

# The Medical Examiner

No. 2/2002

A Newsletter from the  
Civil Aviation Authority  
Central Medical Unit

01 June 2002

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### Welcome to this issue!

Welcome to this issue of the *Medical Examiner*. 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, dated 01 June 2002, will devote most of its space to the new medical regulatory system.

We have been very pleased with the smooth transition to the new system. Thank you all for your patience, forbearance, and support.

There is now a “Medical” button on the CAA web site ([www.caa.govt.nz](http://www.caa.govt.nz)). This button will lead you to electronic copies of the forms you will need as well as the various communications, including this newsletter, and those parts of the Medical Manual that are available in electronic form. Please do make sure you have read the short Medical Manual Volume 1 as it explains a lot of the process details for the new system.

This issue of the *Medical Examiner* also includes an article on the topic of *Sleep Disorders in Pilots*. It is our hope to increase, over time, the amount of aviation medical information that is provided in this newsletter. Please let us know of any aviation medical discussion topics that would be particularly useful to you.

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### The People in the New System

In the last two issues of this newsletter we provided information about the new system and the three year transition process. In this issue we'll review the roles and responsibilities of the various Medical Examiners and then take a look at where things are headed.

#### Medical Examiners

The non-CAA medical practitioners involved in our regulatory medical processes are now all *Medical Examiners* (MEs). There are two groups of MEs: ME1s (Medical Examiner Grade 1) and ME2s.

The qualifications and selection criteria for MEs can be found in the Aviation Medical Transitional Criteria Notice 2002 (Transitional Criteria) on the CAA web site.

#### ME1s

The ME1s have all received a designation (Medical Examiner Certificate) and a detailed delegation of legal responsibilities and powers

from the Director of Civil Aviation. These documents allow them to examine and assess the holder of any class of Medical Certificate. ME1s are also, during parts of the three year transition, able to assess applicants based on the examinations performed by ME2s.

The ME1 designations and delegations are for a duration of three years.

At the moment there are 31 ME1s working within the new system, 29 in New Zealand and one each in Australia and Fiji.

#### ‘Full’ ME2s

‘Full’ ME2s will satisfy the selection criteria and qualifications required of an ME2 in the Transitional Criteria and will be able to examine, assess, and certificate Class 2 Medical Certificate holders. During parts of the three year transition period ‘full’ ME2s will also be able to examine Class 1 and 3 medical certificate holders and will need to forward documentation to an ME1 for assessment.

At the moment there are no 'full' ME2s working in the new system.

### **'Transitional' ME2s**

The 'Transitional' ME2s have all received a designation (Medical Examiner Certificate) and a delegation of legal responsibilities and powers from the Director of Civil Aviation. These documents allow them to examine the holder of any class of Medical Certificate. 'Transitional' ME2s need to forward examination documentation to an ME1, or in some circumstances a 'full' ME2, for assessment.

Most of the ME2 designations and delegations that have been issued to-date are for a duration of twelve months

At the moment there are 79 'transitional' ME2s working within the new system, 67 in New Zealand and 12 throughout the rest of the world.

### **How many doctors?**

Three months ago 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.

At the moment there are 29 ME1s and 68 ME2s operating in New Zealand and 2 ME1s and 12 ME2s operating internationally.

We also have new applications from doctors wishing to become ME2s and ME1s and doctors who are presently ME2s and working towards becoming ME1s as soon as possible.

### **Becoming a Medical Examiner**

The Medical Examiner application form can be found on the CAA web site. Selection criteria and qualification requirements can be found in the *Aviation Medical Transitional Criteria Notice 2002* which can also be found on the CAA web site. Those wishing to become MEs should

complete the form, provide the necessary supporting documentation, and forward to the CAA. The application will be reviewed and, if necessary, further information will be requested.

Upon acceptance of an application, the appropriate designation and delegation documents will be forwarded, and details will be added to the ME listings on the CAA web site.

