



**Australian Government**

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**Civil Aviation Safety Authority**

# OUTCOME OF PROCESS REVIEW FOR ISSUANCE OF CASA MEDICAL CERTIFICATES

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## Definitions of Acronyms and Synonyms

Acronym	Description
DAME	Designated Aviation Medical Examiner
Avmed	CASA Office of Aviation Medicine
MRS	Medical Records System – IT application for medical certification
MRS Online	Application used by DAMEs to submit medical assessments to CASA
Delegation	Certificates issued by Medical Examiner on behalf of Licensing Authority

# 1. Executive Summary

*The CASA Office of Aviation Medicine (AvMed) issues medical certificates for professional pilots (Class 1), private pilots (Class 2) and air traffic controllers (Class 3) through a centralised system, based on assessments performed by designated aviation medical examiners (DAMEs) throughout Australia and overseas. In 2006, CASA implemented government policy in relation to cost recovery for regulatory services, including medical certification.*

*Following negative feedback from the aviation community (General Aviation – GA in particular), CASA undertook a public survey to examine options for the issuance of (Class 2) private pilot medical certificates, including the option of delegating this role to DAMEs. The survey results showed that medical applicants were supportive of CASA exploring such options though there was less support from DAMEs and groups representing them with concerns raised about liability and the loss of centralised records.*

*In response to the findings of this survey, CASA's Office of Aviation Medicine undertook an extensive feasibility assessment of potential models for issuance of medical certificates including full delegation to DAMEs for all classes of certification. This assessment included examining a safety case and a cost benefit analysis. The assessment also included an analysis of potential interactions with other proposed regulatory changes including the proposed establishment of a recreational pilot's licence (RPL) under Part 61. This assessment was presented to the CASA executive in late 2007.*

*The findings of the assessment were, that whilst delegation of certificate issue to DAMEs had merit in terms of convenience and potentially reduced costs to fitter individuals, there was a significant risk of reduced aeromedical safety and decision consistency and also a potential negative financial impact to certificate holders with medical conditions. In terms of delegating only class 2 certificates, the assessment also found that running parallel systems (one for centralised for professionals and one delegated for private certificate holders) would be inefficient and if delegation of certification is pursued it should be across all classes of certificate. With either model, the safety importance of maintaining a centralised medical database was stressed*

*In light of these findings the CASA executive has decided against delegation of class 2 certification but notes that the reduced medical certification requirements for the RPL proposed under Part 61 provide an alternative means of reducing the cost and administration burdens for certain General Aviation activities. The executive concluded that an investment in improved efficiencies of the current medical certification system via the use of information technology has some potential to further reduce the cost recovery burden on industry and further improve service delivery.*

## 1.1 About this document

This paper provides an overview for aviation medical applicants, DAMEs and other interested parties of the outcomes from a review undertaken in 2007 of the CASA medical certification system.

## 1.2 Who should read this document

- Holders and applicants for CASA medical certificates
- Designated Aviation Medical Examiners (DAMES)
- Persons or organisations representing applicants or DAMEs

## 1.3 Related documents and references

The following are a list of references or related CASA documents, which may be referred to in relation to this paper:

- Civil Aviation Safety Regulations (CASRs) Part 67 - Medical
- Designated Aviation Medical Examiner (DAME) Handbook  
<http://www.casa.gov.au/manuals/regulate/dame/index.htm>
- Civil Aviation Advisory Publication (CAAP) Admin 1.  
[http://www.casa.gov.au/download/caaps/admin/admin\\_1.pdf](http://www.casa.gov.au/download/caaps/admin/admin_1.pdf)
- Discussion Paper: A review of the Class 2 Medical Certification System: Considerations and Options for Administrative System Change in CASA  
<http://www.casa.gov.au/avmed/class2/index.htm>
- CASA Delegation survey results  
<http://www.casa.gov.au/avmed/class2/class2report.pdf>
- Part 61 NPRM
- Assessing Fitness to Drive — Guidelines and Standards for Health Professionals in Australia (third edition), 2003, Austroads  
<http://www.austroads.com.au>
- UK CAA National Private Pilots Licence (NPPL)  
<http://www.caa.co.uk/default.aspx?catid=49&pagetype=68&gid=305>

## 2. Background

CASA's current medical certification system is a centralised model where Designated Aviation Medical Examiners (DAMEs) perform assessments on licence holders and then forward those assessments to the licensing authority for review and certificate issuance by CASA's Office of Aviation Medicine (AvMed). This system is applicable to all licence holders including professional pilots and Air Traffic Controllers (Class 1 and 3) as well as private pilots (Class 2).

