



Federal Aviation  
Administration

# FRMP and FRMS Overview

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# FRMP Background

- **Basics of Aviation Fatigue AC issued on 6/7/2010.**
- **FRMS AC issued on 8/3/2010.**
- **On August 1, 2010, the United States Congress enacted the Airline Safety and Federal Aviation Administration (FAA) Extension Act of 2010, herein referred to Public Law (P.L.) 111-216.**
- **P.L. 111-216, § 212 (b) prescribes the FRMP requirements.**

# Background

- **Notice 8900.131 issued on 8/12/10.**
- **InFO 10013 issued on 8/12/10.**
- **InFOs 10017 and 10017 SUP issued on 8/19/10.**



# P.L. 111-216, § 212 (b)

- **Requires each part 121 air carrier to develop and submit for review a FRMP.**
- **Contents of the FRMP.**
- **FAA Review.**
- **FAA Acceptance.**
- **Plan Updates.**
- **Compliance with FRMP.**
- **Civil Penalties for Noncompliance.**

# FRMP Authority

- **Statutory requirements prescribed in P.L. 111-216, § 212(b) requires each part 121 air carrier to develop, implement, maintain, update, and comply with the its FRMP.**
- **An FRMP is required for each air carrier conducting part 121 operations.**



# FRMS Authority

- **Contained in the FD&R NPRM (§ 117.7).**
- **Currently, no rule addressing FRMS.**
- **It is an optional fatigue mitigation and management system.**
- **Primarily will be used as an alternative to a prescriptive rule.**
- **An equivalent level of safety that meets or exceeds that of the prescriptive rule.**



# FRMP vs. FRMS Requirements

- **FRMP policies and procedures are within a regulatory structure.**
- **FRMP provides a basic foundation for the development of an FRMS; however, the contents of a FRMP do not meet all the requirements for an FRMS.**
- **Unlike an FRMP, an FRMS is optional, a non-prescriptive fatigue mitigation tool that minimizes the acute and chronic sources of fatigue within a specific operation.**



# FRMS

- **FRMS is a data-driven and scientifically based process that allows for continuous monitoring and management of safety risks associated with fatigue-related error.**
- **It is part of a repetitive performance improvement process.**
- **The FRMS leads to continuous safety enhancements by identifying and addressing fatigue factors across time and changing physiological and operational circumstances associated with a specific operation.**

# What is a FRMP?

- A FRMP is an air carrier's management plan outlining policies and procedures for reducing the risks of flightcrew member fatigue and improving flightcrew member alertness.
- The FRMP policies and procedures focus on the air carrier's specific kind of operations (e.g., domestic, flag, and supplemental) and the type operations (e.g., multiple segments, continuous duty overnights, night vs. day operations, cargo vs. passenger operations, short-haul vs. long-haul, etc.) .
- Manages the effects of flightcrew member fatigue associated with day-to-day operations within a regulatory structure.

# FRMP Structure

- **The FRMP structure is composed of individual components that serve as the framework.**
- **Each component interacts with the other components of the plan to achieve the objective of the FRMP.**



# FRMP Components

- **Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness.**
- **FRMP Scope and Fatigue Management Policies and Procedures.**
- **Current Flight Time and Duty Period Limitations.**
- **Rest Scheme Consistent with Limitations.**
- **A Fatigue Reporting Policy.**
- **Education and Awareness Training Program.**
- **Fatigue Incident Reporting Process.**
- **System for Monitoring Flightcrew Fatigue.**
- **FRMP Evaluation Program.**

# Senior Level Management Commitment

- **A vital component of any FRMP is an acknowledgement from senior level management addressing a commitment to manage and mitigate fatigue during their day-to-day operations.**
- **Serves as a means to achieve corporate buy-in among all employees directly responsible for safety of flight issues and supports a “Just Culture.”**
- **The target audience is flightcrew members, dispatchers, individuals involved in the scheduling of flightcrew members, individuals involved in operational control, and any employee providing management oversight of those areas.**



# FRMP Scope and Policies and Procedures

- **The FRMP scope defines the objectives of the management plan while the policies and procedures should be active and responsive, respectively.**
- **FRMP policy is an objective based upon an objective, and the procedure is the method or means by which the objective will be met using all resources available to the air carrier.**
- **The policies and procedures along with the education and awareness program drive the FRMP and serve as a means to evaluate the overall output of the FRMP.**



