

The FAA's Fatigue Risk Management Program for Air Navigation Service Providers

Presented to: **10th International Conference on
MANAGING FATIGUE**

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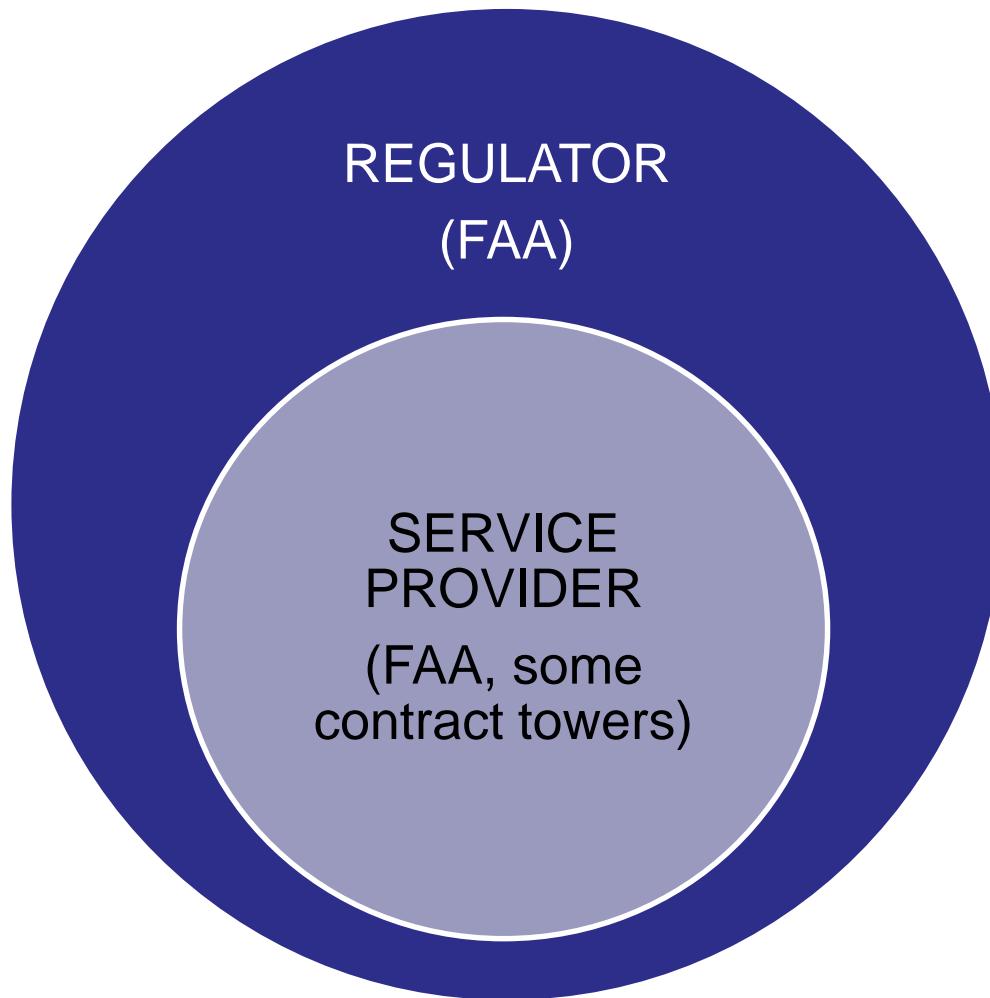
Date: **March 22, 2017**



**Federal Aviation
Administration**

Views or opinions expressed herein are solely those of the author and do not necessarily reflect the opinions of the FAA or the federal government.

Air Navigation Services in the United States



- **UNITED STATES:**
 - **Regulator** = FAA
 - **Service Provider** = FAA, contract (towers only)
- **SOME OTHER COUNTRIES:**
 - **Regulator** = Government civil aviation authority
 - **Provider** = Company

Safety Services Group (AJI-1500)
Eric Saldana

Safety Services Support (Air Traffic/MSS) Team (AJI-1510)
Vacant

Safety Services Support Team (AJI-1520)
Norman Davis

Safety Services Support (PMO/Sys Ops/Tech Ops) Team (AJI-1530)
Greg Escobar

Human Performance Team (AJI-1550)
Jason Demagalski

Fatigue Risk Management Element

Safety & Technical Training Lines of Business

Safety (AJI-1000)
Technical Training (AJI-2000)
Policy & Performance (AJI-3000)

ATO Lines of Business

Air Traffic Services
Management Services
Mission Support Services
Program Management Organization
Safety & Technical Training
System Operations Services
Technical Operations
Flight Program Operations

FAA Lines of Business

- Airports (ARP)
- **Air Traffic Organization (ATO)**
- Aviation Safety (AVS)
- Commercial Space Transportation (AST)
- Security and Hazardous Materials Safety (ASH)


FAA – Where is ATC fatigue management located?

FAA ATO Definition of “Fatigue”

Identical to ICAO* definition

6. **Definitions.** The following definitions apply in this order.

a. **Fatigue.** A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian (from Latin *circa* meaning “about” and *dies* meaning “day”) phase, or workload (mental and/or physical activity) that can impair an individual’s alertness and ability to perform safety-related duties.



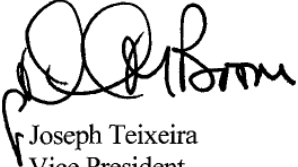
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

ORDER
JO 1030.7A

8/31/2012

SUBJ: Air Traffic Organization Fatigue Risk Management

Fatigue Risk Management (FRM) is a vital component of the Federal Aviation Administration’s (FAA) Safety Management System (SMS) and establishes the policy to define, assess, and manage fatigue-related safety risk within the National Airspace System (NAS).



Joseph Teixeira
Vice President
ATO Safety and Technical Training

August 31, 2012

Who is Covered by the Order?