### **Regulatory Training**

To date formal regulatory training, provided by the CAA, has been available to a limited number of MEs during two-day courses held in Wellington. Completion of this regulatory training is among the requirements for any ME to receive delegations to allow assessment and certification. Without such delegations an ME will be limited to an examination-only role during the transition period.

The Central Medical Unit is currently working on a schedule of regulatory training to cater for the MEs who have not yet received this training. We anticipate two-day courses will be held at several locations around the country ... not just Wellington. This training program will extend over the next 12 - 24 months and we will let you know the details as soon as the plans become a little more concrete.

We are also looking at incorporating such regulatory training into some of the aviation medicine courses on offer and we're also considering the possibility of providing this training via either distance education or online training programs.

We are presently looking at the possibility of holding a two-day, weekend, regulatory aviation medicine course in Auckland on 29 – 30 June 2002 and will advise once this can be confirmed.
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### **Aviation Medicine Training**

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

As mentioned in the last issue of this newsletter there are a number of courses under development that may cater to the varied training needs of different MEs. CAA is presently involved in discussions with both Auckland and Otago universities concerning the courses they intend to offer. No courses have yet been formally reviewed by the CAA so the information provided below is based on what has been provided to us by the course developers.

#### Auckland and Massey Universities

The University of Auckland, in conjunction with Massey University, is investigating the development of a block course in Aviation Medicine which can be considered a stand-alone qualification or the basis of continuing education requirements (post graduate certificates, diplomas, and Masters, e.g. a Masters in Aviation at Massey University or a Masters in Medical Science at The University of Auckland) depending on individual candidate preferences. It will be recognised as an acceptable component towards higher Occupational Medicine training, including the Fellowship.

The planned course would be 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.

Discussions are ongoing as to whether the course can also incorporate the aviation medical regulatory training that has been provided by the CAA.

This is a new course and it is anticipated that the first such course will commence this November,

with enrolment information being made available soon.

For further information on this course you should contact Dr Michelle Millar:

Email: [m.millar@auckland.ac.nz](mailto:m.millar@auckland.ac.nz)

Tel: +64-9-373 7599 ext 2344

Fax: +64-9-308 2379

#### Otago University

The Otago University post-graduate Diploma in Aviation Medicine (DAvMed) 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 DAvMed 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: [rgriffiths@wnmeds.ac.nz](mailto:rgriffiths@wnmeds.ac.nz)

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### **Computer & Internet**

Access to the internet is a requirement for MEs. This requirement is not being enforced at the moment as we're using the three year transition to allow doctors to upgrade their internet access and support.

The CAA is not, however, printing hardcopies of the various forms necessary for the medical certification process. These forms are all available from the CAA web site.

It is our longer-term plan to shift all of our medical certification processes online. To that end we are starting to work towards scoping the task and defining the nature of the online capability we would require. We will keep you posted as this topic develops.

### **The Paper in the New System**

#### **The Act**

On 01 April 2002 we all found ourselves working in a new civil aviation medical regulatory system. The legislative structure of this new system is provided by the *Civil Aviation Act 1990 (the Act)* as amended by the *Civil Aviation (Medical Certification) Amendment Act 2001*.

Some amongst you have queried whether the current Act was, indeed, still the *Civil Aviation Act 1990*, especially since significant changes have occurred to our legislation. The answer to those questions is that while the Act has been amended it's title has not changed, nor has its initial date of entry. So we do still operate under the *Civil Aviation Act 1990*.

#### **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 provided in Part 67. If someone meets the medical standards they can be issued a Medical Certificate.

The *Civil Aviation (Medical Certification) Amendment Act 2001* did result in some amendment to the Rule, however the majority of Part 67 remains as it was prior to 01 April 2002.

The Ministry of Transport is presently working on the development of a new Part 67 which will have to proceed through the formal NPRM (Notice of Proposed Rule Making) consultation process before being issued.

### **The General Directions**

The Act now provides for the Director to issue General Directions (GDs) in a number of circumstances. General Directions are the primary tool that will provide the route to certification for applicants who fail to meet the medical standards contained within Part 67.

