

VIRGIN AUSTRALIA'S FRMS AND ITS APPLICATION TO CABIN CREW

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VIRGIN AUSTRALIA FRMS

- Applied equally to Flight and Cabin Crew
- Developed on International Standards
- •CASA approved
- Flexible
- •Customisable
- Tailored to the operation
- Subject to continual review and improvements



WHY HAVE AN FRMS?



• The FRMS is "designed to limit the opportunity for fatigue to become an issue during operations. Rather than relying on compliance with prescriptive hours of service rule-sets in order to manage the safety-related risks of fatigue, the FRMS develops and employs multiple strategies to continuously monitor and manage fatigue such that each strategy forms an additional layer of defence against the risks associated with fatigue."

CASA, Guidelines for Bio-mathematical Modelling



A MATTER OF DUAL RESPONSIBILITY



The FRMS:

- Data driven system
- Implement "soft rules"
- Promotes open and honest reporting
- Continual improve the FRMS
- Minimise fatigue risk via appropriate crew rostering
- Accommodation options

Crew will ensure they:

- Utilise rest opportunities
- Ensure completion of FRMS training
- Report fatigue!
- Understand FRMS policies and
 - procedures
- Report other's fatigue
- Develop a lifestyle to support their operation

FRMS GOVERNANCE STRUCTURE





FRMS STRUCTURE



Crew Alertness Study Team (CAST)

Who's in it?

Representatives from Flight Crew, Cabin Crew, Network Operations, Safety Systems and other divisions.

What do they do?

Assess reported instances of fatigue and review trends to identify organisational factors contributing to Crew fatigue.

CAST do not review reports with the intention of assigning blame.

Governance Committee

Who's in it? General Managers of the divisions involved in the FRMS and Safety Systems representatives.

What do they do? Oversee the maintenance and continual improvement of the FRMS. The Governance Committee receives recommendations from the CAST and Roster Pairing & Review Team and makes decisions based on these recommendations.

Roster Pairing and Review Meeting

Who's in it?

Representatives from Flight Crew, Cabin Crew, Flight Operations Management, Manager Cabin Crew, Network Operations, Safety Systems and other divisions.

What do they do?

Assess and review roster pairings and practices to identify combinations and systemic practices which may lead to an increased risk of Crew fatigue.

FRMS PROCESSES



PRE-ROSTER PUBLISH



DAY OF OPERATIONS



POST-ROSTER

✓ Pairing File FAST analysis
 ✓ Pre-roster FAST analysis

✓ Pairing Review Meetings

- ✓ FRMS Provisions
- ✓ Fatigue Reporting
- Utilisation of fatigue management strategies

✓ Post-roster FAST analysis
 ✓ FRMS Reporting cycle
 ✓ Continuous improvement

FRMS PROCESSES





✓ Pairing File FAST analysis

- ✓ Pre-roster FAST analysis
- ✓ Pairing Review Meetings

SAFTE-FAST BIO-MATHEMATICAL FATIGUE MODELLING





Validated and widely used biomathematical modelling tool since 2000.

Used by regulators, military, unions and within rail and aviation industries.

Approved modelling tool used by the US FAA and a number of leading airlines.

Software decision aid designed to assess and forecast performance changes associated with reduction of sleep and time of day.

	FAST	FAID
Time zones	✓	
Length of duty	✓	\checkmark
Acclimatisation	✓	
Sleep quality	\checkmark	
Sleep duration	✓	✓
Circadian rhythm	\checkmark	
Commute times	✓	
Sleep inertia	✓	
Augmented crew rest	✓	
Workload	✓	
Naps	✓	
In-flight rest	\checkmark	

Key points to consider

Like all bio-mathematical fatigue modelling tools, FAST is only as accurate as the inputs it receives.

Inputs developed through:

- Actigraphy
- Guidance from Scientists
- Sleep Survey data
- Principles of fatigue science
- Liaison with FRMS stakeholders







When interpreting a FAST graph, there are a number of components to consider.