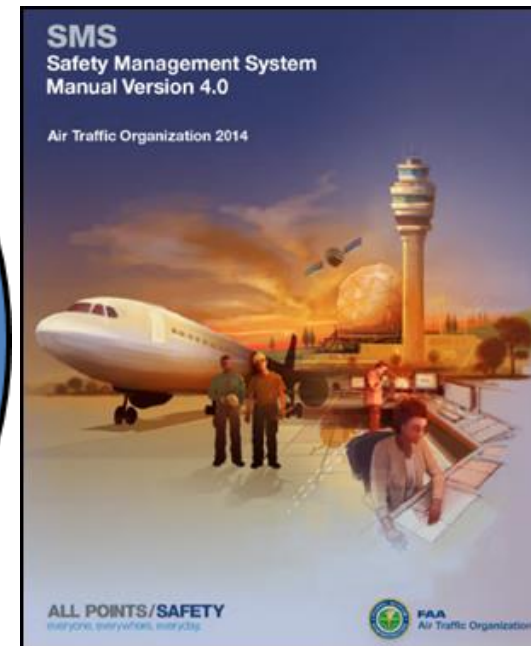
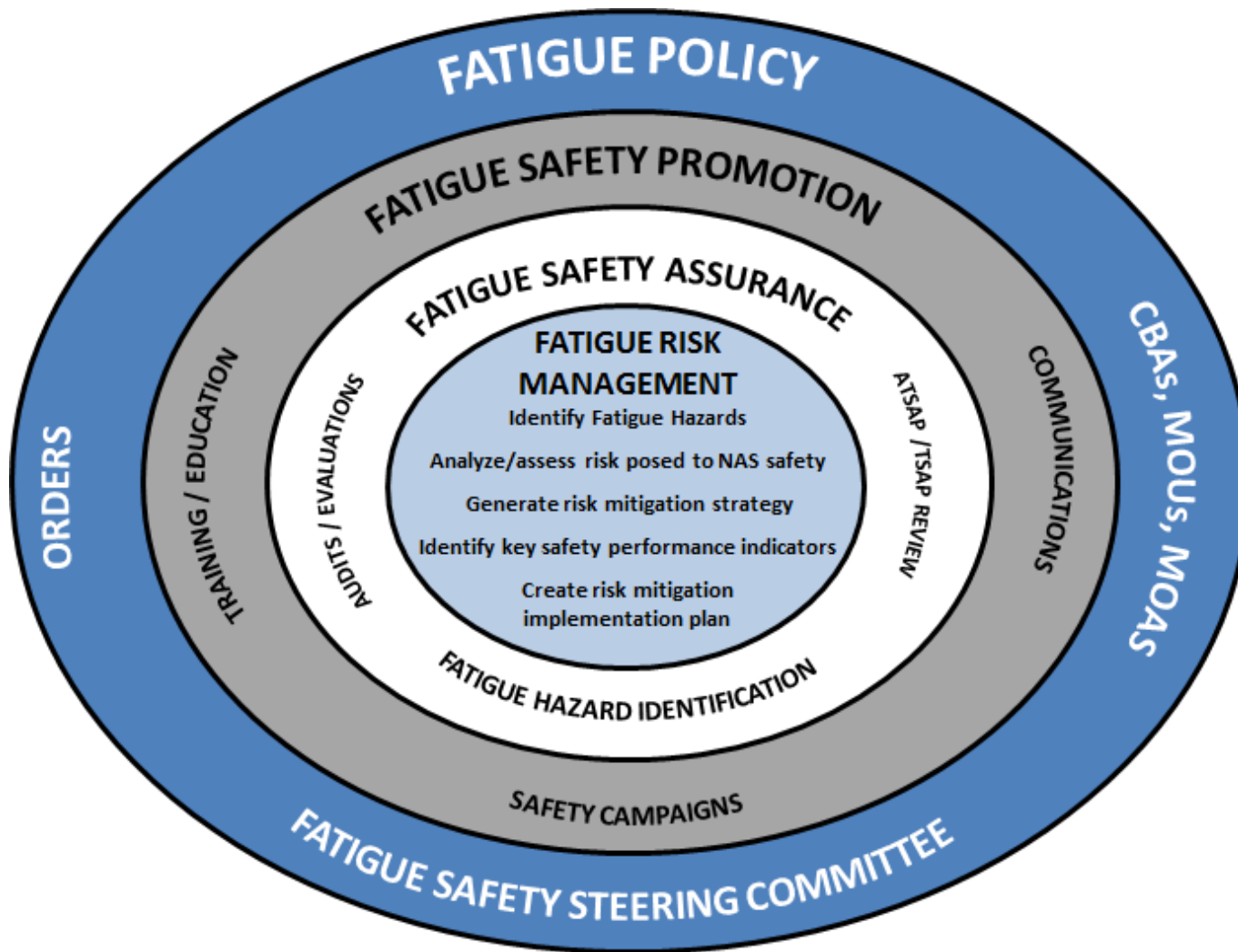
Approaches to Fatigue Risk Management for ANSPs*

	PRESCRIPTIVE APPROACH	RISK MANAGEMENT APPROACH
REGULATOR	<p>REGULATOR:</p> <ul style="list-style-type: none"> ▪ Sets limits (work hours etc.) ▪ Fatigue risk managed within Safety Management System (SMS) 	<p>REGULATOR:</p> <ul style="list-style-type: none"> ▪ Ensures that ANSP manages fatigue risk to level equivalent to – or better than – prescriptive approach ▪ Establishes fatigue risk management system (FRMS) regulations and develops processes for approval and oversight of an ANSP's FRMS
SERVICE PROVIDER (ANSP)	<p>ANSP:</p> <ul style="list-style-type: none"> ▪ Abides by prescriptive limits ▪ Implements personal fatigue mitigation 	<p>ANSP:</p> <ul style="list-style-type: none"> ▪ Identifies fatigue limits ▪ Manages risk to stay within limits ▪ Identifies safety objectives and targets ▪ Self-monitors via FRMS processes



