The Medical Examiner

No. 1/2003

A Newsletter from the
Civil Aviation Authority
Central Medical Unit

01 April 2003

DW1048961-0

In this issue:

CAA Medical Help

Tel: +64–4–560 9466 **Fax:** +64–4–560 9470
Email: med@caa.govt.nz **web site:** www.caa.govt.nz

Welcome to this issue!
Happy birthday to the new system.

Welcome to this issue of the *Medical Examine*, we hope that 2003 is a very happy and successful new year for you. The purpose of this newsletter is to share with you at the *"frontline"* some of the issues that face us all in regulatory civil aviation medicine in New Zealand.

This issue started in October 2002 and has passed through several iterations before finally going to print on 01 April 2003. Thank you to all of you who've noticed this absence and provided feedback concerning the value of this newsletter to you. Please also accept our apologies for taking so long in getting this issue onto your computers and your desks.

Thank you also for your patience, forbearance, and support during the last year. Overall we have been very pleased with the continuing transition into the new system. That new system is now one year old … Happy birthday new system.

This issue of the *Medical Examine*r also includes another article by Dr Wooten, with the title *Fatigue and desynchronosis in aircrews*. Please do let us know of any aviation medical discussion topics that would be particularly useful to you.

The People in the System

There has been no change in the Medical Examiner roles, responsibilities, and requirements since the last issue of *The Medical Examiner*.

Medical Examiners

How many doctors?

Immediately prior to 01 April 2002 the 'system' comprised 26 AMAs who were not CAA staff members, and 91 DMEs operating in New Zealand. There was also 1 AMA and 25 DMEs operating outside New Zealand.

A year later, on 01 April 2003, there are 28 ME1s and 70 ME2s operating in New Zealand and 2 ME1s and 24 ME2s operating internationally. We also have a number of doctors *'in the pipeline'* to becoming MEs both within New Zealand and overseas

Regulatory Training

Several two day courses of regulatory medical training have been held, over recent months, for MEs. They have been well attended, and the feedback has been very positive.

It was also great to see several young doctors, new to regulatory aviation medicine, in attendance at the various courses.

Our last course was held in Christchurch on 08 – 09 March 2003 and our future schedule is detailed below. Also listed are our scheduled joint clinical meetings with CASA and the aviation industry. Interested MEs are welcome to attend these but prior arrangements will need to be made.

CAA Regulatory Medical Training:

Wellington, 05 - 06 April 2003;

Rotorua, 26 - 27 July 2003;

Dunedin, 23 - 24 August 2003.

Joint clinical workshops with CASA:

Cardiology, 11 April 2003, Wellington;

Ophthalmology, August 2003, Canberra;

Possibly Gastro-enterology, 07 November 2003, Wellington

We would also be happy to try and provide shorter regulatory training refresher seminars if groups of MEs wish to get together to update their understanding of the regulatory system. If you'd like to arrange such a seminar please let us know.

Aviation Medicine Training

Formal aviation medical training is an important component in attaining the competencies required for full ME designation and delegation.

As mentioned previously there are a number of courses available within New Zealand that may cater to the varied training needs of different MEs.

Auckland University

The University of Auckland has developed a block course in Aviation Medicine which can be considered a stand-alone qualification or the basis of continuing education depending on individual candidate preferences. It will be recognised as an acceptable component towards higher Occupational Medicine training, including the Fellowship.

The course is held on-campus for a two week period followed by a one-week period several months later. The course is aimed at providing ME applicants with the competencies necessary for both ME1 and ME2 status.

This is a new course and its first session has recently run during the two week period 24

February – 07 March. A one week residential period is planned for 09 – 13 June 2003. A similarly timed second course is planned for 2004.

For further information on this course you should contact Hugh Pearce:

Email: hughpearce@paradise.net.nz

Tel: +64 (21) 664-133

Otago University

The Otago University post-graduate Diploma in Aviation Medicine continues to be available for part-time distance education studies in aviation medicine. The course developer anticipates the course would provide ME applicants with the competencies necessary for ME1 status. This is an established course that is already available.

Otago University is also offering two of the DipAvMed papers, Aviation Physiology and Clinical Aviation Medicine for the new Postgraduate Certificate in Civil Aviation Medicine. This shorter course is intended to provide ME applicants with the competencies necessary for ME2 status. This new course starts in July 2002 and is currently accepting enrolments from MEs up to the end of June for this year and in December for the 2003 course.

For further information on these courses you should contact Dr Robin Griffiths, Senior Lecturer in Occupational & Aviation Medicine, Wellington School of Medicine:

Email: rfgriffiths@wnmeds.ac.nz

Tel: +64–4–385 5999 ext 6749

Fax: +64-4-389 5427

Mob: +64–21–620 148

Other seminars and training

A very successful series of seminars, discussing risk and the management of risk in an aviation medical context, was held in Auckland and Wellington. Dr Dave Salisbury from Canada's Defence and Civil Institute of Environmental Medicine presented at these seminars and the discussion and questioning that followed proved lively and questing.