Our intent is that the GDs will provide the roadmaps that will allow MEs to directly certificate the vast majority of applicants. Of course those applicants who lie outside the GD coverage would still need to be considered under Accredited Medical Conclusion in conjunction with the CAA Central Medical Unit.

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 most medical conditions presently handled via 'applications for special consideration' and 'Letters of Authority' (LoAs) will be covered by GDs and will not require a lot of bureaucratic to-ing and

fro-ing. We are working hard to try and get some GDs issued as soon as is possible.

### **The Medical Manual**

The Medical Manual is undergoing significant revision. The new 'Volume 1', which covers the bare-bones administrative and process issues is available on the CAA web site. The old volume 1 is no longer valid.

The old volume 2 is also invalid although still represents a potentially useful source of guidance.

Our intent, over time, is for the complete new Medical Manual to be structured:

Civil Aviation Act 1990;

Civil Aviation Rule Part 67;

Regulatory medical processes and procedures;

Clinical aviation medical information;

General Directions and supporting documentation.

Such a manual will provide the ME with all the information necessary for every aspect of their regulatory function.

### **Forms**

By now most of you will have had dealings with the new forms. They are all available online on the CAA web site.

Acknowledging that they're not perfect we invite comments and suggestions and plan to revise them quarterly until they're relatively stable. Of course we'll advise you, via the CAA Medical Examiner mailing list, when new versions of any forms are posted.

### **Stamps**

By now all ME1s and many ME2s will have received their Medical Examiner stamps. Your old AMA and DME stamps are no longer valid, unless you're still dealing with certification assessments

that commenced prior to 01 April 2002. Please use your new Medical Examiner stamp on all CAA regulatory documents requiring a stamp.

If you do not yet have your *Medical Examiner* stamp please contact Judi Te Huia (TeHuiaJ@caa.govt.nz) who will arrange for one to be issued to you.

### **Old forms**

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 needed can now be downloaded from the CAA web site.

### **Communications**

#### **The Email Mailing List**

Most of you will have now received email from the CAA Medical Examiner mailing list, formerly called 'Aimie'. This is a new email mailing list that we're establishing for our medical certification functions. The software driving the list is very powerful and more details on how it works will be provided as we become a little more adept ourselves.

In contrast to the previous medical mailing lists the CAA Medical Examiner mailing list caters to all MEs. There is no separate list for ME1s and ME2s.

In the meantime the CAA Medical Examiner mailing list is operating in a one-way manner ... we can send mail out to the list but response and further discussion is not (yet) an option.

#### **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 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 hope 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. We are continuing with the planned regular meetings with AMSANZ-NZ which supplement our regular telephone and email discussion with that organisation.

### **The Processes in the New System**

The new medical certification process certainly differs from the old. For detailed information concerning the processes of the new system please refer to Volume 1 of the Medical Manual. This document can be downloaded from the CAA web site and provides details on how the system works. This 'Volume 1' is essential reading if you wish to function within the system.

Please, also, 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 bureaucratic hassles and, in turn, making the certification process easier for the licence holder or student.

### **Applying for a Medical Certificate**

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

### **Applying for Special Consideration**

If you find an applicant ineligible for certification, under the medical standards in Part 67, and there is no General Direction that provides for their certification then you, and the applicant may be faced with the need to apply for special consideration. Again, the form that you need for this can be found on the CAA web site.

The majority of special consideration applications that we've dealt with to date have resulted in the issue of a Letter of Authority (LoA) which, in turn, authorises an ME to issue a Medical Certificate to the applicant. The vast majority of those LoAs are issued within 36 hours of our receiving an Application for Special Consideration. Those that are taking longer are generally the more complex cases that require substantially greater research and consultation.

### **Frequently Asked Questions FAQs**

#### **Your questions of us.**

This section will respond to some of the questions we've received since the last issue of the *Medical Examiner*. While we try to answer questions directly we will also endeavour, in the future, to incorporate answers of wider interest into this newsletter.

