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Safer sustainable aeromedical operations through appropriate pilot fatigue regulation

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"My mind clicks on and off. I try letting one eyelid close at a time while I prop the other with my will. But the effect is too much, sleep is winning, my whole body argues dully that nothing, nothing life can attain is quite so desirable as sleep. My mind is losing resolution and control."

Charles Lindbergh about his 1927 transatlantic flight

OUTLINE //

1. Who are AFAP, who am I, and why are we here?
2. The global picture – incidents/accidents implicating fatigue
3. CAO 48.1 and recent amendments including new Appendices
4. Why Appendix 4B causes our members concern
5. Don't let the weakest link be a (ie, your) tired pilot

1. AFAP //

History

The Australian Federation of Air Pilots (AFAP) is a professional association representing over 4,500 pilots and covers most commercial and airline pilots. It is the largest organisation of its kind in Australia.

AFAP is a foundation member of the International Federation of Airline Pilots' Associations (IFALPA). The IFALPA represents over 100,000 pilots and flight engineers in almost 100 countries.

IFALPA is to pilots what the International Air Transport Association (IATA) is to airlines.

1. AFAP //

AFAP Mission Statement

The AFAP's mission is to represent and promote the interests of Australian professional flight crew and to champion the highest possible standards of aviation safety.

About me

Aviation Legal Counsel role is primarily is to advise AFAP and members on aviation laws , policies, and guidance affecting pilots, as well as defend pilots in matters affecting medical certificates and licenses.

Champion our members' causes at relevant fora and conduct training

Personal interest in this area

2. THE GLOBAL PICTURE – SAFETY//

There are real safety grounds for enacting this legislation. I am aware of many cases of pilot fatigue in recent years in the context of Australian airline operations which all occurred under completely "legal" flight and duty time limitation rules. We must do better than this …

Capt David Booth, AFAP President

THE AUSTRALIAN

Airlines reassert tired argument on fatigue risk

DAVID BOOTH
The Australian | 12:00AM August 19, 2016

2. THE GLOBAL PICTURE – SAFETY//

Accident and incidents generally

IATA: The 2015 global jet accident rate (measured in hull losses per 1 million flights) was 0.32, which was the equivalent of one major accident for every 3.1 million flights. This was not as good as the rate of 0.27 achieved in 2014 but a 30% improvement compared to the previous five-year rate (2010-2014) of 0.46 hull loss accidents per million jet flights.

NB statistics don't always capture potential latent causes of fatalities:

IATA: The loss of Germanwings 9525 (pilot suicide) and Metrojet 9268 (suspected terrorism) that resulted in the deaths of 374 passengers and crew are tragedies that occurred in 2015. They are not, however, included in the accident statistics as they are classified as deliberate acts of unlawful interference.

2. THE GLOBAL PICTURE – SAFETY//

International – generally in last few years we have seen these accidents in which fatigue has been implicated:

Asiana Airlines Flight 214

FlyDubai Flight FZ981 *

UPS Flight 1354 in Birmingham USA

Colgan Air Flight 3407 in Buffalo USA

Australian incidents implicating fatigue generally

EK407 Melbourne 2009 (?) – tail strike due to incorrect input of weight

Rex Sydney 2014 – failure to retract landing gear

2. THE GLOBAL PICTURE – SAFETY//

Safety of helicopter aeromedical transport in Australia: a retrospective study

Jim Holland and David G Cooksley

The first Australian helicopter emergency medical service (HEMS) began operations in Sydney in 1973. Since then, HEMS operations within Australia have grown considerably (see Box 1). HEMS programs now operate in all Australian states and territories except the Northern Territory.

Benefits in morbidity and mortality have been reported with physician-staffed HEMS stabilisation and primary transport of trauma patients;[1-3] however, the benefits for trauma patients[4,5] as well as medical patients[6-10] have been challenged. It is generally accepted in medicine that the risk of an intervention should not be greater than its demonstrated benefit. Unless the risk is

ABSTRACT

Objectives: To determine the accident rate for Australian helicopter emergency medical services (HEMS) per 100 000 flying hours and to determine the patient mortality risk per mission from a HEMS accident.

Method: Retrospective observational study of Australian HEMS flying hours and accidents from 1992–2002.

Results: The calculated accident rate for Australian HEMS is 4.38 per 100 000 flying hours. One patient died as a direct result of helicopter accident in 50 164 missions. Overall, one accident occurred every 16 721 missions.

Conclusions: The overall Australian HEMS accident rate is similar to that reported from other countries, with all accidents occurring in Queensland community HEMS. Helicopters flown at night under Visual Flight Rules (VFR) appear to represent a high-risk subgroup. HEMS flights do not appear to present significant mortality risk to patients being transported.

MJA 2005; 182: 17–19

2. THE GLOBAL PICTURE – SAFETY//

Those historic events raise concern partially due to the expected increase in Australian aeromedical flights

ATSB – AR-2015-082

Table 2: Hours flown (thousands), Australian-registered, 2005 to 2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
All commercial air transport (VH- registered)	1,699	1,720	1,816	1,858	1,798	1,947	2,011	2,141	2,090	N/A
High capacity RPT & charter	944	979	1,027	1,122	1,134	1,231	1,296	1,384	1,355	1,356
Low capacity RPT	202	181	167	133	111	117	139	156	147	127
Low capacity charter	485	481	547	521	471	509	487	504	488	N/A
Medical transport	69	79	75	82	81	90	88	97	100	N/A
All general aviation										

3. CAO 48.1 and recent amendments including new appendices //

CAO 48.1 represents several years of work on introducing fatigue science into domestic regulation. ICAO/IATA/IFALPA guidelines say:

The *Fatigue Management Guide for Airline Operators,* Edition 2015 builds upon the successful collaboration between IATA, ICAO and IFALPA to describe science-based and operationally oriented fatigue management processes. The input of these three organizations has ensured that this document continues to present approaches that are widely acceptable to the operators and crew members who will be using them.