A similar evening seminar, with Dr Don Hudson as guest speaker, has also held. Dr Hudson presented data and insight concerning depression amongst US airline pilots. Dr Hudson's unique perspective, running the US ALPA's medical support services, provided an interesting insight into the potential implications of this medical condition.

MEs are advised of these seminars in advance and are always welcome to attend.

The Paper in the System

The Act

We continue working under the Civil Aviation Act 1990 (the Act). The Act was amended by the Civil Aviation (Medical Certification) Amendment Act 2001.

A copy of the Act can be found on the CAA website (www.caa.govt.nz).

The Rules (Part 67)

The Act is supported by the Civil Aviation Rules, primarily Part 67 for our purposes. The Ministry of Transport has also issued the *Aviation Medical Transitional Criteria Notice 2002* which provides further supplementary information and requirements concerning the new medical system.

The medical standards are prescribed in Part 67. If someone meets the medical standards they can be issued a Medical Certificate.

The Ministry of Transport has recently concluded their pre-consultation on a new Part 67 with the intent to proceed through the formal NPRM (Notice of Proposed Rule Making) consultation process during this year.

A copy of the current Rule Part 67 and the Transitional Criteria can be found on the CAA website (www.caa.govt.nz).

The General Directions

The Act enables the Director to issue General Directions (GDs) in a number of circumstances.

Our intent is that the GDs will, in conjunction with the Medical Standards in Part 67, provide the road-maps that will allow MEs to directly certificate the vast majority of applicants. Of course those applicants who do not meet the Medical Standards could still be considered under flexibility by obtaining Accredited Medical Conclusion.

General Directions (GDs) are a very important component of the new medical certification system. Because there are presently no GDs issued, many of you are carrying a higher-than-hoped-for administrative load. Our intent is that many of the medical conditions that are presently handled via Accredited Medical Conclusion will be covered by GDs.

The first GD was recently published for consultation. It is titled ‘Temporary Medical Conditions’ and can be downloaded from the medical section of the CAA website. MEs will be advised whenever a new GD is sent for consultation as well as when they come into force.

Forms

By now most of you will have had dealings with the new forms. They are all available online on the CAA web site (www.caa.govt.nz).

A routine review of those forms is underway and we thank you for your various comments and suggestions. Of course we’ll advise you, via the CAA Medical Examiner mailing list, when new versions of any forms are posted.

A revised form 24067-001, Application for Medical Certificate, has recently been placed on the CAA website and should be being used by everyone.

Old forms

As advised in the June 2002 issue of this newsletter we can no longer accept old ‘201’ forms for consideration of the issue of a new system Medical Certificate and suggest all MEs destroy, or return to the CAA, any old stock 201 forms you hold.

All of the forms that are required can be downloaded from the CAA web site (www.caa.govt.nz).

Communications

The Email Mailing List

By now most of you will have received email from the CAA Medical Examiner mailing list, formerly called 'Aimie'. This mailing list has been established for our medical certification functions and allows us to expeditiously advise you of issues and changes within the system.

The *Medical Examiner* Newsletter

This newsletter is intended as our primary regular communication with the Medical Examiners who work within our regulatory aviation medical system. We hope that we can keep to a quasi-quarterly schedule with this newsletter and use the Aimie list for more sporadic communications.

Comments, questions, and suggestions concerning this newsletter would be welcome.

The CAA web site

The medical section of the CAA web site has been significantly improved. Our intent is to make all the information you need to function as an ME available on the web site. Back-issues of this newsletter will also be made available on the web site.

Again suggestions and comments are welcome.

Meetings & Consultation

Sporadic and regular meetings with individual MEs and representative groups are another important aspect of our communications with you.

A number of MEs have visited us while in Wellington and we welcome such visits and the opportunity to discuss the system, the processes, and any problems experienced. We have also had the opportunity to visit with a number of MEs during liaison trips throughout the country.

The Processes in the System

The current medical certification process certainly differs from that in force prior to 01 April 2002. Please don't hesitate in phoning the Central Medical Unit anytime you are uncertain of how to proceed with an examination or assessment. Many MEs are finding that a short telephone call is saving them a lot of unnecessary hassles and, in turn, making the certification process easier for the licence holder or student.

Applying for a Medical Certificate

An applicant is required to apply for a Medical Certificate. The necessary form can be downloaded, by the ME or the applicant, from the CAA web site.

Accredited Medical Conclusion (AMC)

Recent reviews, both internal and external, have drawn our attention to some difficulties with how the Accredited Medical Conclusion (AMC) part of our medical regulatory process is being run. Our attention has been drawn to the possibility that applicants may not be adequately aware of the processes, their options, and their entitlements. It has also become apparent that some of our Medical Examiners may find themselves similarly in the dark.

Given the nature of the problems and their legal implications it is necessary for us to work immediately and rapidly towards a fix.

We will first describe the relevant parts of our medical certification system, and then we will outline the nature of the problems that have become apparent, describe our intended remedy, and provide you with the tools necessary to implement the first step of the remedy.

The system

To be considered for the issue of a CAA medical certificate someone (applicant) must first apply to the Director and be examined by a Medical Examiner. These two processes are documented on CAA forms 24067-001, Application for Medical Certificate, and 24067-002, Medical Examination Report. The Medical Examiner is able to seek further tests, investigations, reports, or results if necessary.

