may apply again to CASA for a trial FRMS implementation approval as described above.

A trial FRMS implementation approval is deemed to include such an approval issued under CAO 48.1 Instrument 2013 as in force immediately before the commencement of the CAO.

Expiry, suspension, revocation, surrender of FRMS implementation approval (10)

An FRMS implementation approval stops having effect if:

- it expires, or it is suspended or revoked in writing by CASA, or
- the operator tells CASA in writing that they want to surrender the approval.

If the approval is revoked or surrendered, the operator must return the approval instrument to CASA within 14 days.

CASA may revoke or suspend an approval if:

- the operator does not comply with the requirements of the CAO for implementation or use of an FRMS, or
- CASA considers that continued implementation or use of the FRMS would adversely affect aviation safety, or
- the operator refuses CASA's written requests for reasonable access to any information or record to assess the effectiveness and safety of the FRMS, or
- CASA wishes to reissue the approval in a varied form (this will only take the form of a revocation).

To avoid doubt, in this clause, reference to an FRMS implementation approval means a trial or full FRMS implementation approval, and includes the approval as varied by CASA.