



Fatigue in Maintenance

Using Best Practice & Learning

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An integrated Approach to Fatigue

ICAO, Annex 6, Part 1, 2011 and ORO.FTL currently deals with Crew:

- "A physiological state of **reduced mental** or **physical performance** capability resulting from **sleep loss** or **extended wakefulness, circadian phase, or workload** (mental and/or physical activity) that can **impair** a crew member's **alertness** and ability to **safely operate** an aircraft or perform safety related duties."

Safety is Risk Management

- Fatigue Management is Risk Management (of Fatigue)
- The Risk of Fatigue exists across the business wherever you work

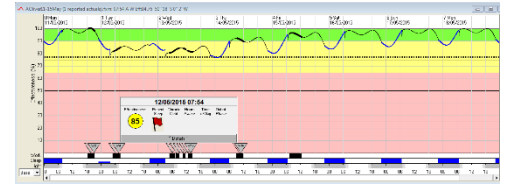
"impair alertness and the ability to **safely operate** or perform duties."

An integrated Approach to Fatigue

- Clearly Airline systems and processes for managing Fatigue in Crew are maturing

BACF view was there was no need to re-invent the wheel, we:

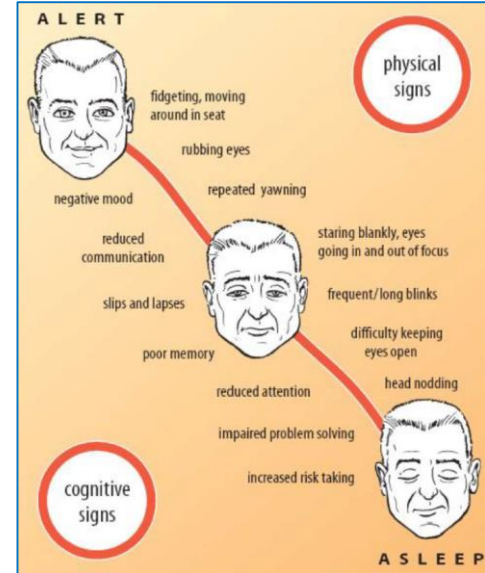
- Involved Engineering (Ground Services etc) in the implementation
- Analysed Shift Patterns in Line Maintenance / Maintrol etc (SAFTE-FAST →
- Trained all Engineers in Fatigue Management (same course as crew)
- Used the existing Safety Reporting Mechanisms (i.e. comfortable & familiar tools)
- Planned for Control Rest
- Factored fatigue into future facilities design



Planning to acknowledge Fatigue

BACF view was interlace Planning principals into Training & Practice:

- Alertness Controlled Rest principal & Partnered Monitoring →
- Circadian rhythms Workpack delivery & Controlled Rest openly planned around rhythms
- Sleep inertia Slot 1 preparation, timing and the use of counter measures
- Open approach to commuting issues in London (survey on shift times)



Fatigue Reporting & Management

BA CITYFLYER
Fatigue Management System (FMS)

FATIGUE REPORT FORM
SUBMIT TO SAFETY SERVICES

Form: BA-CJ-0009-0315
Issue: FMSA 3
Date: 06 Mar 2014
Page: 1 of 1

Name: _____ Staff No.: _____ Role: _____ Base: _____

Fatigue Category

Safety Report: FPM Event: Non-reported Event: A general Fatigue concern:

Event Details:

When & how long: _____ Date: _____ Time: _____ Day: _____
 If flight related: Flight No: _____ Route: _____ Sector: _____
 Your Location: At Home Driving work In Flight Driving home Post-flight Other: _____

Fatigue Effect Details:

Title: _____
 Description of Event: _____
 Cause of Fatigue: _____
 Action & Result: _____
 Suggestions: _____

Contributory Factors:

Tick	Comments	Sleep History (last 48 hours)
<input type="checkbox"/> Comm. <input type="checkbox"/> L. Drive Night <input type="checkbox"/> J. Delay <input type="checkbox"/> L. Rest	Duration: _____	Date: _____ Time: _____
<input type="checkbox"/> Long issues <input type="checkbox"/> L. Home Rest <input type="checkbox"/> J. Hotel Rest <input type="checkbox"/> L. Home Rest		Start: _____
<input type="checkbox"/> Early to Late <input type="checkbox"/> Late to Early <input type="checkbox"/> Early Start <input type="checkbox"/> Late Finish		Finish: _____
<input type="checkbox"/> Long Duty <input type="checkbox"/> Long Term <input type="checkbox"/> Postponing <input type="checkbox"/> No disruption	Distance: _____	Start: _____
<input type="checkbox"/> Don't Know <input type="checkbox"/> Other: _____		Finish: _____

Identify & Control:

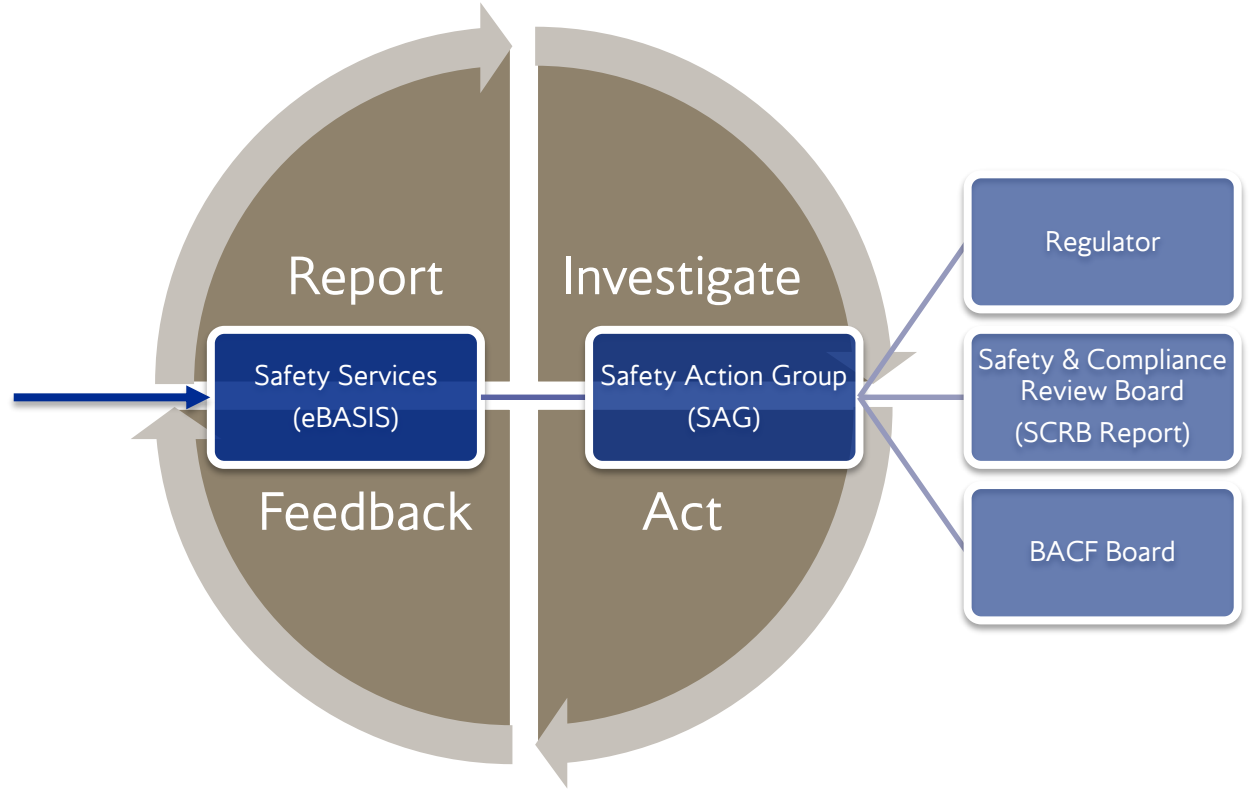
Please tick physical and cognitive signs of fatigue that were apparent in the 2 hours leading up to the event and any control measures used

Physical Signs	Cognitive Signs	Communication	Alertness (last 10hrs)
<input type="checkbox"/> Heavy Yawning	<input type="checkbox"/> Slower Reaction	<input type="checkbox"/> Reduced Clarity of Text	1. <input type="checkbox"/> Fully Alert/Good Focus
<input type="checkbox"/> Itching	<input type="checkbox"/> Impaired Attention	<input type="checkbox"/> Confused Word/Word	2. <input type="checkbox"/> Very Heavy Tired at Peak
<input type="checkbox"/> Rubbing Eyes	<input type="checkbox"/> Impaired Memory	<input type="checkbox"/> Increased Communication	3. <input type="checkbox"/> OK/Somewhat Focused
<input type="checkbox"/> Yawning	<input type="checkbox"/> Negative Mood	<input type="checkbox"/> Confusing	4. <input type="checkbox"/> A little Tired
<input type="checkbox"/> Insignificant Energy	<input type="checkbox"/> Reduced Communication	<input type="checkbox"/> Good & alert	5. <input type="checkbox"/> Moderately Tired
<input type="checkbox"/> Slowing Listening	<input type="checkbox"/> Impaired Problem Solving	<input type="checkbox"/> In Flight Rest/ Coding Help	6. <input type="checkbox"/> Extremely Tired
<input type="checkbox"/> Long Blinks	<input type="checkbox"/> Increased Rest Talking	<input type="checkbox"/> None Noted	7. <input type="checkbox"/> Completely Exhausted
<input type="checkbox"/> Blurred/Heavy Eye Cams	<input type="checkbox"/> Impaired Situational Awareness		
<input type="checkbox"/> Head Nodding			
<input type="checkbox"/> Other: _____	Other: _____		

Submission Process:

Complete electronically and email to: Safety & Compliance (safcom@ba.com) or alternate July FAX to 44 (0) 91 447 5465
 Please send 1/2 original to: Safety Services, BA Group, Filton, House: Dobbins, Gloucestershire, GL2 2BA

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The Culture Challenge

Addressing the Cultural Challenge in Engineering is not to be underestimated

Machoism

Peer pressure /
expectations of
peers

Trust

In process and
Management buy-in

Personal Pride

Engineers are
naturally solution
orientated

Can do Attitude

"I don't want to let
anyone down"

Personal Responsibility

ORO.FTL.115 states Crew Members shall:

- Comply with CAT.GEN.MPA.100(b) of Annex IV (Part-CAT); and
- Make **optimum use** of the opportunities and facilities for **rest** provided and plan and **use** their rest periods **properly**

Maintenance Personnel carry a similar personal responsibility

Corporate Responsibility

Six (6) key elements needed to be in place:

1. Accountable Managers commitment to managing Fatigue and improving crew member alertness – iMSM Part 3.5.9
2. Fatigue Management Policies & Procedures – MSP316, AMC316, GM316, Part A Section 7 & 4, iMSM
3. A Fatigue Reporting System – eBASIS & MSF316
4. An Education & Awareness Training programme – iMS Training, Crew Planning & FMWG specific training
5. A System for monitoring crew member fatigue – iMSM Part 3.5.9, SAFTE-FAST & Sabre
6. A Fatigue Management evaluation programme – FMWG now evolved to → Fatigue Governance Group (FGC)



Thank You

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