#### **What is this five days business?**

We've had a few questions concerning the 'five working days' requirement. Most of these questions have been of the "Which documents must I send?" variety.

Section 11 in Volume 1 of the Medical Manual covers this question and we refer you there. This document is available on the CAA web site.

### **Who signs the form?**

Clarification has been sought on the Medical Assessment Report where it says 'Signature of Director / Delegate'. Some amongst you are unsure whether this refers to you.

All Medical Examiners hold a delegation from the Director. You are, therefore, a delegatee and so are able to sign the form as such.

### **Old forms or new forms?**

Some ME1s are not sure if they should be accepting the old forms or if they should be sending them back to the ME2.

We were happy to allow a short period of transition for the forms. This period has now drawn to a close. Please work with any ME2s who send you forms to ensure that they use the new forms. Use of the old, pink '201', forms, is no longer appropriate given the extensive changes in the law under which we work.

### **Which stamps are what?**

As with the forms we had agreed to a transition period during which either old AMA / DME stamps or new ME stamps would be acceptable. For ME1s the use of old stamps (AMA / DME) is no longer appropriate for new-system examination and assessment processes. The Act refers to Medical Examiners and not AMAs or DMEs so it is appropriate for you to identify yourselves as such.

Those ME2s who have a new stamp should use it for all examinations and assessments. For those who don't it will be necessary to use your old DME stamp until a new stamp is forwarded to you.

If you do not already have your ME stamp please contact Judi Te Huia ([TeHuiaJ@caa.govt.nz](mailto:TeHuiaJ@caa.govt.nz)) to ensure one is issued.

If you are handling legacy assessments that are still being processed under the old system then you may wish to hold on to your old stamp and use it for these.

### **Do I still need to issue a Medical Certificate?**

Where do I get the forms for the new Medical Certificate? Surely, with the assessment report, I no longer need to issue a Medical Certificate.

The format for the Medical Certificate can be found in volume 1 of the Medical Manual and we refer you there. This document is available on the CAA web site.

Electronic templates can be obtained, via email, from CAA. If you need one you should contact Judi Te Huia ([TeHuiaJ@caa.govt.nz](mailto:TeHuiaJ@caa.govt.nz)). The assessment program developed by Dr John Faris ([jgf@paradise.net.nz](mailto:jgf@paradise.net.nz)) also produces formatted Medical Certificates as well as Medical Assessment Reports.

Of course you do need to issue a Medical Certificate to an applicant who is eligible ... providing, of course, that you have the delegations that allow you to do so. If you are uncertain as to whether you can, or should, issue a certificate please call us and discuss the issue.

### **I'm still a DME aren't I?**

Under the Act there is no such thing as a DME. The Act provides for Medical Examiners. There was no automatic transition or grand-fathering of DMEs to become MEs. If you were a DME and have not applied and been designated as an ME then you are presently unable to examine applicants for the purposes of certification assessment.



This does not apply to old-system specialist DMEs, such as DMEs (Eye) and DMEs (ENT), who, although they are no longer DMEs are able to continue their specialist consultation function for medical certificate applicants.

If you were a DME in the old system and wish to become an ME in the new system please contact Judi Te Huia ([TeHuiaJ@caa.govt.nz](mailto:TeHuiaJ@caa.govt.nz)) for application information and forms.

### **Helping us to help you**

Below are a few of the issues that have caused our staff some extra and unnecessary workload. Such problems are entirely understandable as we transition into the new system but we'd 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.

#### **Why was this sent?**

Many documents are being faxed to us with no indication of why they're being sent. While, certainly, in many cases there's no need for a cover sheet it may be worthwhile considering a hand-written note explaining why the document is being sent ... 'for CAA filing', 'in support of special consideration application (LoA)', 'outstanding document from assessment previously sent' etc etc etc. Such notes will help our staff to quickly determine what needs to be done with the document rather than the current situation where they often have to phone your office or spend a lot of time chasing-up a file that may, or may not, need to be used.