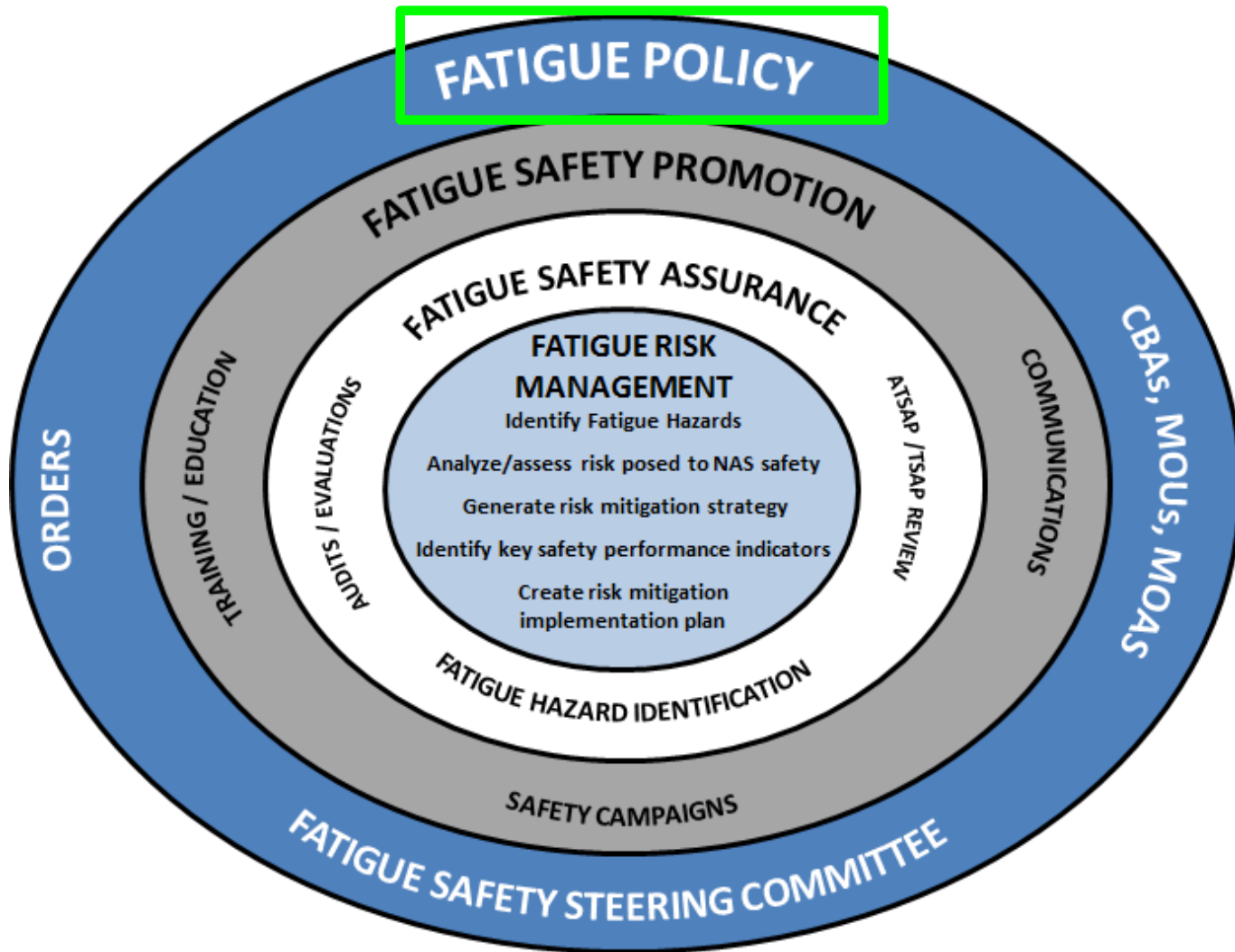
FAA ATO Fatigue Risk Management Program

Aligns with FAA ATO Safety Management System



FAA ATO Fatigue Risk Management Program

FATIGUE POLICY



ATO FRM Policy and Related Agreements

2-6-6. RELIEF PERIODS

a. Personnel performing watch supervision duties are responsible for ensuring that breaks are administered in an equitable manner and applied so as to promote the efficiency of the agency. They are also responsible for ensuring that breaks are of a reasonable duration.

NOTE-
Breaks to recuperate are permitted to engage in activities necessary to effectively manage the facility.

b. Personnel performing watch supervision duties are responsible for ensuring that breaks are of a reasonable duration.

c. Personnel performing watch supervision duties must not condone or permit any person during any period of duty to be separated from the applicable Agency policy and collective bargaining agreement.

2-6-7. BASIC WATCH SCHEDULE


a. Facility watch schedules must take into account normal traffic flow, thereby permitting the posting of a continuing schedule for an indefinite period of time. Facility management is responsible for ensuring that watch schedules are in accordance with collective bargaining agreements.

b. Air traffic control duties are those duties that require separation of aircraft in accordance with applicable Agency policy and collective bargaining agreement.

1. Do not work in a shift.
2. Hours worked are operational or not, as applicable.

2-6-13. SINGLE PERSON MIDNIGHT OPERATIONS

a. In order to ensure that a receiving facility is prepared to accept an aircraft, coordination between facilities/operational areas must be accomplished either manually via landline, or positively acknowledged via automation, (for example, acceptance of the handoff by keystroke entry), when an operational area is operated with one ATCS between the hours of 0000L to 0500L.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

ORDER
JO 7210.3Z

Effective Date:
December 10, 2015

SUBJ: Facility Operation and Administration

NATCA, FAA announce tentative contract agreement

The National Air Traffic Controllers Association and the Federal Aviation Administration announced a tentative agreement on a new collective bargaining agreement.



**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION
AND
THE FEDERAL AVIATION ADMINISTRATION**

Section 8. All operational personnel are obligated by their significant safety duties and professional responsibilities to prepare for duty with consideration for being well-rested and mentally alert. It is the employees' responsibility to recognize and report to their supervisor when they are unable to perform operational duties due to fatigue. Upon request, employees that self-declare as unable to perform operational duties due to fatigue will be granted leave in accordance with the leave provisions contained within the 2009 CBA. Additionally, at his/her request, an employee that self-declares as fatigued, shall be assigned other facility duties, to the extent such duties are available. If no such duties are available, the employee will be granted leave as described above.

7/1/11
Date

...air Traffic Organization and AEA ... eff. December 16, 2012

Preamble

...ing agreement, hereinafter referred to as the "Agreement," is working conditions for all bargaining unit employees, facilitate the of disputes and contribute to the growth, efficiency and prosperity of effective air traffic control system in the world. The true measure of will not be the number of disagreements the Parties resolve, but for and integrity with which the Parties jointly administer this


ARTICLE 1

Parties To The Agreement

Section 1. This Agreement is made by and between the Specialists (AFL-CIO), hereinafter referred to as "Professional Aviation Safety Specialists," and the Federal Aviation Administration, Department of Transportation, hereinafter referred to as "FAA" or the "Agency," and collectively as the "Parties."

