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Update ME

A brief update from the
Civil Aviation Authority
Central Medical Unit

20 October 2006

Reminder: Closure after an *unable* AMC

Occasionally a Medical Examiner will receive an "*unable-AMC*". This is an Accredited Medical Conclusion that is **unable** to indicate that "in special circumstances the applicant's failure to meet any medical standard prescribed in the rules is such that the exercise of the privileges to which a medical certificate relates is not likely to jeopardise aviation safety". Such an AMC inevitably leads to the applicant being declined the issue of a medical certificate.

The receipt of an unable-AMC does not, however, conclude the administrative procedures necessary to complete the application / examination / assessment process. Having received an unable-AMC the ME will still need to:

> Complete the assessment - determine the applicant is not eligible, and decline the issue of a medical certificate;
>
> Inform the applicant of the decline, provide them with copies of the Medical Assessment Report, the AMC, and advice concerning their review options (including reference to the convener review option).

Even if the ME is not faced with an unable-AMC it is necessary to complete, or close-off, all applications. For example if an applicant withdraws their application, before the assessment has been completed, it would be wise to acknowledge their withdrawal in a letter …. with an information-copy sent to the CAA Central Medical Unit.

Information about review (of medical certification decisions) options can be found in the medical section of the CAA website under the heading "Review of Medical Certification Decisions".

Quiz: Routine ECGs for class 1 applicant

A healthy 56 year old male class 1 medical certificate applicant presents for his routine medical. You've seen him for most of his CAA medicals during the last ten years and know him to be in good health and with no significant past or family medical history. As a non-smoker his cardiovascular risk is in the 5 – 10% 5-year risk category.

He mentions that his wife has just had a small heart attack and asks you to check his old ECGs to see if there's anything he should worry about. After reassuring him concerning his excellent health and absence of family CVS-disease history you agree to have a close look at his current and five most recent past ECGs (Download quiz ECGs 3.6Mb PDF file).

How do you interpret those ECGs, what are the implications of your interpretation, and how (as a CAA Medical Examiner) do you manage his aeromedical disposition?

In the courts: *Failure to disclose* prosecution

A recent CAA prosecution, under s46B(a)(a) of the Civil Aviation Act 1990 (two counts of making "an intentionally false statement for the purposes of obtaining a medical certificate under Part 2A of the Civil Aviation Act 1990") concluded with the pilot entering a guilty plea and being sentenced to a fine of $2000 along with court and solicitor costs

The case related to the pilot's failure to disclose two convulsions suffered during the preceding year.

From the literature: Blue light and the blues

A presentation at the recent ASAM (Australasian Society of Aerospace Medicine) annual scientific meeting, in Launceston Tasmania[1], raised some interesting possibilities in respect to blue light. The presentation was given by Dr Dan Black, and eminent Australian aviation ophthalmologist.

The main line of reasoning pursued the relationship between blue light and depression, with some collateral discussion concerning the colour-vision effects of 'natural' intra-ocular lenses. The reasoning went something like this:

- Our eyes contain non-image-forming photoreceptors in the retinal ganglion cells and these receptors are especially sensitive to short wavelength light;
- Blue light exposure influences (amongst other things) the production of melatonin, alertness, the growth of tumour cells, sleep architecture, and mood;
- The amount of blue light reaching these non-image-forming photoreceptors will be reduced by:

  Yellow-orange spectacle lenses ("blue-blockers" or high-contrast lenses);

  The yellowing of the lens with normal ageing;

  Many intra-ocular lenses, which are tinted yellow in an attempt to reduce the likelihood of macular degeneration;

[1] Black, D. *Cataract surgery implicated in depressive illness.* The 2006 Annual Scientific Meeting of the Australasian Society of Aerospace Medicine (A Flight of ideas: Mental Health in Aviation). Launceston Country Club, Tasmania, Australia, 21 September 2006.

- Blue-blockade reduces the amount of melatonin produced and, therefore, has the capability to moderate circadian adaptations as well as mood;
- After cataract surgery patients may become anomalous trichromats because of the yellow tint of the IOLs that have been inserted … although this tint may also closely resemble the colour-cast of their aged lenses anyway (less cyanopsia with yellow-tinted, or 'natural' IOLs);
- Cataract surgery, and the insertion of a blue-blocker IOL, may also predispose to depressive illness.

Dr Black emphasised that although much of the logic and reasoning is supported by good solid research some remains somewhat conjectural … including his postulating a link between SAD (seasonal affective disorder) and blue light exposure. All the same, the available information does make for some interesting considerations.

References and abstracts available (5Mb PDF file) and can be emailed to anyone who wishes.

For arguments sake: Definitional Retreat

A definitional retreat occurs when someone changes the meaning of their words in order to deal with an objection raised against the original wording. The definitional retreat allows someone beaten in an argument to save some face by claiming that they were really putting forward a totally different view. Some examples:

> "He's not even a pilot!"
> "I saw him landing a Jabiru last weekend."
> "You can't call a Jabiru and aircraft."

> Possibly from *The Wizard of Id*: "When I said we were ruled by petty tyrants, I was naturally referring to the tax collectors and administrators, rather than to your majesty."

> "You have no experience dealing with security matters."
> "Well, I did act as security adviser to the governments of Australia, Malaysia, and Singapore and I spent four years on secondment to the US Homeland Security department."
> "I meant that you have no experience of security in *New Zealand*."

The fallacy in a definitional retreat lies in its surreptitious substitution of one concept for another, under the guise of explaining what the words really mean[2]. The support advanced for the one position might not apply to its substitute.

[2] Pirie, M. Book of the Fallacy: A Training Manual for Intellectual Subversives. Routledge & Kegan Paul Books Ltd (1985).

From the literature: Sleep apnoea and transport

The September 2006 issue of the Journal of Occupational and Environmental Medicine contains a supplement devoted to sleep apneoa and commercial motor vehicle operation[3]. The associated editorial mentions that recently the US Federal Motor Carrier Safety Administration changed the medical examination reporting form to include a question that asks a driver whether they have "a sleep disorder, pauses in breathing while asleep, daytime sleepiness, or loud snoring".

The article also refers to other modes of transport and mentions that the FAA "does not permit an aviation medical examiner (AME) to make an initial determination on a pilot of any class with OSA [obstructive sleep apnoea]".

This supplement and its associated editorial articles provide a lot of useful data and makes for a very informative read for anyone interested in this increasingly prevalent problem.

ICAO communicable diseases workshop

During September ICAO, in conjunction with the Singapore CAA and Aviation Academy, ran a workshop on *Cooperative Arrangements for Preventing the Spread of Communicable Diseases through Air Travel* (CAPSCA). This seminar was attended by a wide variety of personnel (including regional and international aviation regulatory medical and public health representatives as well ICAO, WHO, the US CDC, and airport representative organizations) and focused on practical aspects of airport infectious diseases preparedness and planning.

A demonstration of Singapore's preparedness provided a stark reminder for all of the seriousness with which Singapore views the threat of infectious diseases such as SARS and pandemic influenza. One presenter mentioned that during the SARS epidemic the Singapore government estimated a likely loss of approximately 6% of their GDP. Against that sort of financial consideration the purchase of a few dozen thermal scanners for airport use seemed a relatively small financial cost.

[3] Hartenbaum N et al. *Sleep apnea and commercial motor vehicle operators: Statement from the Joint Task Force (etc).* Journal of Occupational and Environmental Medicine, 48(9 Supplement): S4-S37. September 2006. (www.joem.org)