# Flight time and Duty Limitations

- **Current flight and duty limitations observed by the air carrier.**
- **Either CFR part limits or CBA limits.**



# Rest Scheme Consistent with Limitations

- **Current rest scheme used by the air carrier.**
- **Either CFR part limits or CBA limits.**
- **Based upon the kind and type of operations being conducted.**



# A Fatigue Reporting System

- **A fatigue reporting system is an integral component of the FRMP as it supports the evaluation of the air carrier's FRMP and provides the means to report fatigue-related occurrences.**
- **However, to be effective, the fatigue reporting policy must be based upon open communications encouraging employees to report fatigue-related occurrences without fear of reprisal.**
- **In return, the air carrier is afforded the opportunity to collect valuable safety information and effect changes through policies, as appropriate, and continue to build upon their safety culture.**

# Fatigue Education and Awareness Training Program

- **The foundation of the FRMP.**
- **Should provide employees with a level of education that educates them on the effects of fatigue relative to the safety of flight.**
- **Should be the foundation for the development of FRMP policies and procedures based upon the knowledge gained through the program.**
- **As data is collected and analyzed, the elements of the education and awareness program will serve as useful tools in developing and shaping policies and procedures.**



# Fatigue Education and Awareness Training Program

- **Review of FAA flight, duty and rest regulatory requirements.**
- **Awareness of the FRMP program itself, including fatigue related policies and procedures, and the responsibilities of management and employees to mitigate or manage the effects of fatigue and improve flightcrew member flight deck alertness.**
- **The basics of fatigue, including sleep fundamentals and circadian rhythms.**
- **The causes and awareness of fatigue.**
- **The effects of operating through multiple time zones.**
- **The effects of fatigue relative to pilot performance.**
- **Fatigue countermeasures, prevention, and mitigation.**



# Fatigue Education and Awareness Training Program

- **The influence of lifestyle, including nutrition, exercise, and family life, on fatigue.**
- **Familiarity with sleep disorders.**
- **The effects of fatigue as a result of commuting.**
- **Pilot responsibility for ensuring adequate rest and fitness for duty.**
- **Operational procedures to follow when one identifies, or suspects, fatigue risk in oneself or others.**
- **Incorporate lessons learned regarding the effects of fatigue and mitigation initiatives relative to the air carrier's operations, and**
- **Use a methodology that continually assesses the effectiveness of the training program.**



# Fatigue Incident Reporting Process

- **The air carrier's fatigue incident reporting process should outline how the air carrier will handle incidents where flightcrew member fatigue is suspected.**
- **Should provide a clear path as to how the air carrier will collect and act upon the data received from these reports.**
- **The data is the key resource for determining the root-cause of the fatigue occurrence.**
- **The output from this data collection will be vital in evaluating the overall effectiveness of the FRMP, drive changes to existing FRMP policies and procedures, effect changes to flight, duty, and rest schemes, and may drive changes to the FRMP education and awareness training program.**



# Fatigue Incident Reporting Process

**Other fatigue incident data sources to be considered when documenting fatigue occurrences:**

- **Procedural errors**
- **Flightcrew member deviations**
- **Flight exceedances**
- **Aviation Safety Action Report (ASAP)**
- **Flight Operations Quality Assurance (FOQA)**

# A System for Monitoring Flightcrew Member Fatigue

- **Should outline a system for monitoring flightcrew member fatigue in day-to-day operations.**
- **Should contain operational procedures to follow when one identifies or suspects fatigue risk in oneself or others.**
- **Should define how an event is evaluated for potential fatigue involvement as well as defining the methodology used for conducting a detailed root-cause analysis of that event.**

# Evaluating the Effectiveness of the FRMP

- **Must outline a systematic process for evaluating the effectiveness of the organization's FRMP.**
- **Must define the use of a methodology that continually assesses the effectiveness of the FRMP, including the effectiveness of the FRMP to improve alertness and to mitigate performance errors.**
- **Must have a process for determining the need for amending the air carrier's FRMP, as appropriate, when it is determined that a FRMP policy or procedure is no longer effective in managing flightcrew member fatigue.**