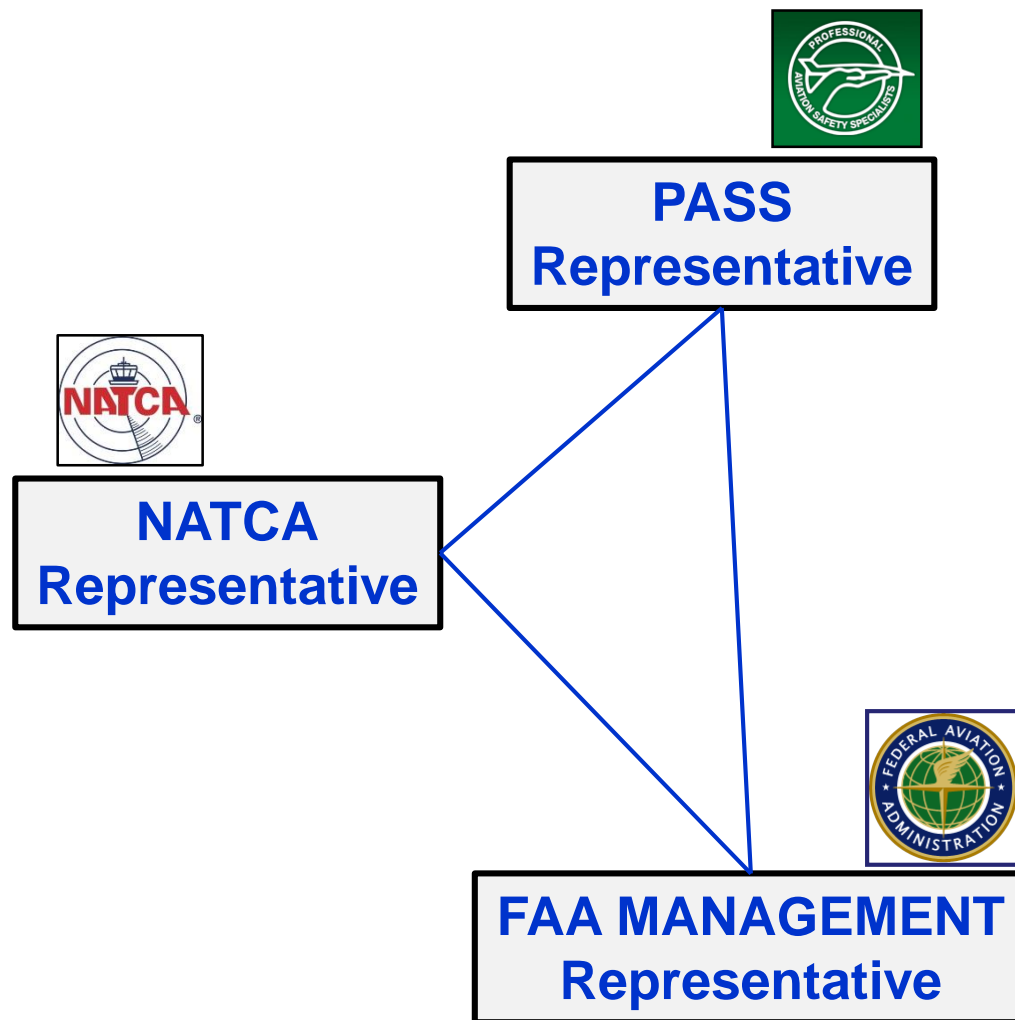
Section 2. The Agency recognizes the Union as the exclusive representative by the Federal Labor Relations Authority, Case No. 09-0098 (Appendix I), and Case No. WA-RP-11-000.

Section 3. This Agreement shall cover all bargaining units listed in Section 2. If the bargaining unit listed in Section 2 is not covered by this Agreement, those employees, those employees shall be covered by this Agreement.



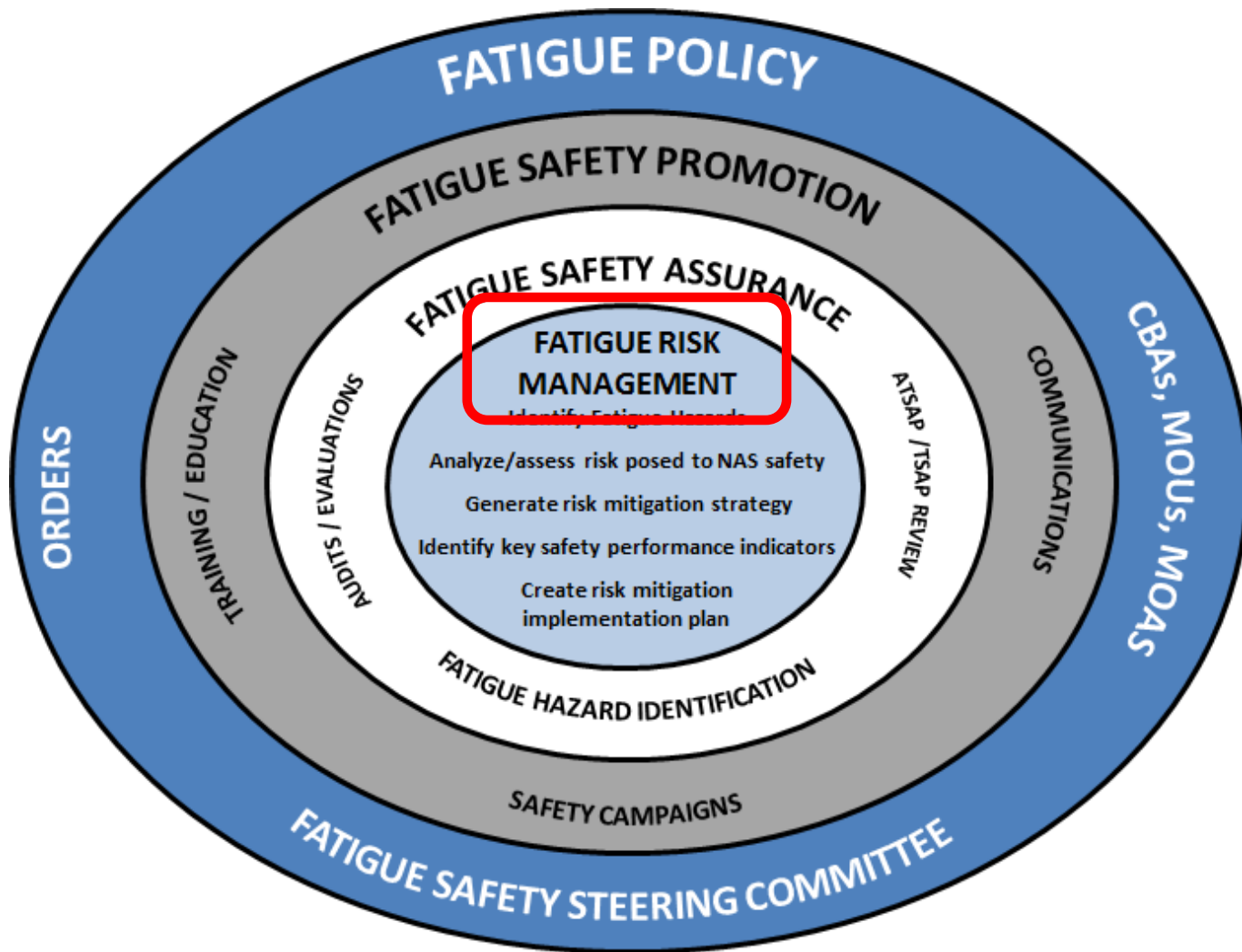
ATO Fatigue Safety Steering Committee (FSSC)

- Established by charter
- Meets in-person quarterly
- Reviews work schedule compliance with JO 7210.3Z
- Reviews fatigue-related incidents and voluntary safety reports
- Recommends courses of action, revisions to Orders, process updates, etc.



