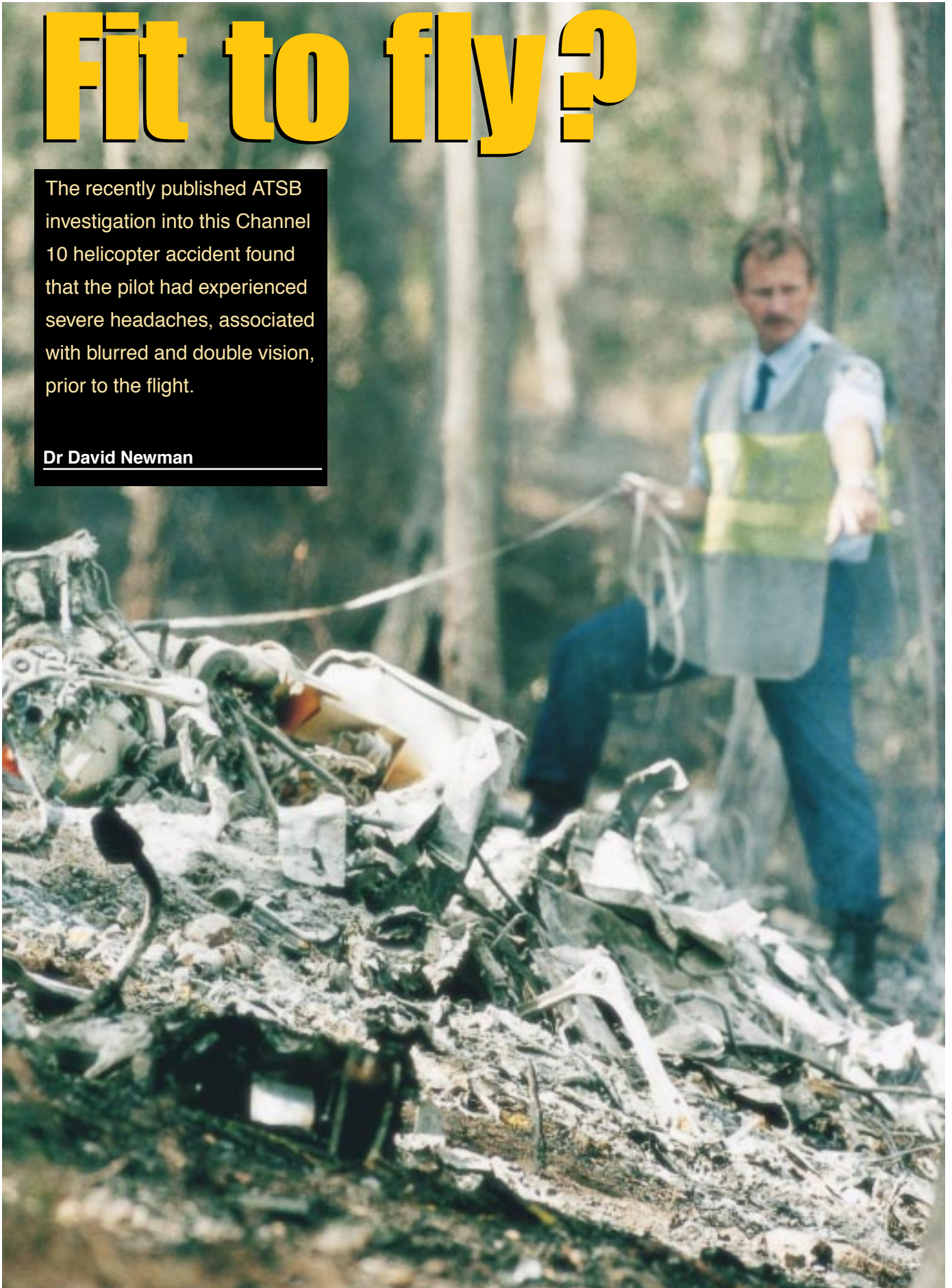


Fit to fly?

The recently published ATSB investigation into this Channel 10 helicopter accident found that the pilot had experienced severe headaches, associated with blurred and double vision, prior to the flight.

Dr David Newman



ON THURSDAY 18 AUGUST 1998, a Bell 206B helicopter, operated by Channel 10, was involved in a fatal accident at Mt Coottha in Brisbane as it approached its landing area. Crashing into trees while flying at a normal cruise speed, with no roll rate, the cause of the crash was not immediately obvious.

Investigators considered a number of possible failures that could have been encountered during the flight. Witness reports were consistent with recorded radar data that indicated the flight path was smooth, with no unusual noises or abrupt movements of the helicopter. In addition, the weather was good, ruling this out as a contributing factor in the accident.