There is a significant difference between the relative public safety risks of professional vs. private certificate holders in that private/recreational pilots may only intermittently exercise the privileges of their certificate and do not carry fare paying passengers. This is reflected to some degree by the current certification system in that private pilots are held to a lower medical standard and have less complex and less frequent medical assessments.

In January 2006 and in accordance with government requirements for cost recovery, CASA introduced a \$130 fee for the assessment of medical certificate applications for all classes. There was significant initial negative feedback from certificate holders and in particular the General Aviation (GA) community. Some of the negativity was related to inadequate industry consultation and awareness. But there is no doubt that poor service delivery, partially related to administrative complications resulting from cost recovery being a new function for CASA exacerbated the problem. This fee was subsequently reduced to \$75 from 1<sup>st</sup> June 2007.

On June 1 2006, CASA issued a discussion paper to obtain feedback regarding the current medical certification system and fee structure that CASA provides for Class 2 (private) pilot medicals. The paper presented 4 options for issuing medical certificates, including an option for delegation of Class 2 certificate issuance to DAMEs. In a delegated system, DAMEs would conduct the medical examination, complete the standard medical report form and issue a medical certificate with full validity and advise CASA of the certification. Where the applicant did not fully meet the CASR standard, the DAME could either apply flexibility based on demonstrated equivalent safety or refer the application to CASA for completion of the evaluation.

That paper included a survey to be completed by participants and over 600 responses were received. The results indicated that delegating the approval of Class 2 medicals to all DAMEs, was the preferred option for aviation certificate holders, including holders of all classes of medical certificate (82.5% approval) and to a lesser degree the Avmed respondents including DAMEs and Aviation Medicine societies (62% approval). In the survey, moderate support from DAMEs for delegation was tempered by concerns surrounding liability issues and dependent on CASA providing centralised data storage for medical records. The survey results were published on CASA's website in November 2006.

Given this response, CASA undertook an extensive feasibility assessment for a delegated system including a safety case and cost benefit analysis. The assessment also examined other available options and included an analysis of this project's interaction with draft Part 61 initiatives.

### **3. The current system vs. a delegated model**

The delegation survey of July 2006 referred exclusively to DAMEs undertaking issuance of class 2 certificates (for private pilots). Class 1 and 3 certificates (commercial and ATPL pilots + ATC) were not included in the scope of discussion. Also excluded from the scope of the delegation survey was information with regard to CASA's planned changes under Part 61. Under Part 61, it is proposed that certain lower risk private aviation activities which currently require a class 2 medical certificate would be permitted on a recreational pilot's licence (RPL), if the pilot had been cleared in the past 4 years by any medical practitioner to have met the national private drivers' standards. These details are outlined in section 6 below.

It is worth noting that pilots engaged in some recreational aviation activities such as those undertaken in ultra light and some "amateur built" aircraft, do not require a CASA medical certificate. Some of these aircraft occupy the same airspace and are of similar or even higher performance than some VH registered aircraft. The medical requirements for this form of flying are determined by the organisation to which the aircraft is registered and ranges from "being able to state that your health meets the requirements necessary to hold a car driver's licence" through to holding a full CASA class 2 certificate.

#### **3.1 The current aeromedical certification model**

Currently CASA issues the medical certificates for all classes. Just less than 30,000 applicant examinations are performed annually by around 600 CASA designated DAMEs. Each application and DAME recommendation is reviewed by the CASA Office of Aviation Medicine. In the case of recertification, if the applicant meets the relevant standard in full at the time of the examination, the DAME is able to extend the validity period of the current certificate by up to two months whilst CASA processes the new application. If the applicant does not meet the standard, the DAME does not extend the certificate and defers the decision to CASA. CASA AvMed will then assess the application either make a decision or require more information or tests (approximately 30% overall require this to determine the outcome). Some DAMEs will assist CASA in the decision process by 'working up' the case but as DAMEs do not have access to the past relevant records and often do not have the time or aeromedical expertise to research the case most prefer to defer to CASA.

The eventual decisions fall into three broad categories including; (i) issuing an unconditional certificate for the full validity period (approximately 80%), (ii) issuing a conditional certificate and/or a certificate of reduced validity to mitigate risk (approximately 20% excluding "spectacles required") or (iii) refusing to issue a certificate (less than 1% for all classes).

When medical information comes to light between certification periods, CASA has the option to ask for more information or to suspend or cancel certification if required. To carry out its assessment function, CASA currently employs 5 processors, 4.5 assessors, 1 supervisor and 2 doctors. The principal medical officer (PMO) and aviation medicine certification administrator (AMCA) also play a small role in the certification system.