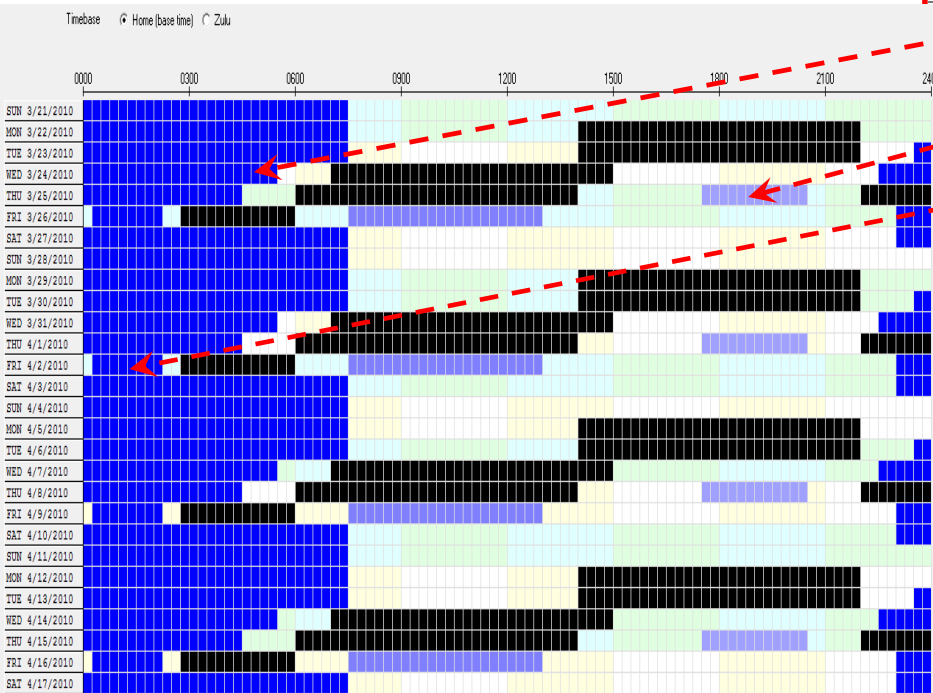
FAA ATO Fatigue Risk Management Program

FATIGUE RISK MANAGEMENT



Work Schedule Fatigue Risk Quantification

- Commercially available modeling software
- Estimated sleep* obtained prior to various shift types (early AM, days, mids, etc.) and on days off
- Work schedule risk score = area below 77% effectiveness



INTERVAL TYPE	SLEEP PERIOD DURATION (HRS)	SLEEP QUALITY	MAXIMUM POSSIBLE SLEEP (HRS)	SLEEP ONSET TIME	SLEEP OFFSET TIME
NIGHT SLEEP prior to an RDO	Up to 8.50	excellent (100%)	Up to 8.50	23:00 (or 90-minute rule*)	7:30
NIGHT SLEEP - before AFTERNOON (1300-1959 start)	Up to 7.50	excellent (100%)	Up to 7.50	00:00 (or 90-minute rule*)	7:30
NIGHT SLEEP - before MIDDAY (1000-1259 start)	Up to 7.50	excellent (100%)	Up to 7.50	00:00 (or 90-minute rule*)	7:30
NIGHT SLEEP - before DAY (0700-0959 start)	Up to 7.50	excellent (100%)	Up to 7.50	00:00 (or 90-minute rule*)	7:30
NIGHT SLEEP - before EARLY AM (before 0700 start)	Up to 7.50	excellent (100%)	Up to 7.50	00:00 (or 90-minute rule*)	7:30
AFTERNOON NAP - before MID	3	fair (67%)	2.01 (67% of 3.0 hrs)	3 hours prior to sleep offset	90-minute rule*
RECUPERATIVE BREAKS (sleep period preceded by 15 minutes wake and followed by 30 minutes wake)	2	excellent (100%)	2	00:00 break = 00:15 02:45 break = 03:00	00:00 break = 02:15 02:45 break = 05:00
AM SLEEP - after MID	Up to 5.5	good (83%)	Up to 4.57 (83% of 5.5 hrs)	90-minute rule*	13:00

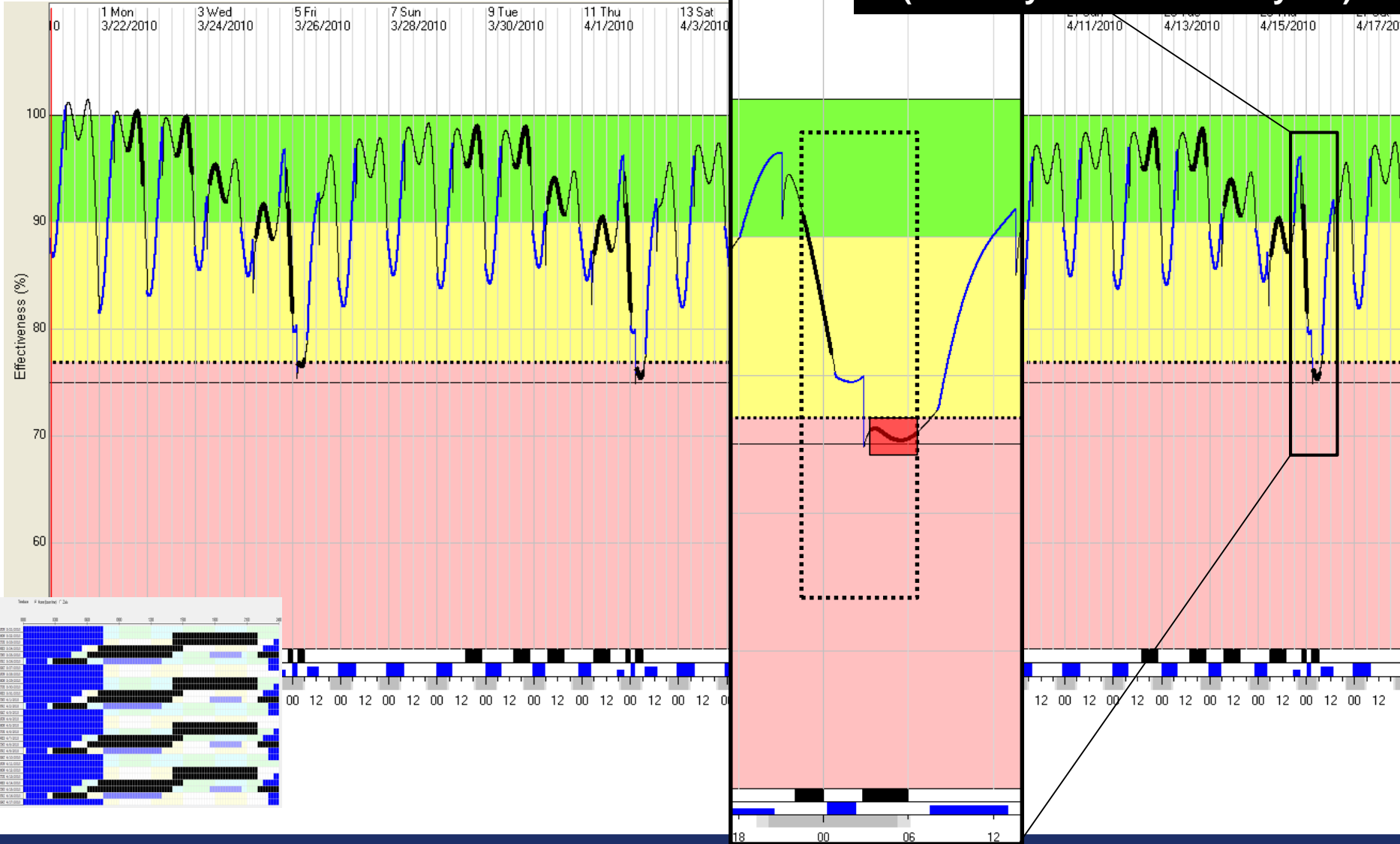
* Estimated from ATC survey and actigraphy results + assumptions based on sleep literature