With this information, investigators turned to the pilot and his flying experience. The pilot held an ATPL, a Class 1 medical certificate and thousands of hours flying time in both fixed-wing aircraft and helicopters. His flight time on helicopters alone was more than 7,000 hours.

The recently published ATSB investigation into the accident revealed that this highly experienced pilot had experienced a series of significant headaches, variously associated with either blurred or double vision, prior to the flight. The pilot had consulted his designated aviation medical examiner (DAME) and had been referred to a number of specialists for diagnoses of his symptoms. Evidence available to the investigation indicated that the pilot had suffered a headache early in the morning of the accident flight and some Channel 10 staff reported that he did not appear to be well on arrival at work. The ATSB report lists this as a significant factor in the accident.

This tragic accident serves as a timely reminder to both pilots and DAMEs of their responsibilities under the Civil Aviation Regulations when the health status of a pilot changes. It also serves as an opportunity to remind all who fly of the dangers of doing so while suffering from even the most minor medical conditions.

So, how do you assess your fitness to fly? A useful personal checklist is the pithy acronym "I'M SAFE" (which stands for Illness, Medication, Stress, Alcohol, Fatigue, Eating). It is an easily applied and practical tool. If you can satisfy yourself that none of the six items adversely affect you, then you are fit to fly.

Illness: Flying an aircraft requires you to be in the best possible condition. It can be a demanding activity, which will be made more difficult if you are not well enough to do it. Serious medical conditions are clearly incompatible with flying, but what about the common, everyday illnesses such as the flu,



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the common cold or a headache? Should you fly with these? It makes good sense to only fly when you are fully fit, so the answer is no.

The common cold, like most other illnesses, makes you feel fatigued and generally unwell. Even a simple headache can be a distraction, and if it is a migraine headache it can be incapacitating. Attempting to deal with inflight problems (aircraft emergency, deteriorating weather) while suffering from a headache is likely to be a hindrance at the very least, and may well make the headache worse.

Flying with a cold is a particularly foolish thing to do, for many reasons. A well known consequence of a cold is the increased difficulty in clearing the ears during descent. This leads to ear pain, and if the pressure change is significant enough it can result in rupture of the ear drum. Similar problems can occur in the sinuses, with the increasing pressure differential leading to severe pain and even bleeding. Sinus and otic barotrauma can be significant problems and can cause extensive damage to the middle ear and sinuses, which may require a protracted period of grounding during the recovery process.

Flying with a cold can also lead to alternobaric or pressure vertigo. In this situation, when you attempt to clear your ears one will remain blocked. The resultant difference in pressure can cause dizziness, which can be severe and disabling.

The common viruses responsible for colds also tend to affect the semicircular canals in the inner ear, leading to increased risk of dizziness and spatial disorientation. Spatial disorientation is a serious inflight problem for even a healthy pilot in the face of poor weather and lack of outside visual references. Having your balance organs affected by a virus significantly increases the risk of disorientation. The flight safety implications

of this are obvious.

Medication: There are several problems with medication and flying. The drug may react or behave differently in the flight environment. Its effect may be different due to physiological stressors such as cold, hypoxia, or fatigue. Unless you have taken the drug before and flown with it, you really don't know how it is going to behave at altitude. What about side-effects? These can range from skin rash, nausea and drowsiness to a serious potentially fatal allergic reaction in susceptible people. Everybody is different, so the same drug in a group of people may affect them all slightly differently. You have to take the drug first to find out if you're particularly sensitive to it or not. It's better to do that on the ground. You don't want to

Health and the law



Section 6.16A (1) of the Civil Aviation Regulations (CAR) stresses that the pilot is ultimately responsible for his or her fitness to fly. In accordance with the law, you must not exercise the privileges of your licence if your ability to do so "...is, or is likely to be, impaired to any extent by an illness or injury, no matter how minor". Under the CARs, you are responsible for notifying CASA and/or your designated aviation medical examiner (DAME) of your changed medical status, and you must not fly during this period. Section 6.16 (2) states that DAMEs must communicate such a change to CASA as soon as practicable. Failure to do so can lead to their status as a DAME being revoked (section 6.03 (1)).

If the change in medical status lasts for seven days or more (30 days for private and student pilots), you must not exercise the privileges of your licence until cleared to do so by a DAME.

find out what your side-effect profile is when you're all alone in the cockpit a long way from expert help.

The reason that you are taking the medication is often a more obvious indication not to go flying than the medication itself. If you treat your head cold with the standard over-the-counter medications, you will probably feel better once your symptoms improve. However, if you then go flying, you are still taking the illness with you. What if the medication then wears off at the worst possible moment, such as top-of-descent in IMC? It's important to remember that cold medications don't actually shorten the course of the disease or kill the virus responsible for it. They only treat your symptoms.