The current IT system is dedicated to a centralised certification system. It does not enable decentralised issuance or sharing of data with DAMEs. Although only 30% of CASA medicals are performed online using the current MRS-online system, a project is underway to improve the online system with the aim of increasing uptake to 75% or more. The current regulations, guidance material and DAME appointment system are also designed for a centralised decision making system rather than a delegated one. CASA currently does not provide DAMEs with formal training program on or prior to appointment. To be appointed, DAMEs must have undertaken some external course of instruction in Aviation Medicine to at least post graduate certificate standard. Only two of these accredited courses currently contain formal advice with respect to the CASA CASRs and other legislation or regulation (The Monash University Course and the ADF Avmed course). For this reason, the guidance material, contained in the DAME Handbook (DHB) is designed around what DAMEs should provide to CASA to enable decisions rather than how decisions should be made.

There is a wide range in the number of medicals performed by individual DAMEs from just a few per year (generally in rural areas) to many hundred per year (by a few individuals). Generally performing aviation medicals is not a very profitable pursuit. Many DAMEs do not charge as for other occupational assessments as they do these medicals either because of an interest in aviation or because local certificate holders have encouraged them to become DAMEs as a service to the local aviation community. A handful of DAMEs do have Aviation Medicine as a large proportion of their practices with high and efficient throughput.

## **3.2 Delegated model**

In a fully delegated model, DAMEs would hold a delegation to issue original and renew medical certificates for applicants who met the relevant standard. CASA would decide whether this system applied for Class 2 only or for all classes of certificates. CASA would develop and conduct a training course for DAMEs to familiarise them with the regulations and guidance material. CASA would also oversight and audit DAME designation and performance in terms of decision making, receive and store the medical records in a centralised database and maintain a decision making role in highly complex or controversial decisions. CASA would also maintain the delegations for cancellation and suspension of certificates. DAMEs would be able to declare applicants temporarily unfit to operate and to return them to operate once fit as they can now. CASA would not recover costs from certificates issued by DAMEs so the training, audit and oversight function would need to be funded from appropriation.

## **4. Potential benefits of delegation**

Delegation is consistent with CASA's current philosophy of outcome based regulation with industry assuming increased responsibility for safety and CASA auditing outcomes. There are also potential benefits for applicants in terms of costs and convenience. For CASA, a potential benefit would be improved industry relations and reduced administrative burden. DAMEs would also have potential benefits in terms of autonomy and, if sufficient appropriation funds were committed, improved education and guidance.

### **4.1 Potential benefits to industry**

The current system of medical certificate issuance is not 'seamless' in that the new certificate has to be posted to them by CASA rather than finalised during the DAME assessment. If significant delays occur with the applicant, DAME or CASA, there is the potential for certificate expiry. The current certification system also requires applicants to pay two separate fees when gaining or renewing their certificate; one for the DAME's examination and one for CASA to process and assess the application.

A delegated system would improve efficiency and applicant satisfaction by creating a 'one stop shop' seamless recertification system and by reducing the costs for those who meet the medical standard to a single DAME fee. It should be recognised though that some DAMEs have indicated they would potentially charge a higher rate than their current fee if they had to make the decision. Costs for those with complex problems also have the potential to increase if DAMEs have to expend resources 'working them up'. The government's cost recovery policy would also mean that, if CASA was required to receive and store copies of the medical assessments made by DAMEs, it would have to charge a fee for that function.

### **4.2 Potential benefits to CASA**

A significant proportion of current medical applicants are determined by the DAME to meet the relevant medical standard in full. CASA currently still devotes resources to scan, review and store the data for these applicants. In a delegated system, some of the resources currently directed at the administrative processing of aviation medicals could potentially be redeployed towards more value adding safety activities including development of aeromedical policy, safety audit and training/education of DAMEs.

Currently the quality assurance assessment of DAMEs is based on whether or not the medical assessment is timely and complete rather than being based on safety relevant outcomes or DAME decision making. By delegating certificate issuance, CASA would be able to move away from a process orientated approach to a more outcomes based, risk management approach. This would encourage greater industry (DAME) acceptance of responsibility for aeromedical safety. Resources will be freed up to concentrate on emerging and important aeromedical issues such as diabetes, cardiovascular disease, mental health, fatigue and drug and alcohol issues.