The next step in the process is for the Director of Civil Aviation (the Director), or someone who holds an appropriate delegation of section 27B(1) of the Civil Aviation 1990 (the Act) from the Director, to consider whether the applicant meets the medical standards prescribed in the Civil Aviation Rules and has no characteristic that may interfere with the safe exercise of the privileges to which the medical certificate relates. This is done, under section 27B(1) of the Act, through consideration of the Application for Medical Certificate (form 24067-001), the Medical Examination Report (24067-002), any other information provided by the Medical Examiner, and any other information that the Director (or delegate) feels is necessary. Section 27B(1) of the Act requires that this process be completed as soon as practicable, but no later than 30 working days after receipt of the report by the Medical Examiner.

Once this 27B(1) consideration has commenced there are three likely outcomes:

1 A medical certificate is issued under section 27B(1) of the Act. This can only be done when the applicant meets the medical standards prescribed in the Civil Aviation Rules and the Director is satisfied that the applicant has no characteristic that may interfere with the safe exercise of the privileges to which the medical certificate relates. In these circumstances the Application for Medical Certificate is closed through the decision to issue a medical certificate. The Medical Assessment Report (CAA form 24067-003) is completed accordingly.

2 A medical certificate cannot be issued under section 27B(1) of the Act but the Director (or delegate) elects to pursue further consideration,

relying on flexibility, under section 27B(2) of the Act. In these circumstances the Application for Medical Certificate remains open and considerations shift to a different section of the Act, from section 27B(1) to section 27B(2). The Medical Assessment Report (CAA form 24067-003) is completed indicating that the assessment has been deferred and that Accredited Medical Conclusion has been sought.

3 A medical certificate cannot be issued under section 27B(1) of the Act and the Director (or delegate) does not elect to pursue further consideration under section 27B(2) of the Act. In these circumstances the Application for Medical Certificate is closed by the decision to decline the issue of a medical certificate. The Medical Assessment Report (CAA form 24067-003) is completed indicating that the applicant is ineligible for the issue of a medical certificate.

Accredited Medical Conclusion (AMC) is one requirement of the flexibility process that is provided under section 27B(2) of the Act and described in section 27B(3) of the Act. AMC requires that medical experts, acceptable to the Director, be identified for that purpose. Those 'AMC experts' consider the information provided, and may seek additional information, to establish whether 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.

Once an AMC has been completed the Director or someone who holds an appropriate delegation of section 27B(2) of the Act, can continue the assessment under section 27B(2) of the Act. There are two likely outcomes to these 27B(2) considerations:

1 A medical certificate is issued under section 27B(2) of the Act. Such a medical certificate is likely to be endorsed with conditions or restrictions. The Medical Assessment Report (CAA form 24067-003) is completed accordingly.

2 A medical certificate cannot be issued under section 27B(2) of the Act. In these circumstances the Application for Medical Certificate is closed by the decision to decline the issue of a medical certificate. The Medical Assessment Report (CAA form 24067-003) is completed accordingly.

Problems in practice

The practice to-date has been that a wide variety of types of submissions have been accepted as a start to 27B(2) considerations and the identification of experts for the purpose of AMC. Those submissions have included the Request for Special Consideration (CAA form 24067-300), handwritten notes, faxes, e-mails, and self designed assessment reports.

The recent reviews have drawn our attention to the fact that in many such cases:

- It is not clear that the naming of experts for the purposes of AMC is being sought;
- It is not clear that the Medical Examiner is aware that a shift from 27B(1) considerations to 27B(2) considerations is occurring and that the next step is for the Director to identify experts for AMC purposes;
- It is not clear that the applicant has been made aware of the process and understands the options available and their implications.

We are concerned that this lack of clarity potentially exposes the Director or delegate to legal risk.

Remedy

The basic remedy to this problem is that it needs to be clear that everyone involved in the certification process understands the relevant parts of the process, is aware of their circumstances and options and rights, and consents to their involvement. This will require improved training, improved communication, and improved documentation.

The first step in this process is that the Director will only identify experts for AMC purposes when it is clear that:

- The applicant and Medical Examiner understand that the applicant does not meet the medical standards, as required for certificate issue under section 27B(1) of the Act, and that the Medical Examiner has elected to consider the application under section 27B(2) of the Act.

To assist you in promptly implementing this change we have enclosed some sample wording you may wish to incorporate in your letters, faxes, and e-mails when you are seeking for experts to be identified for AMC purposes.

> I have found that this applicant does not meet the medical standards, as required for certificate issue under section 27B(1) of the Civil Aviation Act 1990 (the Act). I elect to continue my assessment of this applicant under section 27B(2) of the Act. I request that the Director indicate experts for the purpose of reaching Accredited Medical Conclusion in this case.
>
> (I am / am not available and willing to be an expert for this Accredited Medical Conclusion should the Director wish to identify me for that purpose.)
>
> I have explained this to the applicant.