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RISK LEVEL	SAFTE-FAST THRESHOLD VALUES		
Very Low	90 - 100	No action required at any stage	None required
Low	75 - 90	Acceptable risk at critical phase of flight	Consider validation via post-roster analysis
Medium	65 - 75	Alter unless risk is accepted by crew management	Investigate and assess risk
High	< 65	Unacceptable risk level	Roster modification required

PAIRING AND ROSTER ANALYSIS



Objective

Review pairing and rostering practices that may present a fatigue risk over a complete roster period.

Process

- 1. Resource Planning completes pairing files and roster build.
- 2. FRMS Program Team runs files through FAST to identify the level of risk presented in individual pairing and crew roster.
- 3. Any scenario in which the crew member's effectiveness score (at a critical phase of flight) drops below 75% are noted on the FRILs (Fatigue Risk Identification Logs).
- 4. Completed FRILs are provided to Cabin Crew management for their review.
- 5. Crew management will review risk presented and either 'accept' or direct Network Operations to alter the pairings/rosters.
- 6. Network Operations act on the instruction of Crew management and make alterations accordingly.

FRMS PROCESSES





- ✓ FRMS Provisions
- ✓ Fatigue Reporting
- ✓ Utilisation of fatigue management strategies



FRMS PROVISIONS

On *Day of Operations*, Cabin Crew have the following fatiguemitigation options available to them:

- 1. Removal from Duty
 - Removed from current duty regardless of location
 - Mandatory 10 hour rest period (12 hours for Long Haul Cabin Crew)
 - Requirement to submit a fatigue report within 24 hours
 - Complete Duty of Care conversation with manager
 - Company sponsored where criteria is met (i.e., having had at least 1 duty day prior)

australia	Fatigue Report (Ver - 2.0)
00000	
General Details	
Staff Name * (As you type, a list of names will appear, please ensure you select the name from the list)	Staff Type *
	Cabin Crew
Airline Involved (AOC) *	UTC/Local
	○ UTC
	FRMS Group *
12 AM 000	Please select a value
Place/Location * Please select a value	
Flight Number	Crew Base *
Ο VA Ο ΠΤΟ QQ	Please select a value
Departure From	Destination To
Please select a value	Please select a value
AircraftType	Aircraft Registration
Please select a value	Please select a value
Did Yo	u Take a Meal Break During Duty? 🔿 Yes 🔿 No
н	ave you been removed from duty? O Yes O No

2. Access to Post-Duty Transport and/or Accommodation

- \$150/60km worth of travel in a taxi or hotel accommodation
- Aim is to ensure crew are not driving home when too fatigued to do so safely following a duty

FATIGUE REPORTING AND MITIGATION STRATEGIES





Reporting Themes by Resource Group

	Reduced rest on Day of Operations following BOC
	duties
	High workload pairings
Short Haul Australia	Transitioning early to late starts
	Transport time around SYD Airport Precinct
	DPS BOC flights
Short Haul New Zealand	APW & RAR BOC flying
	High workload routes (i.e., NAN returns)
Long Haul	High workload routes (i.e., NAN returns) Acclimatisation issues
Long Haul	High workload routes (i.e., NAN returns) Acclimatisation issues Network disruptions
Long Haul ATR	High workload routes (i.e., NAN returns) Acclimatisation issues Network disruptions Availability of crew meals