*90-minute rule: To allow for commute time etc. to/from work:
- Sleep ONSET did not start until at least 90 minutes after shift end
- Sleep OFFSET occurred at least 90 minutes before shift start

Fatigue Risk Quantification

Area below 77%

ACCEPTANCE of RISK
is a
BUSINESS DECISION
(made by FAA ATO Safety VP)



Fatigue Risk Quantification – NEXT STEPS

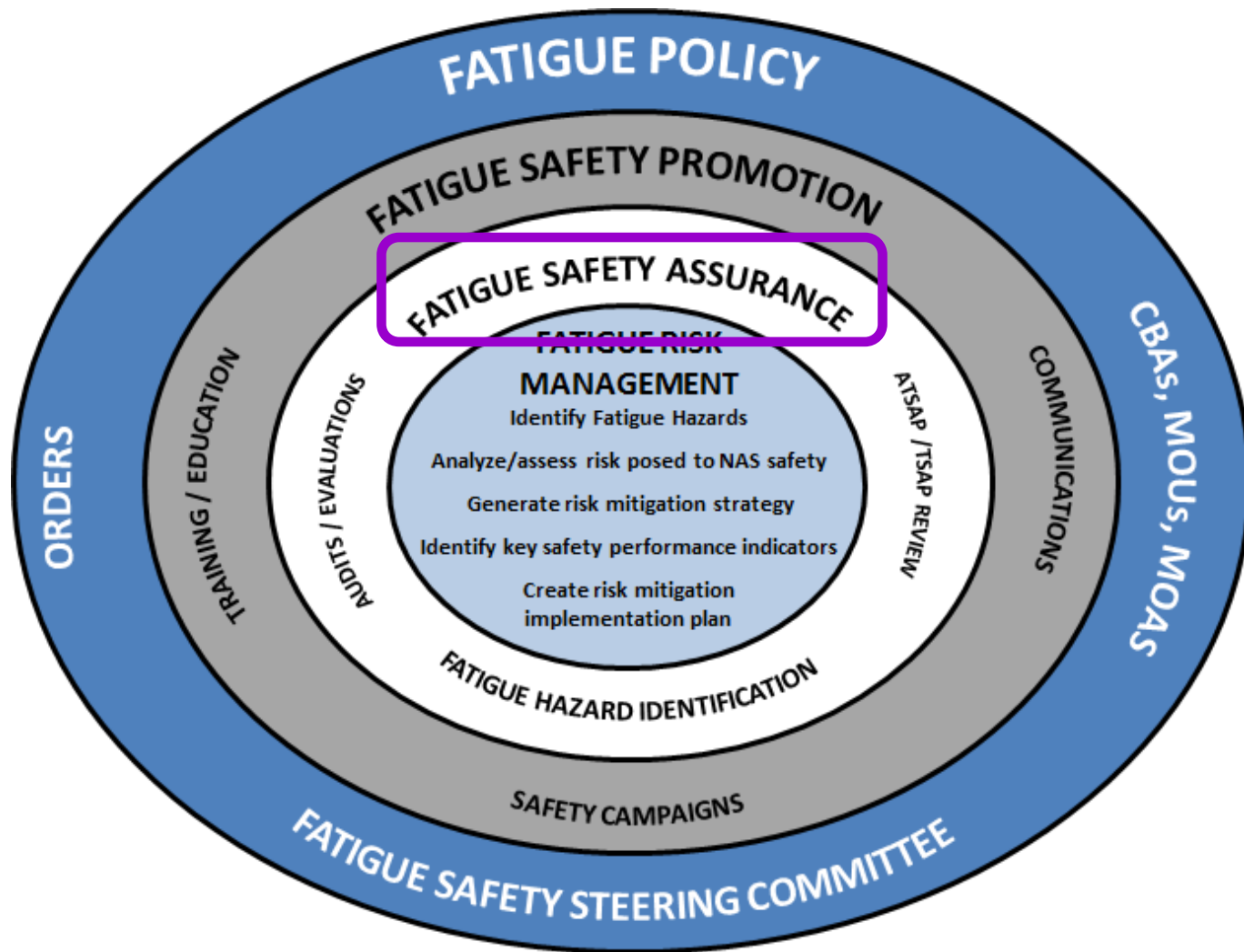
<div>Severity</div> <div>Likelihood</div>	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A	Low	Medium	High	High	High
Probable B	Low	Medium	High	High	High
Remote C	Low	Medium	Medium	High	High
Extremely Remote D	Low	Low	Medium	Medium	High
Extremely Improbable E	Low	Low	Low	Medium	<div>High*</div> <div>Medium</div>

*Risk is high when there is a single point or common cause failure.