Our follow-on actions will be to redesign form 24067-300, Request for Special Consideration, so that it better serves the purpose for which it was intended and provides the clarity that is needed, as well as to draft an information sheet to help MEs communicate the process details to their applicants. Changes have already been made to the form 24067-001, Application for Medical Certificate, to assist in this process. Changes are also being made to the regulatory medical training delivered to Medical Examiners. These are all being addressed as a matter of priority.

We thank you for your ongoing contribution to the system and ask that you help us promptly address this problem for the benefit of all involved in New Zealand aviation. Please do not hesitate in contacting any of us at the Central Medical Unit should you need any assistance with this matter.

Applying for Accredited Medical Conclusion

If you find an applicant does not meet the medical standards and there is no General Direction that adequately provides for their certification then you may be faced with the need to consider the exercise of flexibility under section 27B(2) of the Act. The application of flexibility requires an Accredited Medical Conclusion (AMC) which, in turn, requires the Director to identify medical experts for the case concerned. Form 24067-300 *Request for Special Consideration* can be used for this purpose and is found on the CAA web site.

The majority of AMCs involve the Director identifying the involved ME as the expert for the case concerned. This has lead to a substantial reduction in paperwork for MEs and the CMU. In more complex cases either the ME, in conjunction with CAA MO(s), or CAA MO(s) alone are identified as the experts for the case concerned.

Earlier in the year an Accredited Medical Conclusion could result in a Letter of Authority (LoA) or a Statement of Demonstrated Ability (SODA). These formats of reporting AMC are no longer utilised.

An AMC document, received from CMU, will indicate either:

> 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; or
>
> That there are no special circumstances where 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.

Upon receiving an AMC the ME is able to use it to consider certification under the flexibility provided by the Act.

Numbers and Statistics

Medical certificates

During the period 01 December 2002 – 28 February 2003 there were approximately:

1972 applications for medical certificates[1] including 347 applications for 'initial issue' medical certificates;

1641 applications were closed with medical certificate issue under section 27B(1) of the Act, without requiring flexibility;

321 applications were closed with medical certificate issue under the flexibility provisions of section 27B(2) of the Act which requires AMC;

10 medical certificate applications were declined.

Accredited Medical Conclusion

During the period 01 December 2002 – 28 February 2003:

319 AMCs were commenced and 331 were closed.

Approximately:

80% of AMCs utilised an ME as the only expert for the case [2];

5% of the AMCs utilised a combination of ME and CAA medical staff as experts for the case;

12% of AMCs utilised only CAA medical staff as experts for the case.

Of the 331 AMCs that were closed approximately:

77% were closed within 5 days;

7% were closed within 6 – 15 days;

5% were closed within 16 – 30 days;

5% were closed within 31 – 60 days;

4% were closed within 61 – 120 days;

2% took greater than 120 days for closure.

Of the 29 AMCs that were open on 28 February 2003 approximately:

28% had been open for 5 days or less;

21% had been open 6 – 15 days;

7% had been open 16 – 30 days;

24% had been open 31 – 60 days;

10% had been open 61 – 120 days;

10% had been open for greater than 120 days.

Convener Reviews

During the period 01 December 2002 – 31 March 2003 there were:

4 convener reviews were closed;

8 new convener reviews sought.

On 01 April 2003:

There were 15 convener reviews underway; of these:

3 related to decisions made under section 27B(1) of the Act to decline the issue of a medical certificate;

7 related to decisions made under section 27B(2) of the Act to decline the issue of a medical certificate;

1 related to decisions made under section 27B(2) of the Act to issue a medical certificate;

4 related to decisions to revoke or impose conditions restrictions, or endorsements upon a medical certificate.

Of the 4 convener reviews that had concluded:

2 endorsed the decision that had been made;

1 recommended an alternative action;

1 review application was rejected because the review application fell outside the statutory 20 day timeframe.

---

[1] An application for both a class 1 and class 2 medical certificate counts as two applications in this statistic.

[2] In the case of ME-only AMCs the AMC is recorded as being 'closed' on the day upon which a Medical Examiner is identified as the expert for the AMC. CAA does not record the date upon which the ME actually issues a medical certificate after an ME-only AMC.

Questions, Comments, & Notices

Frequently Asked Questions (FAQs)

This section responds to some of the questions we've received since the last issue of the *Medical Examiner*.

What does Accredited Medical Conclusion mean when mentioned in Rule Part 67?

Some sections of the medical standards within the current Rule Part 67 refer to a need for Accredited Medical Conclusion. The Act defines Accredited Medical Conclusion (AMC).

If the Part 67 medical standards require AMC you cannot issue a medical certificate without that AMC. Simply apply to the CMU for the identification of experts for the purpose of AMC … in the vast majority of these cases you can expect to be named as the expert.

Do I need to get another Accredited Medical Conclusion?

An AMC is only 'good' for the single issue of a medical certificate. When an applicant applies again for a medical certificate, and fails to meet the medical standards, then another AMC is required for flexibility to be applied. An AMC provided previously cannot be used for subsequent applications of flexibility.

This is different to advice that was provided to some MEs prior to 01 April 2002. Any prior advice, contrary to the above, should be disregarded.