	Staff Number: Crew Nam Flight #: Route/Sec From:		nber: Crew Name: Crew Type Fight Route/Sector: From: To: Crew Bar		Airline: Flight Crew Cabin Crew Virgin Aust trew Base:		ralia Airlines (VAA)
leral							Virgin Australia International (VAI)
Gen	Aircraft Reg: Aircraft Type:	Date/Time of 0 dd mm	yy time	Place/Locati of Fatigue:	on	Have you been	removed from duty due to fatig
Sleep	Sleep in 24 hrs prior Sleep in 48 hrs prior	to Sign-on:	Hours awake at Sign-c	n: /Al Only): □ 4 th	Ho	ours allocated cre ours slept in crew	w rest (VAI Only): rest? (VAI Only):
Н	tel Information	Ho	tel Location/Name:	Hotel R	loom I	No.:	Check-in Date:
Factors	Select your Primary (Selections will be dis tick applicable box Disruption/Flight Extension of Dut Roster changeT Hotel transport ti Quality of hotel n Duration of inflight Quality of inflight	r Fatigue Factor: sregarded if more delay y me est bunk rest bunk	than one factor is selecte Disrupted home rest Personal health Lack of Meals during dut Lack of Crew Breaks Workload during flight Time since previous duty Length of duty Layover length Circadian disruption	Select up (Selection tick applin Calle Disru Exter Rosts Hotel Quali	to to the swill cable d out ption ision ar chair trans ty of i to n of ty of i	wo other Fatigue II be disregarded i boxes /Flight delay of Duty ange/Tinp swap sport time hotel rest of inflight bunk rest inflight bunk rest	Factors: more than two items are select Disrupted home rest Personal health Lack of Crew Breaks Workload during flight Time since previous duty Lacyover length Lacyover length Carcadian disruption
Fatigue	When did you ident Prior to sign-o At sign-on During flight	ify your fatigue? n I	(select <u>one</u> only) Post duty Other	Tek any of the actions taken as a result communication Drawn of the action of the action Drawn phrase of the action of the action of the action Drawn of the action of th		e actions taken tion dvised vised A.CC advised	as a result of fatigue: Ground Action Hotel accommodation Transport home
	 How you felt at the Fully alert, wide extremely peppy Very lively, resp not at peak OK, somewhat fi A little tired, less 	time of your fatig awake, 5. onsive but 7. resh than fresh	jue: (select <u>one</u> only) Moderately tired, let down Extremely tired, very diffi to concentrate Completely exhausted, unable to function effectively, ready to drop			Adjusted inflight crew rest Adjusted inflight crew duties Controlled rest used Removal Removal from duty	



FRMS PROCESSES





- ✓ Post-roster FAST analysis
- ✓ Continuous improvement
- ✓ FRMS Reporting Cycle

POST-ROSTER ANALYSIS



Objective

To review the impacts of the pre-roster analysis (and subsequent actions) and that of operational disruption and other 'day of operations' changes. The post-roster analysis is fundamental to the maintenance of the learning culture within the FRMS.

Process

- 1. Following the completion of a roster period, the FRMS Program Team will analyse the rosters to identify sectors where minimum effectiveness levels were below the 75% threshold.
- 2. A FRIL is then provided to Cabin Crew management identifying those scores. Using details of that roster, management will be able to identify the cause of the low effectiveness scores and work towards mitigating these risks in future roster periods.

FRMS REPORTING CYCLE



rew Alertness Study Team (CAST)	Governance Committee	Roster Pairing and Review Meetin	
Who's in it?	Who's in it?	Who's in it?	
Representatives from Flight	General Managers of the	Representatives from Flight Crew,	
Crew, Cabin Crew, Network	divisions involved in the	Cabin Crew, Flight Operations	
Operations, Safety Systems and	FRMS and Safety Systems	Management, Manager Cabin	
other divisions.	representatives.	Crew, Network Operations, Safety	
		Systems and other divisions.	
What do they do?	What do they do?		
Assess reported instances of	Oversee the maintenance	What do they do?	
fatigue and review trends to	and continual improvement	Assess and review roster pairings	
identify organisational factors	of the FRMS. The	and practices to identify	
contributing to Crew fatigue.	Governance Committee	combinations and systemic	
	receives recommendations	practices which may lead to an	
CAST do not review reports	from the CAST and Roster	increased risk of Crew fatigue.	
with the intention of	Pairing & Review Team and		
assigning blame.	makes decisions based on		
	these recommendations.		

CAST	GOVERNANCE	PAIRING REVIEW
Every 56 days	Every 56 days	Every 28 days (each roster period)
Reviews previous 2 roster periods	Reviews pervious 2 roster periods	N/A – Forward focused
CAST Report	Governance Report	Supporting data pack

FRMS REPORTING CYCLE





THANK YOU!



QUESTIONS?

CONTACT US:

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