SLEEPING ON THE FIREGROUND

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BACKGROUND

The nature of some occupations necessitates 'onsite' workers to live in work facilities between consecutive shifts. Examples include international airline pilots, miners, train drivers, truck drivers and army personnel. Similarly, during large-scale bushfires, firefighters can live in temporary accommodation for many days at a time.

While necessary, there may be disadvantages to these working arrangements because anecdotally, people sleep more poorly when out of their usual (typically home) environment. Importantly, how well workers sleep between shifts will dictate how they feel and their capacity to perform their work safely and effectively. In line with this, in a recent review we queried whether workers are able to obtain adequate sleep when away from home.

The aim of this review was to inform debate as to whether sleeping at home always results in the best outcomes for sleep.

FINDINGS OF THE REVIEW

Based on the home sleep data that was available (typically between days off), found that in general, sleep at home was better. However, we concluded that it was not the location per se that made this so, rather, the weight of the evidence suggests that it is the factors defining the sleep opportunity, specifically, timing and duration that will most significantly dictate the outcomes for sleep.

The physical sleep environment can also present a significant barrier to obtaining adequate sleep. While few studies actually quantified environmental disturbance, it is known that factors such as movement, noise and vibrations can all negatively impact on sleep¹⁻³. In addition, in the studies that asked workers about the sleeping environment whilst away, light, temperature and noise were identified as factors interfering with sleep in multiple workplaces ⁴⁻⁶.

SLEEPING CONDITIONS DURING BUSHFIRE SUPPRESSION

The nature of bushfire suppression means that salaried and volunteer firefighters must contend with the usual, negative aspects of shift-work including extended shifts and night shifts both of which can have negative consequences for sleep. The unrelenting and unpredictable nature of bushfires however, make it impossible for night work (and thus day sleep) and extended work shifts to be avoided.

Based on reports from firefighters themselves⁵ we would indentify the physical environment as being a barrier to adequate sleep as well. While hotel or motel accommodation is often used during large-scale bushfires, firefighters can also be housed in communal tents ('Tent City', see Photo). There are a number of features of the 'tent-city' environment which present a significant challenge to sleep. Specifically, there is little protection from noise, light and heat⁵.

Focus should therefore be on making improvements to the physical sleep environment. A good alternative to tents for example would be to house firefighters in hotels or motels where the environmental conditions, in particular noise, light and temperature are more easily controlled. Where the 'tent city' or similar set-ups cannot be avoided however, the following 'Top Tips' can be use to help maximise sleep.



Photo: CFA Strategic Communications

TOP TIPS TO OPTIMISE 'ON-SITE' SLEEP

- Keep the sleeping environment as dark as possible by using eye masks and/or blinds.
- Keep the temperature of the sleeping environment comfortable, but slightly cool (around 16-20° C).
- Ensure that bedding (stretcher beds etc) is comfortable and suitable for all body shapes and sizes (or have alternatives available)
- Wear dark glasses after a night shift to minimise the alerting impact of sunlight just prior to sleep during the day.
- Use earplugs to block out noise, or use 'white noise', such as a fan or specific 'white noise' CD to help block other noises.
- Situate sleeping quarters as far as practicable from other sections of the staging site (meal, management areas) and moving vehicles to reduce noise for those trying to sleep.
- Where possible, have people sleep in individual room/tents or smaller groups to minimise disturbance.
- Have day crews sleep in one area and night crews in another area rather than mixing them up.
- Ensure that mobile phones and pagers are turned off when it is not essential to have them on.
- Formalise/improve handover processes. If workers have confidence in their team, work-related stress and anxiety (which can interfere with sleep) can be reduced when not working.







¹ Arnberg, P. W., Bennerhult, O., and Eberhardt, J. L. (1990) *J Acoust Soc Am* 88, 1486-1493

² Bluhm, G., Nordling, E., and Berglind, N. (2004) *Noise Health* 6, 43-49 ³ Thiis-Evenson, E. (1958) *Industrial Medicine and Surgery* 27, 439

⁴ Rosekind, M. R., Gregory, K. B., Co, E. L., Miller, D. L., and Dinges, D. F. (2000) Crew factors in flight operations XII: A survey of sleep quality and quantity in on-board crew rest facilities. Moffett Field, California

⁵Cater, H., Clancy, D., Duffy, K., Holgate, A., Wilison, B., and Wood, J. (2007) Fatigue on the fireground: the DPI experience. . in *Australasian Fire Authorities Council/Bushfire Co-Operative Research Centre Annual Conference* (Thornton, R. ed., Hobart Grand Chancellor.

⁶ Baulk, S. D., and Fletcher, A. (2012) *Accident Analysis and Prevention* 455, 36-40