Figure 3.7: Risk Matrix

FAA ATO Fatigue Risk Management Program

FATIGUE SAFETY ASSURANCE



Voluntary Safety Reporting Program: ATSAP

- ✓ Personnel **voluntarily report** safety and operational concerns (including fatigue)
- ✓ **REPORTING is NON-PUNITIVE** (cannot be used to de-certify or de-credential an air traffic controller)
- ✓ Identifies emerging fatigue hazards



The screenshot shows the ATSAP website homepage. At the top, there are logos for ATSAP (Air Traffic Safety Action Program), the Federal Aviation Administration (FAA), and NATCA, along with the website URL atsapsafety.com. Navigation links for "Login" and "Register" are present, along with a link for "Forgot username or password". The main headline reads "ATSAP Eases Radio Interference for L.A. Center" with a photo of a radio tower. Below the headline is a "Click image to read more" link. A navigation bar contains links for "INTRODUCTION", "HISTORY", "PURPOSE", "BENEFITS", and "CISP". The "PURPOSE" section is active, displaying text about the program's non-punitive nature and its goal to improve flight safety. To the right, a "LINKS" section features logos for the FAA, PFS, and NATCA.

atsap
Air Traffic Safety
Action Program

FAA
NATCA

atsapsafety.com

Login Register

[Forgot username or password](#)

ATSAP Eases Radio Interference for L.A. Center

Click image to read more

Photo: ATO

INTRODUCTION HISTORY PURPOSE BENEFITS CISP

ATSAP is modeled after the airlines ASAP (Aviation Safety Action Program). The program is non-punitive, and serves as one leg of a good Safety Management System. ATSAP also helps develop a strong safety culture. The intent is to identify and report all events that may or did lead to a breakdown in safety, or increase risk to our operation. If we want to mitigate all safety risks, we need to identify and study the thousands of unreported events that may reveal the one critical safety event that could result in disaster.

ATSAP reporting must be non-punitive. An employee cannot be decertified nor can any credentialing action take place if an employee reports an event to the ATSAP program. ATSAP provides a systematic approach for Controllers and others providing or supporting the provision of air traffic services (per MOU with NATCA) including Air Traffic Assistants and Flight Data Communications specialists (per MOU with NAGE) as well as managers when engaged in providing air traffic control services. Through self-reporting of safety events and cooperative follow-up, appropriate actions can be taken to improve flight safety.

LINKS

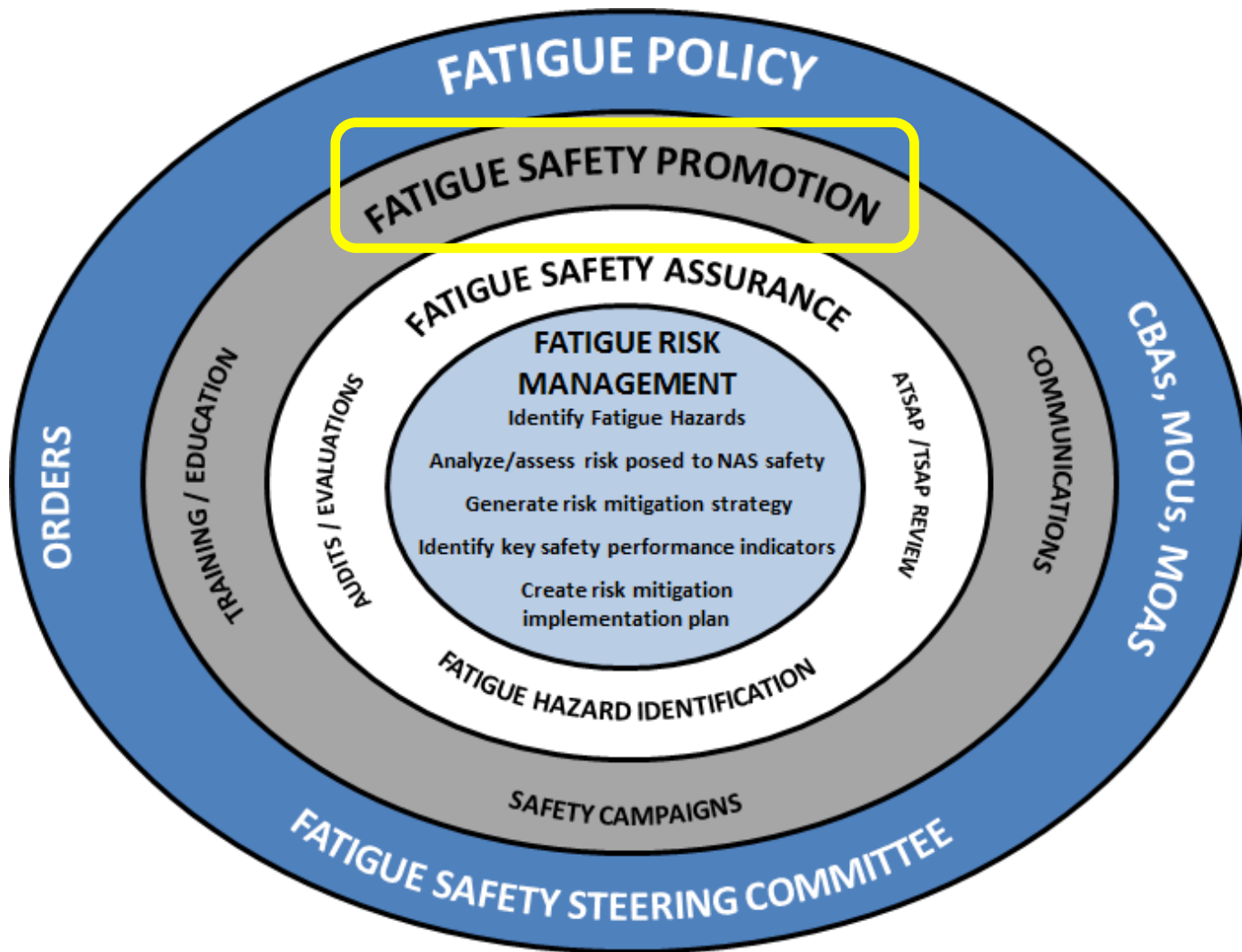
FAA

PFS

NATCA

FAA ATO Fatigue Risk Management Program

FATIGUE SAFETY PROMOTION



Fatigue Safety Training, Campaigns, Communications

TRAINING



BULLETINS

DO YOU KNOW YOUR FACILITY'S PROCEDURES for SINGLE-PERSON MIDNIGHT OPERATIONS? (0000L – 0500L)

**ORDER
JO 7210.3Z**

Effective Date:
December 10, 2015

**2-6-13. SINGLE PERSON MIDNIGHT
OPERATIONS**

WHO: Controllers working midnights.