All of the problems mentioned above in the section on illness will still be in the background if you fly with a cold dosed up on medication. It's an extremely dangerous practice.

There is also the problem that one drug may adversely interact with other drugs you might be taking for entirely different reasons. The combined result might be very serious. Medications, both over-the-counter and prescription, should not be treated lightly.

Your DAME will be aware of the side-effect profile of a drug you might be given and how that drug may affect your ability to fly. Make sure you get a full explanation of the nature of the medication you are given, ensure that the DAME knows what other medications you might be on, and leave the prescribing to them. On the scale of good versus bad ideas, self-medication is right up at the bad end.

Stress: Some degree of stress is a fact of modern life. In some situations, a little stress can actually improve your performance. However, too much stress will result in diminished performance. Flying is a potentially stressful exercise, and if you are significantly stressed before a flight you can expect your overall flight performance to be diminished. Feeling overstressed and not on top of things is fatiguing, and can lead to poor decision-making, distraction and inattention. Worrying about non-flying related items will make life in the air that much more difficult. If you are suffering from high levels of personal or professional stress (or both), you should carefully consider your fitness to undertake flying duties. When in doubt, consult your DAME. Not only will they be able to advise you on your fitness to fly, they should be able to help you with advice regarding stress management. Remember – you should never fly angry!

Alcohol: Flying while hungover or with a blood alcohol level above zero is not a safe

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practice. Alcohol increases fatigue, increases your chances of becoming disorientated (and G-induced loss of consciousness if you are an aerobatic pilot), can affect your vision and reduces your overall performance. If you have any symptoms of a hangover, you should consider yourself unfit to fly. **Fatigue:** A good night's sleep prior to a flight is a cost-effective way to increase flight safety. Fatigue will reduce your overall performance, and lead to increased procedural errors, poor decision-making and narrowing of attention. During long flights with little cockpit activity, pilots may actu-

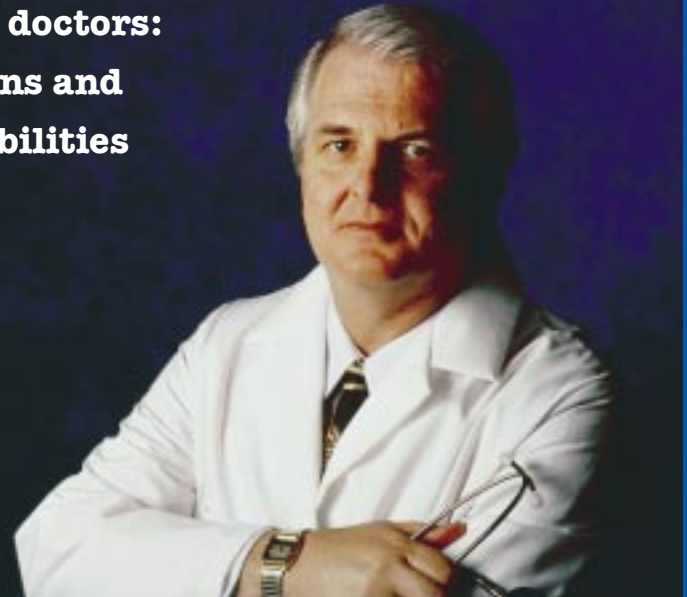
ally fall asleep. Fatigue should never be underestimated. Making sure you get a good pre-flight sleep is very important.

Eating: Eating appropriately prior to a flight can be neglected in the rush to get away on time. Eating properly in the pre-flight period means that you will not experience low blood sugar levels during flight. Low sugar levels can affect your thinking ability, making even the simplest task seem incredibly complicated. Not only that, being hungry is distracting. Make sure you eat within about six hours of your flight, and if it is going to be a long trip it would be worth taking some food and a drink with you in the cockpit.

The "I'M SAFE" personal checklist should help you determine in a simple and practical way if you are really fit to fly. Remember the old saying – it's better to be down here wishing you were up there, than up there wishing you were down here.

Dr David Newman is chief instructor at the RAAF Institute of Aviation Medicine.

Aviation doctors: obligations and responsibilities



- Designated Aviation Medical Examiners (DAMES) should be fully conversant with their responsibilities under Civil Aviation Regulation 6.04, especially relating to reporting of illness.
- DAMES should take every opportunity to make sure their pilot patients are familiar with their responsibilities under CAR 6.16.
- The regular pilot medical is an excellent opportunity to discuss general fitness-to-fly issues with pilots.

- DAMES should be aware of any medications being taken by the pilot, and their side-effects, both in isolation, and when used with other drugs.
- DAMES should ensure that pilots under their care are aware of the potential side-effects of any medication that they are prescribed.
- Close follow-up and monitoring of sick pilots will ensure that they will not return to flying without DAME clearance.