# Review and Acceptance

- **Submittal Process**
- **Review Process (initial and in-depth)**
- **Rejection Process**
- **Acceptance Process**
- **Issuance of OpSpec A317**

# Duration of OpSpec A317

- **At a minimum, each 14 CFR part 121 air carrier must submit an updated FRMP to AFS-200 for review and acceptance every twenty-four calendar months, as prescribed in P.L. 111-216.**



# FRMP Updates

- **As the air carrier's operations change, the air carrier's FRMP must be amended, as required, to reflect the appropriate fatigue mitigation strategies necessary to reduce the effects of fatigue and improve flight crewmember's alertness in that operation.**
- **Once the FRMP has been amended, the air carrier must submit the amended FRMP to AFS-200 for review and acceptance.**



# FRMP Updates

- **The FAA may determine that changes to an air carrier's FRMP may be necessary. In this case, the air carrier must amend their FRMP accordingly and submit their amended FRMP to AFS-200 for review and acceptance.**
- **Each time an air carrier's FRMP is reviewed and accepted by AFS-200 will result in the air carrier receiving a reissuance of OpSpec A317 reflecting the changes with a new expiration date of twenty-four calendar months from the date of issuance.**

# FRMP Wrap-up

- **FRMP and FRMS are two distinctly different approaches.**
- **FRMP provides the basic foundation for the development of a FRMS.**
- **FRMP is a day-to-day fatigue mitigation approach based upon the type and kind of operations being conducted within a regulatory structure.**



# What is an FRMS?

- **An alternative to a prescriptive rule.**
- **Must establish an equivalent level of safety.**
- **A fatigue mitigation tool that minimizes the acute and chronic sources of fatigue and manages the potential risks associated with fatigue associated with a specific operation.**
- **A management system operator's use for mitigating the effects of fatigue in its operations.**



# FRMS Overview

- **Structurally, a FRMS is composed of processes and procedures for measuring, modeling, managing, mitigating, and reassessing fatigue risk in a specific operational setting.**
- **Combines schedule assessment, operational data collection, continuous and systematic analysis, and fatigue mitigations guided by information provided by fatigue scientific studies.**
- **Provides for an effective fatigue mitigation strategy when the organization bases it on valid scientific principles.**

# FRMS Concept

- **A management system operators use for mitigating the effects of fatigue in their operations.**
- **A FRMS is a non-prescriptive fatigue mitigation tool that minimizes the acute and chronic sources of fatigue.**
- **A FRMS includes documented processes for collecting and analyzing fatigue related safety data and implementing corrective actions – always allowing for continuous improvement.**

# FRMS Considerations

- **Scope of the operational demands.**
- **Complexity of the operation for which FRMS will be applied.**
- **An alternative means of compliance.**
- **Meet specific operational requirements to fit the operator's business model.**
- **May be able to establish better fatigue mitigation initiatives for the operation.**

# Benefits of a FRMS

- **Overall, a FRMS may offer a way to more safely conduct flights by offering flexibility that may not be available within regulatory limits.**
- **A FRMS complements prescriptive flight time, duty, and rest requirements.**
- **Improved operational efficiency.**
- **Provides for a performance-based regulatory approach that is “tailored” to an operator’s specific operation.**



# Essential Components of the FRMS

- **Fatigue Risk Management Policy**
- **Education and Awareness Training Program**
- **Documented operator processes and procedures**
- **Fatigue Analysis and Reporting System**
- **Monitoring Fatigue in Flightcrew**
- **Incident Reporting Process**
- **Safety performance measurement**
- **Performance Evaluation**