A delegated model would also make CASA more aligned with the models of other 'western' regulators such as the FAA, UK CAA, Transport Canada and the NZ CAA. A comparison of CASA's system with other states is at Appendix A. As can be seen, whilst not all of these states have a fully delegated model, they do allow DAMEs to issue the certificates at the time of the medical examination (with the exception of initial professional issue by the JAA). Concerns cited by those licensing authorities that do run delegated systems include the loss of centralised records and an inability to adequately audit sufficiently to ensure quality<sup>1</sup>.

The survey carried out in 2006 clearly demonstrates that industry overwhelmingly saw delegation as a positive direction for the regulator to take. Applicants would generally receive their certificates at the time of their DAME examination and the medical cost recovery impact on general aviation in particular would potentially be reduced. If these benefits were realised, this would result in improved industry relations for CASA. Since 2006, service delivery has improved markedly and the cost of CASA's assessment has been significantly cut.

### **4.3 Potential benefits to DAMEs**

With a delegated model, DAMEs could potentially have greater satisfaction from their role as they would be further empowered and challenged. This benefit is tempered by the view of some DAMEs who have indicated that they do not wish to assume this challenge or responsibility. If CASA were to delegate issuance, it would need to devote significantly increased resources into DAME training and guidance material. This would have a potential benefit to DAMEs who would receive improved education. This education would be aimed at the legal framework of the relevant legislation as well as more concentration on the aeromedical risk assessment and decision making.

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<sup>1</sup> Personal correspondence with Chief Medical Officers

## 5. Risks

The following risks were identified if delegation was implemented:

### 5.1 Variability of DAME decisions

Because the current Australian aeromedical decision making system is centralised, and CASA's DAME network is geographically dispersed, current DAME training is based largely on approval of aviation medicine courses that are provided by other organisations such as academic institutions. CASA has no formal training program for DAMEs though it does educate via State and National aviation medicine seminars and conferences and contributes teaching to the two courses mentioned previously. Other DAME continued education is achieved via the DAME newsletters or by DAMEs utilising the DAME Handbook. Aviation policy and guidance is kept current through regular regulatory workshops held jointly with the New Zealand CAA. This model is in contrast to states where the licensing authority operates a delegated model. In those regimes the regulator concentrates more on formal training courses for AMEs including re-qualification and detailed audit of AME decision making (e.g. FAA, JAA, and NZ CAA).

As no formal audit of DAME decision making has been conducted within CASA, there are no formal data available on performance other than administrative accuracy. Anecdotal opinion from CASA medical officers suggests there is a wide variation in the quality and consistency of DAME decisions. CASA receives numerous examples of cases where DAMEs have either extended an applicant's certificate inappropriately or denied certification when it should clearly have been granted. An (unpublished) data analysis of 5155 'difficult cases' (reviewed by the panel of CASA medical officers) between 1990 and 2003 by Dr Tak Sham gives some credence to these anecdotal views.

In his analysis, Dr Tak Sham found the following:

- In 39% of the cases where a DAME recommended the applicant was unfit CASA eventually passed the application with a limitation;
- in 5% of cases, where the DAME recommended the applicant was unfit, CASA passed the medical without restriction;
- in 32% of cases, the DAME had renewed the certificate without limitation and CASA passed only with conditions or limitations upon the certificate; and
- in 5% of the cases, where the DAME had extended the certificate, CASA eventually failed the application.

These data demonstrate that there is currently a safety net in place in the form of CASA AVMED where experienced and qualified aviation medicine experts make the vast majority of aeromedical decisions. This centralised system maintains a high level of decision quality and also ensures consistency. In a delegated model that safety net would be degraded and consistency would be more difficult with 800 decision makers. Poor quality aeromedical decisions may broadly fall into two categories, either;

- a.) an overly conservative DAME decision where previously CASA may have applied flexibility, and resultant negative impact on applicant; or
- b.) an overly liberal DAME decision with a resultant potential flight safety risk.

The quality of DAME decisions is multifactorial including DAME experience, training, attitude and external pressures. Some of these inconsistent decisions may be trapped by establishing a quality assurance check or by the applicants themselves appealing but many would escape attention. It would be vital that training and guidance materials are of a high quality and that detailed guidelines are provided around the parameters within which DAMEs are able to issue certificates. For applicants who clearly meet the relevant standard, it would be straightforward but for cases where complex risk assessment is required, CASA must delineate what constitutes evidence of equivalent safety.

The current policy and guidance material is not designed for a delegated decision making process. The DAME handbook does not include decision assistance tools such as algorithms or flow diagrams but rather it guides DAMEs in what information they should provide to CASA. The DAME handbook and other guidance material would need significant amendment and enhancement to enable decision support. A failure to do this could potentially lead to more conservative decisions being made by DAMEs than is currently made by CASA experts who apply flexibility based on medical literature/evidence or specialist advice/experience.

