FATIGUE RISK MANAGEMENT SYSTEM

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AZ FRMS BACKGROUND



5- l'attività di volo, durante il periodo di sperimentazione, dovrà essere monitorata applicando le tecniche di "FRMS" oltre che dalla Direzione Operazioni Volo e Sicurezza e Qualità, anche dall'Ente Medicina Alitalia;

FATIGUE

A physiological state of reduced mental or physical performance capability resulting from:

- Sleep loss
- Extended wakefulness
- Circadian phase
- Workload (mental and/or physical activity)

that can impair a crew member's alertness and ability to safely operate an aircraft to perform safety related duties

FATIGUE IS A SAFETY HAZARD

IT MUST BE ADDRESSED AND CONTROLLED

Since ever crewmember fatigue has been managed through **PRESCRIBED** limits on maximum Flight and Duty Times, based on a historical understanding of fatigue through simple work and rest period relationships

BEING INSIDE THE LIMIT IS SAFE

BEING OUTSIDE THE LIMITS IS UNSAFE

New knowledge related to the effects of sleep and circadian rhythms provides an additional dimension to the management of fatigue risks

FATIGUE RISK MANAGEMENT SYSTEM

A **data-driven** means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing adequate levels of alertness

> FRMS applies SMS principles and processes to manage specific risks associated with crewmember fatigue

FRMS PILLARS

Policy & Documentation

Policy

- States FRM objectives
- Declares management commitment
- Identifies lines of accountability
- Identify FRM elements

Documentation

- Policy and objectives
- ✓ Processes and procedures
- ✓ Accountabilities
- Mechanism for involvement of all stakeholders
- FRM training records
- Output: recommendations & Actions

Risk Management

- ✓ Identification of fatigue hazards
- ✓ Risk assessment
- ✓ Risk mitigation strategies

Safety Assurance

- ✓ Monitoring FRM performance
- ✓ Managing changes
- ✓ Continuous improvement

Promotion

- ✓ Training
- ✓ Communication

FRMS IMPLEMENTATION

✓ On JUNE 2014 SRB DECISION FOR FRMS
 ✓ FRMS INTRODUCED TO PILOTS DURING RT 2014-15

Starting Communication and Training as early as possible Brief presentation describing FRMS scope, principles and tools

✓ FATIGUE REPORTING

Reporting Primary tool for Hazard Identification Fatigue reporting already possible by using Air Safety Report Developed an ad-hoc Fatigue Report for structured reporting Reports electronically managed

 ✓ FATIGUE SAG SETTING-UP Composition Tasks

FRMS IMPLEMENTATION – FATIGUE REPORTING

ALL INFORMATION PROVIDED IS STRICTLY CONFIDENTIAL AND MANAGED WITHIN SAFETY DEPARTMENT NAME: RANK: CREW ID: TODAY'S DATE: THIS FATIGUE REPORT FORM IS BEING COMPLETED IN ASSOCIATION WITH: (TICK ONE) An ASR A CSR A general concern regarding fatigue When did the event occur? Date (dd/mm/yy): Time (specify Local LT or UTC): How long had you been on duty? (hhmm):	🚿 🛛 🖉				F	ATIGU	E REPO	DRT	FORM			
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	FATIGUE - P	HYSICAL SIGNS		COGNITIVE SIGNS					
If you are reporting a specific event rather than a general concern please tick all physical and cognitive	Fidgeting Fast talking Rubbing ey	es		Action or lack of action Action-slips Action-lapses/omissions Impaired memory					
signs of fatigue that were apparent in the <u>2 hours</u> leading up to the event.	Yawning Frequent b Staring bla Long blinks Difficulty k Head nodd NO PHYSICA OTHER:	linking nkly eeping eyes open ing L SIGNS WERE NOTI	ED) (103090200) (103080600)				
How alert did you feel immediately prior to the event (tick one):	□ 1 Fully alert, wide awake	2 Very lively, somewhat responsive, but not at peak	c som f	3 OK, newhat resh	A little tired, less than fresh	5 Moderatel y tired, let down	 6 Extremely tired, very difficult to concentrate 	Completely exhausted	
Did you apply napping during flight? Yes				D No					
NOTE: IF YOU WISH TO I SUGGESTIONS FOR CORI	RECORD ADDITIO	NAL INFORMAT	10N HE S	NOT CO PACE BE	IVERED BY THI	S FORM, IN	CLUDING ANY		

TICK HERE IF ATTACHING ADDITIONAL SHEETS:

NUMBER OF SHEETS ATTACHED Sign:_____

FATIGUE REPORTS SHOULD BE FILLED-IN AND SENT ELECTRONICALLY. PAPER FORMS SHALL BE CONSIDERED AS A BACK-UP PROCEDURE IN CASE OF MALFUNCTION OF THE ELECTRONIC REPORTING SYSTEM.

FILING INSTRUCTIONS

CO/LIN \rightarrow CREW BRIEFING CENTER LL OTHER STATIONS \rightarrow KK CBC or KK \rightarrow eMail to:

sicurezza.volo@alitalia.it_Or

+39 (06) 6563 8316 or +39 (06) 6563 8354

Original form to: Alitalia SAFETY (SFT/FCO) Aeroporto Leonardo Da Vinci 00054 – Fiumicino (RM)

Fax to:

FRMS IMPLEMENTATION – FATIGUE REPORTING



FRMS IMPLEMENTATION – SAG SETTING-UP

F-SAG COMPOSITION

- ✓ Flight Operations
- Planning & Crew Rostering
- ✓ Safety
- ✓ Compliance
- ✓ Medicine

F-SAG TASKS

- Monitor FRM Performance
- Identify Hazards and assess Risks
- ✓ Propose Mitigation Strategies
- ✓ Verify effectiveness of actions taken

FRMS IMPLEMENTATION INTRODUCTION OF ALERTNESS MODELING

- ✓ Alertness Models are mathematical functions which predict alertness and cognitive performance based on:
 - Sleep / wake history
 Can be estimated from planned work schedule
 - Circadian Phase / Time of the Day Can be estimated from local time and time zone shift
- ✓ Alertness is predicted using scales (e.g. BAM uses a 0-10.000 scale, with 0 being the least alert, and 10.000 being most alert)
- ✓ Choice of the Alertness Model



FRMS - INTRODUCTION OF ALERTNESS MODELING



(AZ integration layer) DataBase Operative Crew I. BDN

CONCLUSION

- FRM is a step forward for a more accurate and efficient control of fatigue hazard
- ✓ FRM introduction easier in a SMS environment
- ✓ FRM takes time to be developed

THANK YOU FOR YOUR ATTENTION