#### **Where has this come from?**

All too often documents are faxed to us with no clear indication of who they're from. If your fax machine doesn't automatically insert text concerning your practice details then some form of simple identification, even your ME stamp,

would be appreciated to allow us to ascertain who is sending us the documents.

Knowing who has sent us a document makes our filing and follow-up more efficient and our responses more prompt.

#### **How is Special Consideration requested?**

We are receiving 'requests' for special consideration in many and varied formats. There is a form, available on the CAA web site, for this purpose so we ask that you please use it.

From time to time an ME has thought they'd applied for special consideration on behalf of an applicant and this wasn't readily apparent to us. Because the 'request' wasn't on the form provided we thought it was simply a letter of opinion and advice from the ME.

At the moment we are accepting requests for special consideration from MEs. In the future it will become necessary for the applicant to apply for this special consideration and not the ME.

Please do use the form provided. Of course you're welcome to provide supporting documentation as you see appropriate.

#### **Can the CAA send me some more forms?**

The CAA Central Medical Unit no longer prints or holds stocks of the forms needed for the medical certification processes. These forms are available, in electronic formats, either from the CAA web site or directly from the Central Medical Unit.

#### **How long is an LoA?**

Our staff are regularly fielding queries from MEs concerning the time needed to reach Accredited Medical Conclusion in considering an application for special consideration. Clearly this time can vary considerably and depends on the information available and the complexity of the issues being considered.

The vast majority of applications for special consideration are processed and an LoA issued within 36 – 48 hours of our receiving the application. In many cases, where the ME involved provides all the necessary supporting documentation and a concise and appropriate recommendation to us, the LoA is issued within 6 – 8 hours of our receiving the application. In some cases we have needed to request further information and documentation from the ME and this has resulted in delays.

Complex cases, being assessed by Central Medical Assessment, can take considerably longer to process. We all have obligations under the Act concerning the expeditious issue of Medical Certificates and every effort is being made by the Central Medical Unit to process such requests as efficiently as we can. We must, however, recognise that many complex cases require further investigations or consultations and that these can add considerable extra time to the process.

Please do keep calling us to keep track of special assessments with which you're involved. It is important to us that you are 'in the loop' and able to keep the applicants up-to-date on their assessment processes.

#### **A note of caution: Sibutramine**

Sibutramine hydrochloride (Reductil ®) is a serotonin and noradrenaline reuptake inhibitor used in the management of obesity. It is a centrally active medication and its possible side effects include decrease in cognitive functions, decreased seizure threshold, palpitations, hypertension, nausea, dizziness, anxiety, and blurred vision.

This is a reminder that the side-effect profile of Sibutramine makes it incompatible with the safe exercise of the privileges of a pilot or ATC licence. Accordingly it should not be considered

as being acceptable for use by medical certificate holders.

#### **Article: Sleep Disorders In Pilots**

By Virgil D. Wooten, MD

Aviation-related accidents are caused by human error 80% of the time. The role of sleep disorders in these mishaps is unknown and probably underestimated. Recognition of the causes and signs of fatigue and sleep disorders is central to safe and effective air operations. Recognition and treatment of sleep disorders may lower the rate of aviation accidents and improve operational effectiveness.

#### **Obstructive Sleep Apnea (OSA)**

OSA results from repetitive partial or complete upper airway collapse upon inspiration, resulting in loud snoring, hypoxemia, and subsequently, brief arousals. It is typically progressive, especially with weight gain.

As OSA becomes worse, oxyhemoglobin desaturations become more frequent, longer, and lower. Hypertension may develop or worsen, especially in the morning.