Additionally, a robust system for quality assurance and audit must be in place. These measures would significantly improve the consistency and quality of DAME decision making and may provide mitigation against the impact of inconsistent decisions. No audit system could provide a level of safety oversight that is equivalent to the current system

## **5.2 Legal liability of DAMEs**

A significant proportion of the DAME population is concerned that devolution of certification may result in increased liability or 3<sup>rd</sup> party insurance costs. In the delegation survey, a minority of DAMEs suggested that because of this issue, delegation may drive them to cease acting as DAMEs. Other DAMEs have suggested that from discussions with their insurers, these concerns were unfounded or exaggerated.

There was also an indication from DAMEs that if delegation were to occur then DAMEs would need to be indemnified by CASA. CASA currently does provide indemnity coverage for some delegates such as LAMEs under the advisory publication CAAP Admin 1. DAMEs are currently designees, not delegates and there is no current formal indemnification. If 800 DAMEs were to be included in this indemnification, it may have significant implications for CASA's insurance premium and therefore a potential increased cost recovery burden.

During the analysis of this issue, CASA has had discussions with representatives of the major medical insurers in Australia. Although they would not provide a definitive

answer to whether DAMEs' insurance premiums would increase, the intimation was that it is unlikely. Reasons provided for this were as follows:

- These insurers already provide indemnity under existing policies for DAMEs to extend certificates for 2 months. There have been no known claims resulting from this coverage.
- Insurers also provide coverage under existing policies for doctors to perform examinations for other similar transportation assessments such as dangerous and heavy goods drivers and rail medicals.
- Any premium increases would result only if there was evidence that there were claims occurring where the insurers incurred costs. The current evidence from other transport fields and international aviation experience is that this is unlikely.
- Current data for aviation occurrences relating to incapacitation suggests it is a rare event and it would be exceedingly rare that the action or inaction of a DAME would be directly related to such an event.

Although this information is not definitive, it appears to indicate that DAMEs' concerns about liability may be largely unfounded. Nevertheless, there is a risk that a proportion of DAMEs may consider this issue significant enough to consider resigning. It therefore poses a potential risk to the DAME network that would need to be definitively addressed.

### **5.3 The need to maintain a centralised records system**

CASA currently maintains extensive records of all examinations, tests and specialist reports conducted in the process of assessing fitness for certification. These records are vital when an applicant moves from one DAME to another who will not have access to any of the previous medical documentation. The medical records are also the current best method of accurately assessing flying activity and other demographics for the Australian aviation industry and are used by other organisations such as the ATSB in their analyses. Access to these documents would also be vital for CASA to be able to adequately audit the quality of DAME decisions.

In a delegated model, these records would either:

- (i) be kept by the DAME who did the assessment and a notification or copy of the certificate sent to CASA; or
- (ii) CASA could require DAMEs to forward their assessments and other relevant results/documentation for data collation

DAMEs were concerned that if there were no central repository of records, that there would be a significant risk of 'doctor shopping' where applicants can be 'variably forthcoming' with information about their medical conditions to a new DAME. There was also concern that there would be a risk of the records being lost or irretrievable should they be required for legal purposes or incident investigation. From CASA's perspective, the loss of a centralised records repository would mean a loss of the ability to assess trends in the medical fitness of pilots.

For these reasons, CASA Avmed and DAMEs (as confirmed in the delegation survey) consider that maintaining a centralised medical records system is vital. However maintenance of central records with the current technology would require CASA to devote significant resources with a potential for cost implications.

The government cost recovery policy also has a requirement that if CASA is to receive and store data then there would be a resultant obligation to recover costs for that 'service'. A potential solution to this issue lies in the current investment in developing an information system where DAME assessments are conducted online and DAMEs are given access to past medical records for future assessments. Data entry and pathology coding is then decentralised with minimal requirement for CASA officer involvement and no cost recovery implication. A project is currently underway for the upgrade of the MRS-Online system which should assist in this aim. This project is currently on track to be finalised in late 2008 or early 2009.

## **5.4 Risks to the DAME network**

There were indications in the delegation survey and from numerous anecdotal sources that a move by CASA to a delegated system, particularly if DAMEs were forced to use MRS-online, would cause some DAMEs to resign their designation with resultant poor coverage in certain areas and loss of aviation medicine experience in the system. A commitment of CASA resources directed at DAME training guidance and support may convince some of these to remain but it is likely that regardless of CASA's efforts in these areas that a proportion of DAMEs would resign their designation. The indications are that these are DAMEs who do relatively few medicals per year, often in rural areas or overseas where DAME coverage is thin. This is a significant risk to both CASA and certificate holders. The DAME network is tenuous in remote regions and it may be the GA communities in those areas that are hardest hit.