The management of the AMC process is such that this should present minimal impediment to those applicants who do not meet the medical standards. The vast majority of such repeat AMCs see the involved ME identified as the expert for the case concerned.

Future developments, especially the publication of General Directions, are intended to further reduce the administrative requirements in association with these applicants.

Can I still use the pink 201 form?

No. The old, pink, General Medical Examination form (CAA24067/201) cannot be used for CAA medical certification.

What about the Interim Health Declaration I used to use?

The Interim Health Declaration is not a prescribed form and is no longer in use.

Certainly, if there has been a significant delay between your examining an applicant and making a certification decision (such as delays due to specialist consultations), you should satisfy yourself that the applicant's medical circumstances have not changed substantially during that period.

What about the *Notice of Unfitness* I used to use?

The Notice of Unfitness cannot be used for CAA medical certification processes. This old form is thoroughly inappropriate given the changes to the Act that came into effect on 01 April 2002 and its use would potentially expose an ME and the Director to unnecessary legal risk.

What does the 26 November 2002 exemption mean?

The exemption, granted by the Director, to Rule Part 67.19(b)(1) has the effect that general and specialist examination reports, that are not older than 90 days, may be used in preparing Medical Examination Reports. General and specialist examination reports, that are older than 90 days, may not be used in preparing Medical Examination Reports.

Prior to this exemption Rule Part 67.19(b)(1) reduced that period of validity to 42 days. The use of the Interim Health Declaration did not overcome that legal requirement and this

exemption provides some relief to that statutory time frame.

There can be very real problems, for some applicants, associated with rule 67.19(b)(1) and this has been relayed to the Ministry of Transport for consideration in their rewrite of Rule Part 67.

When does the validity period of a medical certificate start?

Any medical certificate that you issue must commence its validity on the day it is issued. You cannot pre- or post- date medical certificates.

If delays are anticipated, and you are satisfied that there is no jeopardy of flight safety, then you might consider using the extension provisions of the Act (more below).

What's happening with the new medical standards?

The medical standards are a part of Civil Aviation Rule Part 67. The Ministry of Transport (MoT) is in the process of writing a new Rule Part 67.

The MoT has concluded their pre-consultation on the new rule part 67 and is presently in the process of revising the document with the intent of releasing an NPRM (Notice of Proposed Rule Making) for consultation.

What's happening with the general directions?

Most anticipated GD functions depend, in part, on accommodation by the medical standards in Part 67. Many of these GDs are not practical propositions without Rule Part 67 being changed.

One GD, that concerning temporary medical conditions, can be effective without revision to Part 67 and has already been released for consultation and is available on the CAA website.

Another GD has also been drafted and is likely to be released for consultation during the next few weeks.

How can I handle any surveillance requirements I might want to impose on an applicant?

Subject to your delegations you are able to impose conditions, restrictions, and endorsements on medical certificates. As there are no specific surveillance provisions under the Act or Rule Part 67 you have two avenues to achieve 'surveillance'.

The first is to issue a medical certificate that expires when the surveillance you require is due. This approach is relatively fail-safe but imposes extra costs on the applicant because you would have to repeat the examination and assessment process for the issue of the next certificate.

The second option is to impose conditions on the medical certificate that you issue. You could, for example, issue a twelve month certificate with a condition requiring, say, a psychiatric review every three months. If the certificate holder fails to comply with the condition that you apply their medical certificate is invalidated. You should, of course, advise them of the process and the implications of failing to comply with the conditions.

Can I modify an entry on the 'Application for a Medical Certificate' form?

Form CAA24067-001 *Application for Medical Certificate* is to be completed and signed by the applicant. The ME should not make any entry on this form other than to witness the applicant's signature.

If you notice any irregularities with the completed form you should ask the applicant to remedy them. If faced with an irregular or incomplete application form you should give serious thought as to whether you are able to assess the applicant for the issue of a certificate at all. If you do need to comment about entries in the application form then make your comments on your form CAA24067-002 *Medical Examination Report*.

When I don't think an applicant meets the medical standards should I decline the issue of a medical certificate?

If an applicant doesn't meet the medical standards you should not issue a medical certificate under section 27B(1) of the Act. Your options are to either decline certification or consider relying on flexibility as provided by the Act. If you elect to exercise flexibility you will need an Accredited Medical Conclusion.

If you have any doubts you should probably explore the flexibility option via AMC. If you are confronted with a case upon which you are uncertain please phone the Central Medical Unit to discuss specifics.

When should I request an Accredited Medical Conclusion?

There will be circumstances where the applicant does not meet the standards prescribed in the rules (Part 67) or, notwithstanding the applicant meeting the standards, the Director has reasonable grounds to believe they have any characteristic that may interfere with the safe exercise of the privileges to which the certificate relates. In both of these cases a medical certificate cannot be issued under section 27B(1) of Act.

Section 27B(2) stipulates that despite this, the Director (or delegate) may, relying on flexibility, issue a medical certificate. The key point here is that 3 conditions have to be met to rely on flexibility. This is sometimes overlooked by medical examiners that hold a delegation to issue certificates. Please consult section 27B of the Civil Aviation Act for details. This is available on the CAA website.