We are extremely proud to mutually introduce this document, which will contribute to the improved management of fatigue risk and help us achieve our common goal of improving aviation safety worldwide.

Kevin Hiatt
Senior Vice President
Safety and Flight Operations
IATA

Nancy J. Graham
Director
Air Navigation Bureau
ICAO

Don Wykoff
President
International Federation of Air Line Pilots' Associations

3. CAO 48.1 and recent amendments including new appendices //

However, Appendix 4B fails to capture the concerns of pilots:

"We strongly believe that Appendix 4B will introduce unacceptable risks from pilot fatigue into what are essentially routine medical charters, rather than emergency air services.

Our biggest concern involves the long standby periods introduced by Appendix 4B, whereby pilots can be required to remain at work on the ground for long periods in the daytime, and then be tasked with arduous flying duties well into the night, for potentially 16 hour stretches of duty."

AFAP letter to Senators, 15 August 2016

4. Why Appendix 4B causes concerns

AFAP's views are:

- Appendix 4B should only be relied on by operators for life threatening situations,
- It must not be applied to passenger transfer flights
- Fatigue science MUST underpin such regulations, in light of Australia's international obligations under the Chicago Convention: Annex 6 amendments entered into force in 2011
- Our recommendation to operators is to also oppose App 4B as it stands, or submit an FRMS if the Appendix is unsuitable or insufficiently flexible for operations

4. Why Appendix 4B causes concerns

Q: Why oppose the regulation when CAR 224 gives pilots ultimate authority for the disposition of a flight anyway?

3.5 Despite subclause 3.4, if:

(a) unforeseen operational circumstances arise after take-off on the final sector of an FDP; and

(b) the unforeseen operational circumstances would cause an FCM to exceed:

(i) any limit or number permitted under this clause; or

(ii) the cumulative flight time limits in clause 7;

then, the flight may continue to the planned destination or alternate at the discretion of the pilot in command.

Note 1 Under regulation 224 of CAR 1988, the pilot in command of an aircraft is responsible for the conduct and safety of members of the crew on the aircraft and, therefore, has a discretion to not permit an extension to occur even if otherwise permissible under this clause.

Note 2 Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1.

4. Why Appendix 4B causes concerns

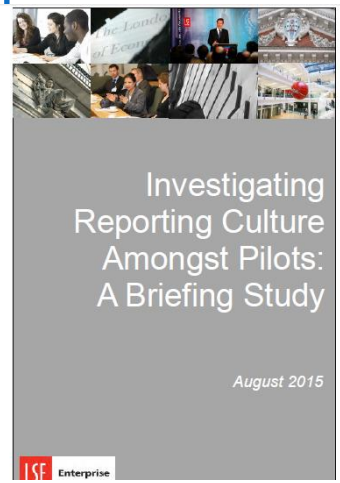
A: Converging pressure on pilots makes exercising the discretion difficult in reality, in the same vein that fatigue is often underreported:

Fatigue and its consequences were mentioned frequently as a looming major safety problem. For example:

> 'I think [fatigue] is vastly underreported and that is probably going to be the biggest safety problem in the future.'

> 'A lot of people, the press and public probably are obsessed with the idea of terrorism, but there is a far greater threat actually of a huge flight safety event arising purely out of burn-out and fatigue I think.'

London School of Economics Study for UK CAA and BALPA, August 2015



5. TO DEAL WITH THIS SITUATION…

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AFAP has pursued extensive consultation with CASA which has not resulted in explicating that Appendix 4B should only be applied in life threatening emergencies

Accordingly, we believe that this Appendix should be repealed and are lobbying for disallowance in the Senate

The 45th Parliament commences 30 August 2016 – we would value your individual and collective support to ensure pilots who transport your members and injured passengers aren't put at risk by such rules

“BLAIR’S LAW” REVISITED //

Blair’s laws of air medical retrieval

1. The ideal situation and patient transport are mutually exclusive.
2. Only those complications not anticipated by the air medical team will actually occur. Big problems are usually little ones that were unforeseen.
3. Any resemblance between the expected and actual situations is usually coincidental.
4. Air goes in and out, Blood goes round and round; any variation on this is a BAD THING. i.e. first make sure the basics are done well
5. The best patient monitor is the one between your ears - provided it is switched on. i.e. clinical observation and intelligent interpretation remain the cornerstones of patient monitoring.
6. The length of sticky tape employed on the patient should not exceed the distance between the referring & receiving hospitals (Anything up to this amount is OK). A small amount of time spent securing i.v. lines, drains and ET tubes will pay dividends. All of these are extremely difficult to replace in flight!
7. There is no such thing as the “room next door” in the sky. This applies to equipment and staff. You must be able to deal with any situation that may arise.

Trends in Anaesthesia and Critical Care 1 (2011) 22e26

QUESTIONS //

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