## **5.5 Financial risks to industry**

One of the key drivers from industry, and particularly private pilots, for supporting delegation is that of reduced medical expenses associated with aviation activities. Prima facie, the delegated system will achieve that aim for those applicants but there are potential risks to that outcome. Firstly, there is a significant likelihood that DAMEs who are issuing certificates rather than deferring decisions to CASA will charge applicants more for that function. CASA does not oversight DAME fees and there is currently a significant variation in their standard fees. These increased costs would be particularly relevant if DAMEs had to spend time and or resources in the assessment of complex cases. Assessment of these cases can range from referral to a specialist, arrangement of further tests or an extensive literature review.

In the current system, costs for aviation medicine specialist assessment (CASA medical officers) are included in the flat rate CASA medical fee (\$75) with no differential fees charged on time taken for assessment. In a delegated model, it is likely that either the DAME or CASA will impose cost recovery on the applicant for time and expenses incurred in investigating a safety relevant medical condition.

As indicated in an earlier risk, some DAMEs have suggested they may not participate in a delegated model. If there is any resultant DAMEs resignation from a delegated system, some applicants in remote locations may also have to travel for their assessments with associated costs.

Lastly, under the current cost recovery system CASA will still be required to recover a fixed portion of its overall operating costs. Therefore losses from medical fees will need to be offset by other means. These means may take the form of fees or charges upon whole or part of industry. The operating costs of the Office of Aviation Medicine would likely be increased as an audit system would need to be established and new training and guidance materials created. If only class 2 issuance was delegated, there would be the need to maintain parallel systems with duplication of costs and efforts.

Hence there is a moderate risk that for a portion of industry at least, overall costs associated with medical assessment may actually increase. This would be most prominent for those applicants who had safety relevant medical conditions that needed extensive aviation medicine assessment. The level of these costs would vary depending upon the experience and confidence of the DAMEs in their assessments and whether they decided to resolve the issue themselves or refer the case to CASA.

Risk assessment matrix for delegation

Risk	Impact	Likelihood	Possible Risk Minimisation Strategy	Outcome
<b>Variability in quality and consistency of DAME aeromedical decisions</b>	Safety – high Applicant dissatisfaction	Highly likely	Investment in DAME training and oversight + guidelines.	Cost to mitigate high and mitigation incomplete
<b>Legal liability of DAMEs</b>	1. Loss of DAMEs (high) 2. CASA insurance premiums (high)	Moderately likely	Further formal consultation with insurers CASA could indemnify DAMEs under CAAP Admin 1	Indemnification costly and probably unnecessary. Actual risk low but perception of risk high
<b>Need to maintain a centralised records system</b>	Loss of data for accident and incident analysis Loss of data for research and public health analyses. “Doctor shopping”	Low if IT systems enabled and central records maintained	CASA maintains a central database that receives online medicals from DAMEs and provides access for DAMEs to past records. Coding of diseases and conditions is enhanced and improved data is available	Maintenance of centralised records would require cost recovery.  MRS online project underway.
<b>Risks to the DAME network</b>	Loss of DAMEs in key areas – high in specific areas	Moderate	CASA provides a robust support structure and training for DAMEs. CASA provides a deferral service for DAMEs.	Loss of DAMEs could be minimised but not obviated.
<b>Cost recovery implications</b>	Loss of CASA cost recovery but requirement to establish an audit system and improve DAME training. Results in higher overall cost to CASA for medical certification system	Highly likely	Costs recovered elsewhere or appropriated.	Likely result is a shift of cost recovery to fund Office of AvMed operating costs.
<b>Financial risks to industry</b>	Increased costs to applicants with medical conditions requiring detailed assessment	Moderate	CASA provides clear guidelines and a deferral system for cases where DAMEs are unsure.	Individuals with medical conditions likely to have increased costs. Fit applicants may have a reduced overall cost.

## 6. Medical aspects of proposed Part 61

Draft legislation in the proposed Part 61 has relevance to this paper as it proposes changes that include the development of an Australian recreational pilots licence (RPL) that would be issued outside the ICAO framework.