WHAT: Midnight Operations Required Hand-off Procedures

HOW: Hand-off **MUST** be accomplished either:

MANUALLY - e.g., verbal communication via landline
OR

POSITIVELY ACKNOWLEDGED - via automation

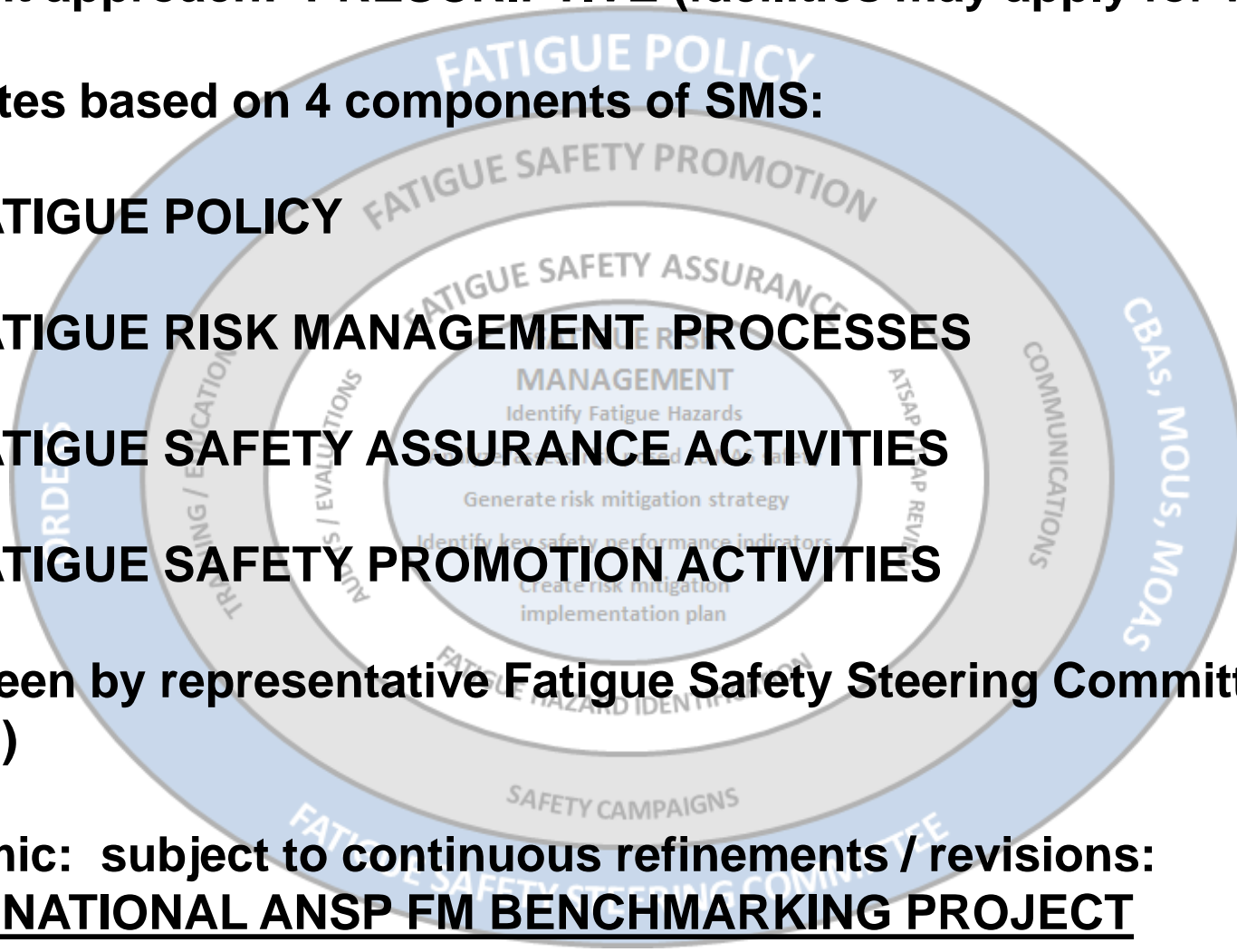
WHY: **The pressure for rest and our** biological clock degrade alertness during midnight shifts. Requiring a positive action to accept traffic will help ensure that controllers are alert and prepared.

PARTNERSHIP for SAFETY CAMPAIGN

A screenshot of the PFS (Partnership for Safety) website. The header includes navigation links: Home, About, LSC Membership, PFS Portal, and Contact Us. The main banner features an airplane on a runway with the text "Safety in the Skies" and "Enabling Local Safety Councils to Identify and Mitigate Safety Risk". Below the banner are four featured sections: 1. "atsap Air Traffic Safety Action Program" with a description of the program. 2. "FULLY CHARGED" campaign sponsored by FAA, NATCA, and PASS. 3. "TURN OFF TUNE IN" campaign about reducing distractions. 4. "WHAT'S ON YOUR RUNWAY?" campaign about runway excursions. On the right side, there are sections for "News" (Runway Safety Video by Ric Loewen), "Reminders" (Monthly Safety Awareness Discussions are Mandatory), "Events" (Tuesday October 18 1-2pm EST PFS National Monthly Teleconference, Thursday October 20 1-2pm EST), and "Remote Training Spreads Safety Without Spending Money".

Summary: FAA ATO Fatigue Risk Management Program

- Current approach: **PRESCRIPTIVE** (facilities may apply for waivers)
- Operates based on 4 components of SMS:
 - **FATIGUE POLICY**
 - **FATIGUE RISK MANAGEMENT PROCESSES**
 - **FATIGUE SAFETY ASSURANCE ACTIVITIES**
 - **FATIGUE SAFETY PROMOTION ACTIVITIES**
- Overseen by representative **Fatigue Safety Steering Committee (FSSC)**
- Dynamic: subject to continuous refinements / revisions:
INTERNATIONAL ANSP FM BENCHMARKING PROJECT



ATO FRMP – Acknowledgements (partial list...)

Tom Nesthus, CAMI/FAA

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Annie Glenn, FAA

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Dean Iacopelli, NATCA

Dale Wright, NATCA

Peter Gimbrere, NATCA

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Steve Hursh, IBR

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Francine James, IBR

Lauren Waggoner, IBR

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Jeff Richards, NATCA (FSSC member)

Kathy Sanford, PASS (prior FSSC member)

Rick Huss, ATO/FAA – prior FRMT Lead

Bob Jones, ATO/FAA (prior FSSC member)

Wanda Geist, ATO/FAA (prior Technical Operations advisor)

Jason Canton, ATO/FAA (FSSC member)

Kelly McGonigal, PASS (FSSC member)

Jim Mayer, ATO/FAA (current Technical Operations advisor)

QUESTIONS and POINT of CONTACT



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