The repetitive brief arousals caused by sleep apnoea lead to the same effects caused by sleep deprivation. OSA patients typically complain of daytime fatigue, sleepiness, morning tiredness, concentration impairment, memory impairment, and irritability. The amount of sleep required to maintain function may begin to increase. As in sleep-deprived individuals, those having OSA may tend to deny or underestimate the extent of impairment caused by the illness. Several studies have indicated that individuals with OSA have much higher rates of automobile accidents, but adequate data on aviation mishaps in afflicted individuals are currently lacking.

OSA is caused by multiple airway anatomical and medical problems. Allergic rhinitis, nasal septal deformity, nasal polyps, maxillary hypoplasia, micrognathia, retrognathia, soft palate elongation, adenotonsillar hypertrophy, and other causes of airway reduction contribute to the development of OSA. All must be considered and addressed if the illness is to be effectively treated. OSA should also be viewed as a chronic and relapsing illness, needing periodic reassessment. Before treatment is attempted, OSA should be verified and the severity quantified by polysomnography. There is wide variation in individual impairment caused by OSA, and the true severity of the illness is not predictable based on history alone. The patient's report of improvement following treatment interventions is not reliable, due to partial treatment response, placebo effects and fear of loss of occupation or benefits. The Multiple Wakefulness Test, a modification of the Multiple Sleep Latency Test, assesses the ability to stay awake. It is probably less useful than sleep testing during real and simulated driving and piloting tasks, but the lack of simulator testing availability and validated measures of fitness for duty makes the MWT the most widely used assessment for alertness.

Weight loss is helpful in obese OSA persons, but unfortunately the failure rate is high. Airway devices or surgical correction are usually needed to correct the disorder. The devices offer rapidity of treatment, reversibility, flexibility, low risk, and low cost when compared with surgeries. Compliance problems, unpredictable effectiveness, and the possibility of relapse limit both surgical and non-surgical approaches. Nasal Continuous Positive Airway Pressure (CPAP) is highly effective; however, compliance can be a problem. Nasal occlusion, drying, claustrophobia, discomfort, and rhinitis often interfere with its use. Oral appliances that protrude the mandible are

effective in mild to moderate cases of sleep apnoea and can be used in most operational situations.

Nasal septal repair, turbinate reduction, and nasal polypectomy, together or alone, are important adjunctive surgical treatments but rarely work when done without also enlarging the oropharynx and/or hypopharynx. Uvulopalatoplasty (UPP), currently the most commonly performed procedure for OSA treatment, is successful less than 30% of the time when strict criteria (respiratory disturbance index of < 5/hr) for cure are used. The success rate is reduced in the obese, elderly and those with multiple airway anatomical problems. Concomitantly performing genial tubercle advancement increases the chance of cure.

Maxillomandibular advancement is usually performed after UPP has failed, but may be done as the primary procedure in individuals with maxillofacial problems. Glossectomy, hyoid suspension, and hyoid anchoring may pose more risk of morbidity. In-office surgical procedures that minimally alter the airway are unlikely to help OSA. Radiofrequency Volumetric Tissue Reduction applied to the tongue base may assist in the treatment of OSA but still needs further investigation.

### **Narcolepsy**

An uncommon neurological illness, narcolepsy most often begins in youth. In most cases, the sleepiness is extremely severe and pervasive. Afflicted individuals often report the inability to stay awake even in the most stimulating circumstances. Difficulty awakening in the morning is common. Sleep attacks, or irresistible urges to sleep, are characteristic and are often aborted or prevented by naps of less than 30

minutes. Narcoleptics often report dreaming during naps.

Cataplexy, a sudden voluntary muscle weakness lasting up to five minutes, is brought on by emotions such as laughter, anger, or excitement. There is no associated dizziness, or post-event fatigue. The weakness can be generalized or affect specific muscle groups. Sleep paralysis can occur in narcolepsy. The patient awakens fully, yet is unable to move for a few seconds or minutes. Hallucinations are common in the transition into and out of sleep. Cataplexy, sleep paralysis, and hallucinations are not always present in narcoleptics. The symptoms are all manifestations of aberrant control of REM sleep-related processes.