The development of Part 61-FCL commenced in 2001 with the release of the two discussion papers for public comment. Following this, a proposal was submitted to the Standards Consultative Committee (SCC) to merge the original Parts 61 (Pilot Licensing) and 63 (Flight Engineer Licensing) into a restructured Part 61 (Flight Crew Licensing) covering the licensing of all flight crew. The recreational aviation standards sub-committee was involved with the development of CASR Part 61 up until 2003 leading to the development of the proposed RPL and associated standards. The final version of the NPRM was released in July 2003 for public comment. Completion of this process by the Office of Legal Drafting and Publishing (OLDP) within Attorney Generals represents the final stage in the CASR development prior to issue of NFRM. Development of associated guidance material prior to implementation is yet to be completed.

The relevant regulations for the medical provisions for the RPL are at Appendix B. The RPL licence would enable holders to operate private flights only by day under VFR, in a specified airspace (see below) and in a single pilot certified aircraft with a maximum of 4 seats. The proposed medical certificate for this licence is the CASA Class 2 certificate; however, the proposed rules allow the holder of a RPL to fly without a CASA medical certificate under certain conditions, namely that:

- he or she meets the medical standard for the holder of a private motor vehicle driver licence set out in the publication *Assessing Fitness to Drive — Guidelines and Standards for Health Professionals in Australia*, and
- within the last 4 years, he or she has assessed his or her medical condition, in accordance with that medical standard, in consultation with a medical practitioner; and
- he or she is not aware of having any medical condition that would affect the safety of the flight,
- the licence holder must make a specified certification required in his or her licence at the time that the assessment is made.
- only 1 passenger is carried
- he or she tells the passenger that he or she does not hold a class 1 or 2 medical certificate; and
- he or she assumes all responsibility for the safety of the flight; and
- he or she does not conduct operations over a populous area or in controlled airspace.

Note that the requirement is not simply to hold a driver's licence, but to have been assessed against the National standard for a private motor vehicle licence. These standards are less stringent than the current Class 2 CASA standards but are quite comprehensive. The national guidelines also contain standards for commercial driver's licences and these are more akin to the CASA Class 2 standards. Also note that it is currently proposed that the assessment against the standard may be performed by any medical practitioner without aviation training or designation.

## **7. Consideration of options**

### **7.1 Discussion of options**

#### **7.1.1 Option 1 (partial delegation)**

This is the proposed option in the class 2 delegation survey and the results showed strong industry support.

The advantages of delegation were outlined in section 4 and included (i) consistency with CASA's high level goals; (ii) resources devoted proportionately to risk (iii) consistency with international models and; (iv) potential for reduced costs and increased convenience for applicants. The potential safety risk may be mitigated with a significant investment in DAME training and audit and delegation of class 2 certificates only would mitigate the risk to the fare paying passenger.

The disadvantages of this approach are that such a system would however require CASA to maintain dual certification systems (centralised and decentralised) and is therefore relatively inefficient and overly complex. Significant initial and ongoing costs would be required to be expended by CASA to improve IT systems and DAME education, training and audit. The CASA Office of Aviation Medicine operating costs would be significantly increased with the maintenance of the current system for class 1 and 3 but the establishment of a new system for class 2. This model (as for Option 2) would also carry the risks of delegation outlined in section 5.

#### **7.1.2 Option 2 (full delegation)**

This option would extend the potential benefits mentioned above to the Class 1 and 3 certificate holders who make up 2/3 of the 30,000 certificates processed by CASA AvMed on an annual basis.

The advantages of extending a single system to all licence holders would be accessibility and simplicity as well as potentially reducing CASA's overall operating costs.

The main disadvantage of this option was that it also posed significant potential flight safety risks. There is currently a significant variability in the quality and thoroughness of DAME assessments. As described earlier, CASA AvMed frequently 'overrules' DAMEs' decisions where the applicant would otherwise have been returned to flying or air traffic control duties. A recent illustrative example was a DAME decision to extend a professional pilot's certificate despite the recent occurrence of a significant head injury that placed the applicant at high risk of seizures. The safety risk may be mitigated to a degree by a significant investment in DAME training and ongoing education and audit.

##### **Option 2 (a)**

Consideration was also given to the option of delegating class 1 and 3 issuance only to 'senior DAMEs' who would be required to hold a higher level of experience and/or training.

The advantage of this option is that it would reduce CASA's DAME training and oversight commitments in that relatively fewer DAMEs would require the higher level of experience, training and audit.

The disadvantages associated with this option included sufficient geographical access to 'senior' DAMEs and potential dissatisfaction from DAMEs who do not gain 'senior' status. It is possible that some DAMEs who were not conferred 'senior' status might resign from their designation.

