

A cool bedroom, blackout curtains, and ear plugs

Some tips to minimise fatigue.

“ I’ve just got off the phone with operations who want me to conduct a job in excess of 17 hours of duty starting late afternoon and concluding the following day, which also happens to be my first two consecutive rostered days off in the last 24 days. Comments made to me during the conversation were ‘you can imagine how this is going to go down’ and ‘I don’t have another option, so is that how you are going to go on that?’”

These comments were part of the first survey of its General Aviation pilot members by the union, NZALPA.

The survey, published in June 2018, found that 40 percent of GA pilots felt pressure from their employer to exceed flight time, duty time or minimum rest limits, or to operate contrary to the provisions of the employer’s operations specification or manuals.

It illustrates how fatigue continues to be treated at some organisations, with pilots reluctant to raise legitimate concerns, and employers absolving themselves of responsibility for their workers’ well-being.

CAA heli ops inspector Jason Frost-Evans says effectively managing fatigue can be particularly challenging given the New Zealand ‘she’ll be right, toughen up’ culture.



Jason says fatigue is a “slippery customer” when it comes to being identified as a clear cause of an occurrence.

“Why a pilot made a poor decision or lost situational awareness that led to an incident might be hard to distinguish.

“If you can say, ‘they were up early the last three mornings; there’s a new baby in the house’ or the incident ‘happened at 4am’, then you might be able to pinpoint fatigue as a contributing factor. But otherwise, unless someone nods off, fatigue is very hard to establish as a clear cause of an accident.”

So, how much sleep is enough? As everyone knows, that varies from person to person. There are people who claim they need only four or five hours a night.

“But sometimes they’re performing at a suboptimal level,” says Jason. “It’s just that they’ve got used to it. It’s normalised for them.

“It’s only perhaps in an emergency that it becomes evident just how poor their performance is.”

You can however, assess your own needs by monitoring the hours you sleep during the third night in an at least three-day, non-work period.

The nights to be monitored need to be approached somewhat formally – no hard partying the evening before, no blue screens (computer and phone) for two hours before retiring, and of course, no alarm clock.

The first two nights pay back any cumulative sleep debt, and then the third night should reflect the body’s natural sleep requirement.

CAA’s Human Factors specialist Dr Laurie Earl outlines the concept of the ‘sleep bank’.

“For every hour someone is asleep, they earn two credits. After eight hours sleep, they have 16 credits in their sleep bank. For every hour they’re awake, they spend one credit, so with eight hours sleep, they can be awake and alert for 16 hours.

“If they’ve slept five hours, they earn 10 credits, and this will keep them going for 10 hours. After that, they’ll need to have a nap to top up their sleep bank, and get through the rest of the day, or at least to enable them to drive home safely.”

Of course, not all sleep is equal. Eight hours between 10pm and 6am will be of better quality than eight hours between 10am and 6pm.

Despite fatigue being hard to pin down as the originating cause of occurrences, it’s widely believed to be at least a contributor to many incidents.

Laurie believes that where appropriate and possible, establishing a fatigue safety committee would benefit both operators and pilots.

“Reports of fatigue should be encouraged and responded to like other occurrence reports – that is, not with discipline but with a strategy on how to avoid it in the future.

“The committee could also look at themes in reporting – a particular shift pattern, for instance, that seems to exacerbate tiredness.

“The message should be that no one flies if they are tired. The fatigue committee might want to know the reason why a pilot is tired – it might be a sick child at home, or a particular shift system, or a noisy hotel that the pilot was accommodated in – but the committee needs to know so it can collate trends and pass to a management team to action.”

Both the company and the pilot are responsible for fatigue mitigation – the company has to ensure adequate rosters to allow rest, and the employee is responsible for using that time to rest, not working on a side hustle, or partying up the night before returning to work.

The internet is awash with ways to promote good sleep and mitigate fatigue. Check the end of this article for links to resources.

But here are some tips to start you off.

Decide your sleep chronotype (night owl or morning lark). If you’re an owl, on the first day of your night shift, stay up late the night before and sleep in the next day. If you’re a lark, get up at the normal time but get into the practice of napping between 3pm and 5pm before your shift starts. (The dip in the circadian cycle at this time promotes sleep).

When you return home from overnight work, go to sleep straight away. Don’t be tempted to first have breakfast and take the kids to school and do the washing. Brain physiology means you’ll wake at your normal time. So if you sleep at 6am and you wake at midday, you get six hours. If you sleep at 11am, you will still wake at midday and get one hour’s sleep.

If in the middle of a shift, or about to start one, don’t nap for longer than 20 minutes. Beyond that, you run the risk of entering a deeper sleep, with the possibility of sleep inertia on waking – that groggy, disoriented feeling.

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More information

For more information on fatigue and resources, visit www.caa.govt.nz/fatigue.

Also have a look at the CAA’s Health and Safety Unit’s fact sheet on fatigue at www.caa.govt.nz/hsu.

To be kept up to date with the CAA’s fatigue management project, visit www.caa.govt.nz/subscribe, and select “Medical Matters”.

Finally, have a look at the AvKiwi *Personal Preflight* online seminar at www.caa.govt.nz/avkiwi.

Sleep working

Fatigue. Wake up to it.

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Shift patterns that move forward in time are more in tune with our circadian rhythm than the opposite. For example, earlies, lates, nights, rather than the other way round. In other words going forward with the clock.

On the ride home from overnight work, pulling over and napping is the only way to combat sleepiness. Caffeine, an open window and loud music will not prevent the potentially deadly 'micro-sleep', where the driver is moving in and out of consciousness without even realising it. (Not to mention the effect of this in flight during an approach.)

Sleep in a cool bedroom and invest in blackout curtains – light and heat do not make for a good sleep.

Neither, obviously, does noise. Invest in ear plugs, or something that supplies 'white' or 'brown' noise, and establish a family culture of quiet when you're asleep – never easy but sometimes necessary.

If you need to get up during the night, invest in a red lamp. It will give you light without stimulation.

"Handling fatigue appropriately is not necessarily about spending more money," says Jason Frost-Evans.

"It doesn't have to be dealt with by just hiring more pilots, or establishing more rest periods. The risk could be reduced by providing fatigue training, and formalising cross checking between crew members, when the PIC flags a fatigue risk.

"And it's not solely about preventing fatigue, but also what to do when you are fatigued – doing what you can to mitigate fatigue to a safe level.

"It's about managing fatigue properly. When organisations work smart around fatigue, pilots may actually be able to work more hours, and certainly work them more safely." ■

Taxiway Signage Changes



The signage at runway-holding positions is being standardised. Here's what you need to know.

The next time you're taxiing at a New Zealand certificated aerodrome, the signs at the runway-holding position may look different.

That's because after 31 July 2018, all certificated aerodromes without a parallel taxiway will have standardised runway-holding position signage. These signs are positioned before the entrance to a sealed runway. Changes will be reflected in *AIP New Zealand*.

Standardising signage will help to reduce runway incursions by increasing the situational awareness of taxiway users. This will be supported by air traffic services using common phrases when issuing instructions "to hold".

The changes come under rule 139.51 *Aerodrome design requirements* that covers the transitional introduction of mandatory signs. This rule seeks to bring consistency to aerodrome layouts, and operations at aerodromes without parallel taxiways.

Taxiways will be identified sequentially, from A to Z, from one end of the aerodrome to the other. Runway-holding positions will be identified by a combination of the taxiway identification plus, if required, a number unique to that taxiway, starting from the main runway outwards with the number 1. The identifier, for example A1, should always denote the closest runway-holding position to the main runway on an airfield without a parallel taxiway. ■