One of the conditions is the requirement for an Accredited Medical Conclusion. This process can only be conducted by "medical experts" acceptable to the Director.

In summary, if flexibility is to be relied upon, please seek an Accredited Medical Conclusion. In many instances you will be acceptable to the Director as the "medical expert".

When can I extend a medical certificate?

The Director (delegate) may, on receiving an application, grant an extension of no more than 60 days from the expiry date of the medical certificate. This is to allow for further information, test reports etc to be obtained. The key point here is that the existing certificate must sill be current. You must naturally be satisfied that, in doing so, there will be no risk to flight safety. Extending a certificate may, for instance, be acceptable while waiting for a stress ECG to further assess the cardio vascular risk. This would not be acceptable if required for a history of chest pain for instance or clinical evidence of vascular disease.

How do I extend a medical certificate?

The more appropriate way is to reprint the existing certificate, inclusive of date when signed and endorse the document with the wording: "Certificate extended until <date>". Add any additional appropriate conditions, restrictions or endorsements that you consider necessary.

I need further information about possible drug or alcohol related charges. How do I obtain this?

The CAA is no longer able to obtain this information for you. The quickest way to obtain such information is to request the applicant to provide it for you.

If you need this sort of information please contact Pooshan (navathep@caa.govt.nz) at the CMU to discuss the best approach.

For how long can I suspend a certificate?

A notice of suspension will expire after 10 working days. A further notice of suspension can be issued for a further 10 working days prior to the expiry of the initial 10 working days period.

If such a suspension is issued the Director may take 1 or more following actions, those are

available under section 27I(7). A key point here is the 10 working days + 10 working days limitation. Only CAA medical staff hold the delegation to take further action. It is therefore quite critical to communicate your decision to suspend promptly to the Central Medical Unit together with any medical information available. This will help the Director in making a timely decision as to what further action is necessary, if any.

What happened to the LOAs that were being done?

Soon after 01 April 2002 Accredited Medical Conclusions (AMCs) were reported in the form of either *Letter of Authority* (LoA) or a *Statement of Demonstrated Ability* (SODA). These formats of reporting AMC are no longer utilised.

What do I tell an applicant who wants to appeal a decision?

The CAA website (Medical / Review of Medical Certification Decisions / Options if denied a medical certificate / What are my Review Options?) contains information concerning the review of medical decisions.

You may wish to print this document and hand it to all, or some, of the applicants you deal with.

Helping us to help you

This section of the newsletter details issues that have caused our staff some extra and unnecessary workload. We ask your consideration of these in helping us to run the system as smoothly as possible and, therefore, to be better able to help you.

Forms

All of the forms you need can be obtained from the CAA website. Occasionally we will be asked for a hard-copy of a particular form. We do not, however, provide multiple copies of our forms … you should use the online document or a hardcopy master to copy your own forms.

When a form is updated you will be notified via the Medical Examiner mailing list.

Request for reports or ECGs etc

Another request from our advisers. If you need a copy of something from an applicants file, such as a past psychiatry report or ECG, please make your request as simple as possible. Some requests we receive explain, in depth, the clinical reason for wanting such a document. This can lead to our advisers missing the point of your request in thinking that the complex medical discussion is a matter for one of the doctors … with resultant delays in responding to your request.

If you're examining or assessing an applicant you are perfectly entitled to information from their files and do not need to justify your request. A simply worded request will save you time, save us time, and make a prompt response much more likely.

Notices and other information

No notices.

Article: Fatigue and Desynchronosis in Aircrews

By Virgil D. Wooten, MD

Since World War II, flight operations have been increasingly performed over longer distances, longer intervals, and across multiple time zones. The biology governing the performance of men and women has not changed, however. The timing, quality and quantity of sleep needed may vary among individuals, but among all people, unalterable physiological needs exist. Efforts are being made within aerospace to design and employ behavioural and pharmacological interventions to overcome the effects of fatigue and sleepiness in personnel required to operate in a sleep deprived condition and at times when they would normally be sleeping.

Accidents are caused by human error 80% of the time. The role of fatigue and circadian rhythm disorders (desynchronosis) in these mishaps is probably underestimated. Recognition of the causes and signs of fatigue is central to safe and effective air operations.

The tendency to sleep cycles over a 24-hour period. Maximal sleepiness occurs between 0600 and 0800. Although not as imposing, another episode of sleepiness occurs between 1400 and 1600. Adaptation to a new time zone or shiftwork pattern takes up to 3 weeks, depending on individual differences, the frequency and magnitude of the time shifts. Various environmental (light, activity) and social factors (sleep habits, social interactions, work schedule) may either assist or prevent the accommodation to a new schedule.

