MANAGING THE THREAT: BEYOND ENDURANCE SUSTAINING OPERATIONS

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BEYOND ENDURANCE SUSTAINING OPERATIONS

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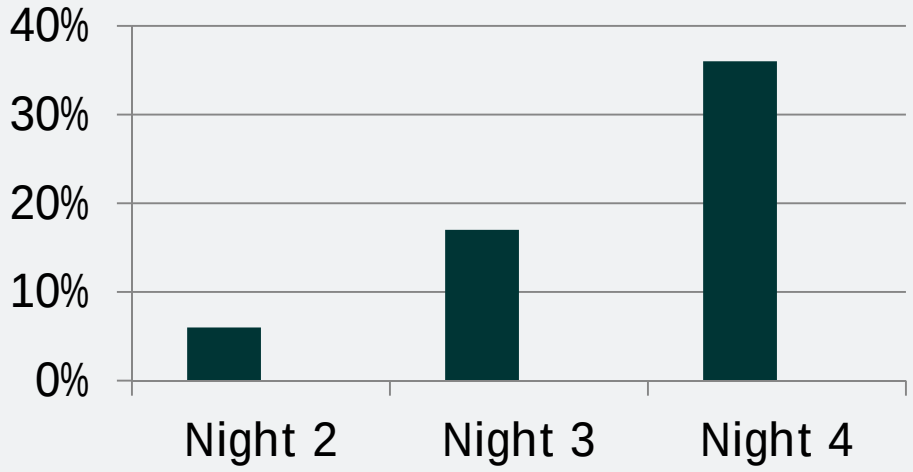
AIMS

1. To evaluate the sleep, fatigue and performance implications of alternative sustained operations schedules

   -12 hours on / 12 hours off
   -8 hours on / 8 hours off
   -6 hours on / 6 hours off

FATIGUE-RELATED INCIDENTS DURING SHIFTWORK

-Risk increases over consecutive number of days worked



Folkard, S., Lombardi, D.A., & Tucker, P.T. Industrial Health 2005, 43, 20-23.

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FATIGUE-RELATED INCIDENTS DURING SHIFTWORK

-Risk increases over consecutive number of days worked

-Risk higher during nightshift than dayshift

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FATIGUE-RELATED INCIDENTS DURING SHIFTWORK

-Risk increases over consecutive number of days worked

-Risk higher during nightshift than dayshift

-Risk increases with increasing shift length > 8 hours

Prior wake	Risk level
<12 hours	Low
12–14 hours	Moderate
14–16 hours	High
+16 hours	Very high

Folkard, S., Lombardi, D.A., & Tucker, P.T. Industrial Health 2005,

Figure from The Fatigue Risk Management System Resource Pack, Queensland Government.

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FATIGUE-RELATED INCIDENTS DURING SHIFTWORK

-Risk increases over consecutive number of days worked

#Long deployments

-Risk higher during nightshift than dayshift

#High proportion of workforce working night shift

-Risk increases with increasing shift length > 8 hours

#Long shifts, often in excess of 12-14 hours

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METHODOLOGY

N=60 participants, 12 in each of 5 groups:

-12 hour day shift
-12 hour night shift
-6 hour early shift
-6 hour late shift
-8 hour shift

Measures include polysomnographic recording of sleep, neurobehavioural performance, mood, memory, and risk taking

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PROF HANS VAN DONGEN

-Washington State University

-Sleep and Performance

-Work funded by U.S. Army, U.S. U.S. Air Force, NASA, NIH, Federal Motor Carrier Safety Administration

-World leader in mathematical and statistical modelling

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AIMS

1. To evaluate the sleep, fatigue and performance implications of alternative sustained operations schedules

2. Develop a bio-mathematical model to estimate fatigue risk under different operational constraints

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DR SIOBHAN BANKS

-Senior Research Fellow

-Adjunct Professor of Psychiatry

RESEARCH FOCUS

-Metabolic consequences of Sustained Operations shift work schedules

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STEPHANIE CENTOFANTI

-BPsych (Hons)

University of South Australia

RESEARCH FOCUS

-Recovery of alertness and performance following Sustained Operations shift work

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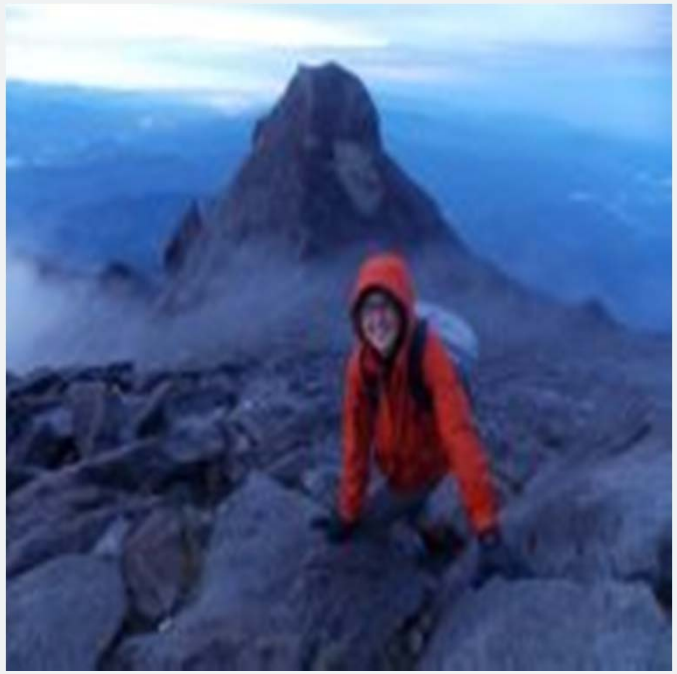
CASSIE HILDITCH

-BSci (Hons)

-Fatigue Consultant at Clockwork Research, UK



RESEARCH FOCUS

-The impact of sleep inertia on fatigue and performance during sustained operations

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Fatigue during 6hrs on/6hrs off early roster

-Very low levels of mean fatigue reported across roster, with no trend toward increasing fatigue across days

Samn-Perelli fatigue checklist	
1	Fully alert
2	Very lively
3	Okay
4	A little tired
5	Moderately tired
6	Extremely tired
7	Completely exhausted