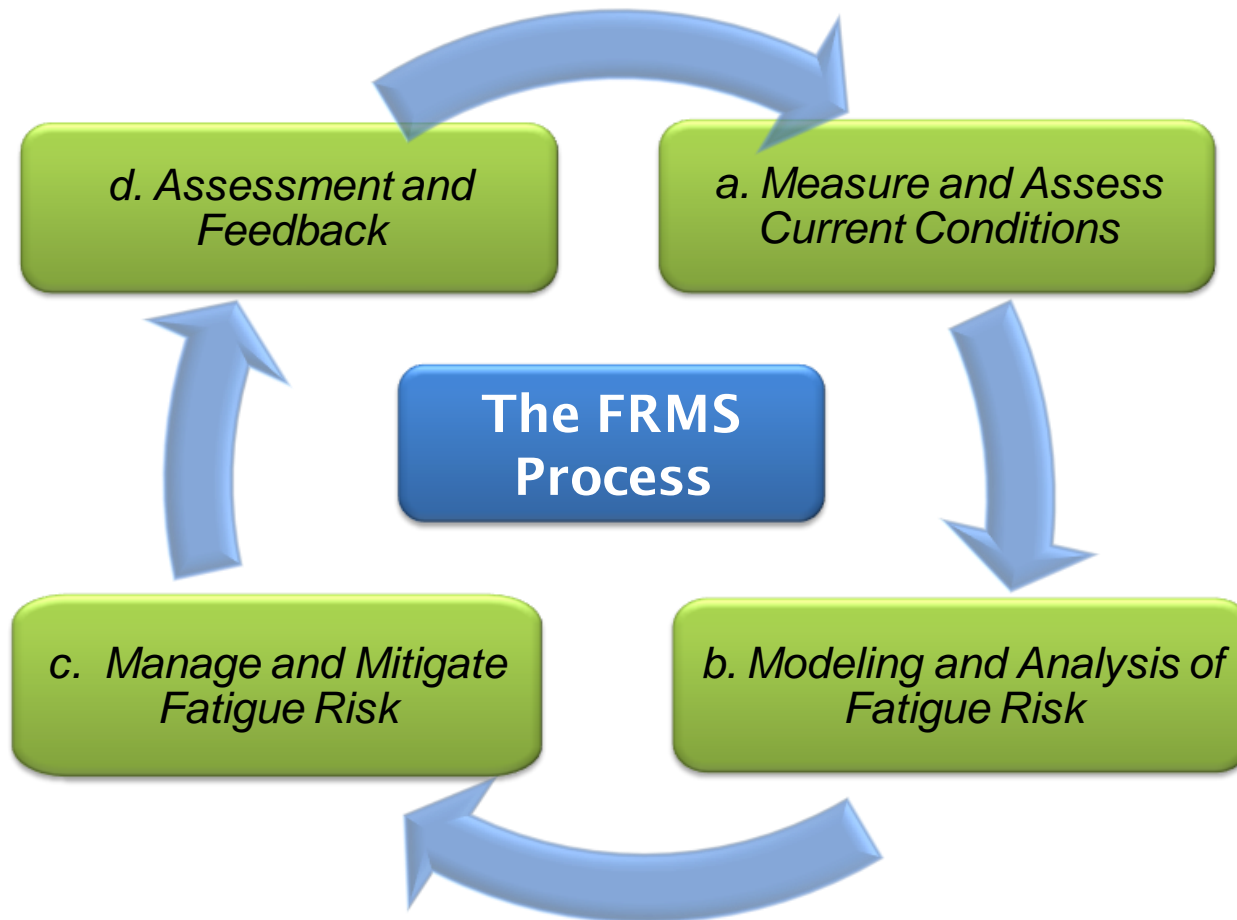


# Building Blocks of a FRMS

- **Policies and procedures.**
- **Organization and personnel.**
- **Tools and methods.**
- **Training and awareness.**
- **Fatigue modeling.**
- **FRMS processes.**



# FRMS Process



# FRMS Application

- **A FRMS may be part of an organization's SMS or a stand-alone system.**
- **Similar to a SMS, the FRMS applies the risk management process to identify fatigue risks through the use of data-driven systems.**



# Fatigue Related Data

- **An effective FRMS is data-driven, which relies on the use of reports, studies, etc., rather than speculation.**
- **A FRMS is based on scientific principles, involves continuous monitoring and, when possible, may be integrated into an operator's overall SMS.**

# FRMP Summary

- **Required by each Part 121 air carrier**
- **Functions within the regulatory structure**
- **Applied to daily operations**
- **Active**
- **Responsive**
- **Continually evaluated for effectiveness**



# FRMS Summary

- **Optional**
- **Specific application**
- **Active**
- **Proactive**
- **Responsive**
- **Predictive**
- **Data-driven**
- **Modeling**
- **Validation**
- **Application continuously evaluated for effectiveness**



# Additional Questions or comments