Sleepiness and fatigue cause reduced ability to function. Lapses (the failure to respond to a situation) increase. Lapses may be associated with microsleeps (episodes of sleep lasting 0.5 to 10 seconds), but can also occur without sleep onset. The four sleep-related factors involved in fatigue-induced performance impairments are the circadian phase of the biological clock, the presence of acute sleep loss, the presence of cumulative sleep loss and the presence of sleep inertia. Lapses increase 2 to 10 times during night operations without pre-existing sleep loss. Acute sleep loss (following a single night of sleep loss) results in 4 to 10 times more lapses, while chronic sleep deprivation by reducing sleep 2-3 hours per night for 1 week may increase lapses by 3 to 5 times normal. Sleep inertia is the difficulty awakening from a sleep episode. Sleep inertia results in increased lapses and is most likely to be present after abrupt awakenings and awakening from stages 3 and 4 NREM sleep. The potential for catastrophe due to lapses is enormous. An aircraft going 250 kts on a glidepath, for example, can travel over 400 feet during a 1-second lapse. Microsleeps have been shown to occur in aircrew during landing approaches in commercial carriers.

The degree of resulting fatigue and risk of mishaps are dependent on the type of aircraft, mission, operations schedule, and environmental conditions. Increased workload and turbulence tend to exacerbate the effects of sleep loss and jet lag. Reaction times may be markedly slowed, which can be critical when rapid reactions are necessary. False responding also increases, i.e. the pilot may take action when no action is warranted, especially when aware of having missed signals. The resulting anticipation of another event and over attention on individual signals or problems further reduces situational awareness. Fatigue increases calculation errors, logical errors and ineffective problem solving. The member is less able to think of new solutions and repeatedly tries the same approach to a situational problem.

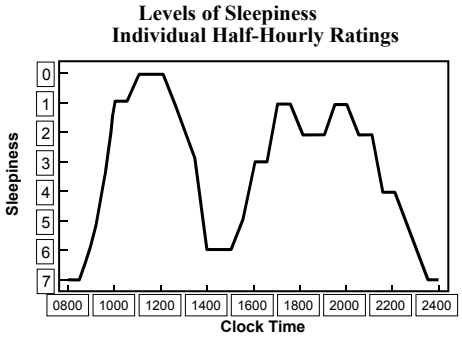
Memory deficits progressively worsen with fatigue and sleep loss. The sleepy and tired crewmember reads or hears instructions repeatedly but cannot retain the information, leading to critical errors and uncertainty about the status of the situation. Performance variability

results from increased lapses and errors of omission. Although the member often becomes aware of the shortcomings in performance and responds by trying to increase self-motivation and effort, performance improvement is short-lived. He/she may perceive the operation as more stressful and tiring as the effort continues. Ultimately, the crewmember's motivation to perform well and avoid risks erodes.

No individual is immune to the effects of sleep loss and fatigue, although there are individual differences in the ability to tolerate sleep loss. After one night of sleep loss, half of healthy individuals perform reasonably well, but the remainder exhibit moderate to severe performance deficits. After 36 hours, there is little difference between individuals in their ability to perform---all have severe performance deficits.

The ability of a fatigued crewmember to self assess alertness is also limited. In fatigued individuals, initial good performance early on may give a false sense of security. As time goes by, performance deteriorates. A crewmember is also more likely to overestimate his or her ability to perform if asked whether he or she is tired or able to perform. Relief from other crewmembers when signs of fatigue are observed (eyelids drooping, yawning, irritability, forgetfulness) is crucial.

Poor sleep habits may contribute to fatigue. Therefore, sleep hygiene techniques are useful countermeasures for desynchronosis.



Sleep Hygiene

- Use the bed for sleep only --- avoid watching TV, music, business, arguing in bed.
- Avoid looking at the time. Set an alarm and ignore the time.
- Avoid alcohol, caffeine, and heavy meals before bed.
- Schedule a worry time, planning session, and wind-down time before getting into bed. Make lists of things to do the next day.
- Make the bedroom quiet, comfortable, dark and secure. Use white noise generators if the environment is noisy. Minimize disruptions.
- Get out of bed after lying awake for more than 20 minutes---do something boring or relaxation techniques.
- Avoid exercise and hot baths within 3 hours of bedtime.
- Exercise regularly, in the morning or afternoon.
- Keep a regular bedtime and get up time.
- Do not spend excessive amounts of time in bed, e.g., if you can sleep only 7 hours, spend no more than 7.5 hours in bed.
- Avoid excessive napping, which can interfere with the ability to sleep at night.

Every flight operation has its own tempo, time required to perform the major tasks, personnel structure, and number of personnel. There are a number of different aerospace scenarios, ranging from mundane short and long haul ferrying

operations, to combat and space flight. Prevailing cultural attitudes may pose a hindrance to adequate resting and napping. Our society now sleeps about an hour less on average than our ancestors a century ago. Sleep and the demand for productivity are at odds, and adult napping is virtually frowned upon.

Extensive research into fatigue by the DOT and DOD has yielded important information about techniques to improve performance and safety during prolonged and/or night-time flying. Basic principles to keep in mind are listed below. Naps are defined as intentional sleep lasting less than half the length of the major sleep period.