Only partial and temporary control of the sleepiness can be achieved with stimulants such as modafanil, pemoline, methylphenidate, and amphetamines. Cataplexy, sleep paralysis, and hypnagogic hallucinations are improved by antidepressants and gammahydroxybutyrate, but these medications are prohibited.

Following an overnight polysomnogram to verify adequate sleep and absence of sleep pathologies that could cause sleepiness and REM sleep onsets during the nap trials, the diagnosis of narcolepsy is made by performing a multiple sleep latency test (MSLT). Two or more REM sleep onsets with evidence of pathological sleepiness are desirable to confirm the diagnosis. The MSLT is a better measure of the ability to sleep than the ability to stay awake; therefore, it should not be used as a test for the ability to maintain alertness or vigilance. Genetic testing for narcolepsy is not diagnostic, but there is a genetic predisposition for the disorder. The cause of narcolepsy is now believed to be due to degeneration of CNS hypocretin-orexin cells, triggered by unknown environmental causes in susceptible individuals.

## **Insomnia**

Chronic insomnia affects 10 to 30% of the population. Its prevalence and importance in the aviation population is less certain. Studies of performance in chronic insomniacs have given mixed results, with some studies suggesting performance impairments and others showing little, if any. Insomnia is a complaint that may have multiple causes. Insomnia due to anxiety and depression, for example, has more bearing on flight operations than insomnia due to sleep state misperception, in which there is adequate sleep but impaired ability to perceive that sleep has occurred.

More senior flight personnel have more difficulty adapting to unfamiliar (hotel insomnia), uncomfortable, noisy, or bright sleeping accommodations. Nearly all insomniacs develop poor sleep habits and frustration, which may perpetuate the problem. Therefore, good sleep habits and relaxation training are essential to the effective treatment of insomnia.

## **Sleep Hygiene**

- Use the bedroom for sleep and sex only - no TV, music, business, or arguing in bed.
- Avoid looking at 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, e.g., pets.
- Get out of bed after lying awake for more than 20 minutes—do something boring or run through 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.

### Restless Legs Syndrome

Restless Leg Syndrome is an annoying but non-painful condition that occurs in the evening hours and with prolonged sitting or lying. Involuntary jerks and twitches are frequently observed while awake, and usually there are rhythmic leg jerks occurring about every 20 - 40 seconds after sleep onset (Periodic Limb Movements of Sleep or PLMS). The afflicted individual experiences an overwhelming need to move the legs, which gives temporary relief. Caffeine, alcohol, anticholinergics, antihistamines, antidepressants, antipsychotics, diuretics, decongestants, and theophylline can aggravate the condition. Iron deficiency, anaemia, uraemia, vitamin deficiencies, and electrolyte abnormalities can aggravate Restless Leg Syndrome. Iron supplements have been reported helpful, but because of the risk of iron overload, it is recommended that ferritin and iron panels be obtained and followed. A number of drugs have been reported effective in small case studies. Dopamine agonists (levodopa, bromocriptine, pergolide, pramipexole, ropinirole), clonazepam, and narcotic analgesics have been demonstrated to be the most effective, but the last two are contraindicated.

In the last 20 years, there have been major advances in the understanding of sleep disorders and their treatment. The aviation medicine specialist can play a pivotal role in evaluating pilots with sleep disorders. The recognition and treatment of sleep disorders can prevent the potentially catastrophic outcomes, especially when these disorders are combined with fatigue-inducing operations.