- Do not overwork or under-sleep before flying
- Naps taken before and at the beginning of flights at night improve performance during and at the end.
- Two nights of normal sleep before greatly improve performance during the operation.
- Two nights of normal sleep at the end of an operation are necessary to recover from the effects of sleep deprivation.
- A night off in a long series of night operations helps restore function.
- Naps are possible during the day, especially in the mid-afternoon sleepiness phase.
- Naps are a stopgap approach to improve performance and safety for limited periods of time, not an indefinite substitute for long sleep periods during biological night.
- Attempts should be made to anchor sleep when sleeping in a different time zone by getting some of the sleep during home base sleeping hours.
- The longer the nap, the better the improvement in performance.
- The longer the nap, the longer it takes to awaken (more sleep inertia).
- Longer and harder operations require more napping.
- At least 20 minutes should be allowed to awaken from a nap to allow dissipation of sleep inertia.
- Noise and activity help dissipate sleep inertia.
- When possible, engage in conversation, stretch and move about to improve alertness.
- Caffeine can help maintain alertness, but may disrupt sleep if used too close to desired sleep times.
- Alcohol use may interfere with sleep quality and performance.
- Napping will not promote circadian adjustment to night flying.
- Relaxation techniques and sleep hygiene can assist napping and adjustment to a new circadian schedule.
- The napping environment should be as free from noise, light, temperature extremes, and interruptions as possible.
- Lying down and sleeping is more beneficial than trying to sleep chest elevated
- Maintain a meal schedule with healthy and nutritional food to minimize gastrointestinal problems associated with night operations.

Stimulants and sedatives are currently used in U.S. military and foreign commercial operations. There may be a role for stimulants such as modafanil, pemoline, methylphenidate and amphetamines in defined settings. The same is true for short and intermediate acting sedatives. Even short-acting sedatives can impair next-day performance, however, and reasonable concerns exist about the effect of stimulants on sleep, emotions and performance. However, for the time being, U.S. private pilots and flight crews are prohibited from using medications discussed above.

References

1. Caldwell JA. The impact of fatigue in air medical and other types of operations: a review of fatigue facts and potential countermeasures. Air Med J 2001 Jan-Feb;20(1):25-32

2. Samel A, Wegmann H-M, Vejvoda M, et al. Two-crew operations: Stress and fatigue during long-haul night flights. Aviat. Space Environ. Med. 1997; 68:679-687.
3. Crew factors in flight operations: The initial NASA-Ames field studies on fatigue. Aviation Space Environ. Med. 1998; 69(9, Suppl.):B1-B60.
4. Ferrer CF, Bisson RU, French J. Circadian rhythm desynchronosis in military deployments: a review of current strategies. Aviat. Space Environ. Med. 1995; 66:571-578.
5. Emonson DL, Vanderbeek RD. The use of amphetamines in U.S. Air Force tactical operations during Desert Shield and Storm. Aviat. Space Environ. Med. 1995; 66:260-263.

Dr. Wooten is a special medical consultant in sleep disorders to the Federal Air Surgeon, is an FAA aviation medical examiner, and is the Medical Director of TriHealth Sleep and Alertness Center, Good Samaritan and Bethesda Hospitals, Cincinnati, Ohio. Dr Wooten's contact details are: telephone +1 (513) 872-4000; facsimile +1 (513) 872-7878; e-mail virgil_wooten@trihealth.com.

Who is doing what?

The CAA Central Medical Unit comprises:

Principal Medical Officer Dr Dougal Watson;

Senior Medical Officers Drs Pooshan Navathe and Claude Preitner;

Executive Officer Judi Te Huia;

Registrars Drs Christine van Dalen and Michael Drane, both working part time;

Advisers Amy Butters, Vanessa Calnon, Dianne Lassche, Dianne Parker, Julia Reed, Hedy Mulholland & half of Suzanne Shirtliff.

Pooshan Navathe has the primary responsibility for applicant certification matters and Accredited Medical Conclusion. Accordingly Pooshan will also be responsible for the processing of queries directed to us by and about applicants.

Claude Preitner has responsibility for the non-CAA medical officers. Claude will be managing the review and audit processes as well as any educational activities we undertake.

Judi Te Huia is responsible for our administrative support and the support provided to us, and you, by the CAA Medical Adviser staff.

Staff movements

Dr Michael Drane has recently joined us, part time, as a registrar. Welcome Michael.

Dr Watson attended the annual *Civil Aviation Medicine Association* (CAMA) meeting in Amsterdam, Holland. It was an instructive meeting with a diversity of topics of relevance to New Zealand civil aviation medical regulation discussed. Of particular interest was the CEO of KLM discussing the 'business' of running an airline in the world of today.

The CAA, in the persons of Drs Navathe and Preitner hosted a joint workshop with CASA and various industry representative groups to discuss regulatory neurology issues. Another successful and illuminating workshop.

Contacting us.

The CAA Medical Help Line number is +64 (4) 560-9466. This number should be used as the primary contact for virtually every civil aviation medical regulatory matter.

The CAA web site (www.caa.govt.nz) has a "Medical" button on the main page. This will make it much easier for you to find information and other resources to help you with your ME activities … as well as this issue, and back issues, of the *Medical Examiner*.

CAA Medical Help

Tel: +64–4–560 9466 **Fax:** +64–4–560 9470
Email: med@caa.govt.nz **web site:** www.caa.govt.nz