### References

1. Redline S, Strohl KP. Recognition and consequences of obstructive sleep apnoea hypopnea syndrome. *Clin Chest Med*; 1998;19:1-19.
2. Mitler MM, Walsleben J, Sangal RB, Hirshkowitz M. Sleep latency on the maintenance of wakefulness test (MWT) for 530 patients with narcolepsy while free of psychoactive drugs. *Electroencephalogr Clin Neurophysiol*; 1998; 107(1):33-8.
3. Aldrich MS, Chervin RD, Malow BA. Value of the multiple sleep latency test (MSLT) for the diagnosis of narcolepsy. *Sleep*; 1997; 20:620-9.
4. Morin CM, Wooten V. Psychological and pharmacological approaches to treating insomnia: critical issues in assessing their separate and combined effects. *Clin Psychol Rev*; 1996; 16:521-42.
5. Montplaisir J, Godbout R, Pelletier G, Warnes H. Restless legs syndrome and periodic limb movements during sleep. In: Kryger MH, Roth T, Dement WC, eds. *Principles and Practice of Sleep Medicine*. Philadelphia: Saunders; 1994; 589-97.

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### Who is doing what?

The CAA Central Medical Unit presently 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 James Harman, as well as one vacant position;
- Advisers Amy Butters, Vanessa Calnon, Dianne Lassche, Dianne Parker, Ngaire Roil, & half of Suzanne Shirtliff.

Pooshan Navathe has the primary responsibility for applicant certification matters. 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

Amy Butters has recently joined the CAA Central Medical Unit as an Adviser ... Welcome Amy. Amy comes to us with a strong background in customer relations and her skills are a great addition to a wonderful team.

Dr James Harman has been made an offer he can't refuse by a well oiled company in the Middle East. Not only will James get to see more of the world but he'll also be further expanding his

occupational medicine horizons. Thanks for everything James, it's been a pleasure and a privilege.

Drs Watson and Navathe recently attended the annual *Aerospace Medicine Association* (AsMA) meeting in Montreal, Canada. This proved to be a very useful meeting with a diversity of topics relevant to New Zealand civil aviation medical regulation discussed. Dr Watson and Navathe each presented two papers at the meeting.

### Staff Vacancy

See below for details concerning a medical officer staff vacancy at CAA.

### 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](http://www.caa.govt.nz)) now 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*.

### Problems with faxes

Our direct fax number differs by only one terminal digit from the fax of the CAA legal department ... ours is +64-4-560 9470 and theirs is +64-4-560 9479. Finger troubles have lead to a number of medical faxes being inadvertently sent to our lawyers.

This is a classic human factors problem and we're looking at what we can do to remedy the situation. In the meantime please try and keep a close eye on that last digit when you send us a fax.

### Staff Vacancy Advertisement

With the imminent departure of Dr James Harman we expect to have a staff vacancy. A copy of the advertisement text is included below. If anyone is interested please don't hesitate in contacting Kaz for further information.

#### Aviation Medicine Registrar Personnel Licensing / Medical Unit

Applications Close 31st June 2002 and should quote vacancy number CAA 02/02.

To Apply. Please send a covering letter and curriculum vitae to Ms Kaz Jowett, Adviser Human Resources, Civil Aviation Authority of New Zealand, PO Box 31 441, Lower Hutt. Alternatively telephone +64-4-560 9400 or facsimile +64-4-569 2024 or email [jowettk@caa.govt.nz](mailto:jowettk@caa.govt.nz).

The CAA – Te Mana Rererangi Tumatānui o Aotearoa – has a policy of equal employment opportunities and operates a smoke free work environment.

Are you a NZ registered medical practitioner with an interest in aviation medicine? Are you an Occupational Medicine trainee wishing to expand the scope of your experience?

As Aviation Medicine Registrar you will be part of a small team and will assist with the ongoing medical assessment and certification activities of the Personnel Licensing Unit. You will also provide specialist advice, including involvement in developing procedures and other documentation.

You will need excellent interpersonal and time management skills to succeed in this position, and the ability to quickly establish your professional and technical credibility within the CAA and the industry.

We can offer you an attractive remuneration package with negotiable terms and conditions. This position is available on either a full time or part time basis, with consideration given to job-sharing.



#### CAA Medical Help

Tel: +64-4-560 9466 Fax: +64-4-560 9470

Email: [med@caa.govt.nz](mailto:med@caa.govt.nz) web site: [www.caa.govt.nz](http://www.caa.govt.nz)