In the delegation survey there was little support for a two tiered DAME system with only 9.4% of respondents overall and 12.7% of Avmed respondents in favour of this option. It must also be considered though that this survey was in response to a question about Class 2 medicals and did not include class 1 and 3 certificates. Two tiered DAME systems have been successfully implemented in overseas administrations such as NZ, the UK and the US.

### **7.1.3 Option 3 (as is)**

This is the current system, ie no change.

The advantages of this system are that it has a proven safety record and enables consistency and quality of decision making and maintenance of a detailed centralised database. Whilst service delivery levels have been improved significantly since 2006, there is still some room for improvement with automation and efficiency measures.

The disadvantages of the current model are that despite significant automation, it is still administratively complex, requiring scanning of paper and extensive data entry as well as returned medicals due to incompleteness. \$130 for a medical assessment (until 1 June 2007 when it changed to \$75) was considered a significant added cost to the aviation industry for medical certification. There continues to be the risk of fragility in the system in terms of potential delays in certification due to CASA backlogs. It is also not entirely consistent with CASA's high level goals

### **7.1.4 Option 4 (centralised with efficiencies)**

The centralised option – as currently exists, but with enhancements to improve efficiency.

The advantages of this option is that it retains the current consistency and quality of decisions that are made and retains the centralised records whilst also meeting the aims of improved convenience and reduced costs to applicants.

The safety cost benefit analysis recommended that to achieve this aim, CASA must invest in appropriate IT and business process improvements. This process was already underway in 2007 when the analysis was undertaken and in June 07 the cost for medical assessments was reduced to \$75 from \$130. This reduced fee, combined with improved service delivery has significantly reduced concern from industry.

A further advantage of this option is that when the current IT enhancement projects are completed, CASA will realise significant efficiencies and in turn will be able to pass those on as further reduction in medical fees.

Option 4 alone however does not achieve consistency with CASA's philosophy of devoting resources appropriate to risk. A similar level of AvMed resource commitment would continue to be devoted to assessments of private pilots as is for professional pilots and ATCs (aside from frequency of examination). When placed in the context of the proposed changes in Part 61 however, this consistency is achieved. With the proposed reduction in aeromedical surveillance of the lower risk end of GA, CASA AvMed will be able to concentrate aeromedical resources on higher risk class 2 aviation activities and the fare paying passenger.

This model has been proven to work well in the UK with their National Private Pilot's Licence (NPPL) system where they have issued over 4000 certificates since 2002 and the safety record is sound. The details of the UK system can be seen at their website.<sup>2</sup> There are some important differences though between the proposed Part 61 and the UK CAA NPPL system. In the UK system, if applicants wish to carry passengers, they must meet the commercial drivers' standard and not the private drivers' standard. The UK system also has the advantage that applicants have to be registered with a single GP practice for their care, which is not the case in Australia. Under Part 61, applicants could have the assessment vs. the private drivers' standard done by a GP they were seeing for the first time and who did not have access to their records.

CASA believes that in choosing Option 4 it can achieve safety effectiveness and apply regulations proportionate to the actual risk.

## 7.2 Summary of options considered

The following options were considered during the safety cost benefit analysis:

### **Option 1 (Partial delegation)**

CASA delegates issuance of Class 2 certificates only. All DAMEs are able to issue Class 2 certificates. CASA maintains the current system for Class 1 and 3.

### **Option 2 (Full delegation)**

CASA delegates issuance of all classes of certificates to all DAMEs. CASA maintains centralised records of examinations and CASA retains a review system for deferred or appealed cases.

### **Option 3 (Centralised - as is)**

A continuation of the current system – CASA issues all certificates and continues to cost recover for a centralised system.

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<sup>2</sup> <http://www.caa.co.uk/default.aspx?catid=49&pagetype=68&gid=305>

### **Option 4 (Centralised with automation and efficiency measures)**

As for Option 3 but significant efficiencies are made through better use of IT systems and by significantly improving the proportion of medicals submitted and paid online. With these efficiencies, there is potential to reduce the cost recovery fee (particularly for online medicals). There is a reduction in aeromedical surveillance of some GA activities via the new medical provisions within Part 61.

## **7.3 CASA decision**

CASA has chosen option 4, a centralised option with efficiency measures.

## **8. Conclusion and recommendation**

It was important that CASA explore the option of delegation to DAMEs. Delegation would be highly consistent with CASA's strategic direction of concentrating on the safety of the fare paying passenger and of improving industry relations. However, on detailed analysis of the issues, it was apparent that there are significant potential safety and financial risks. It is important to note that cost and convenience issues for certificate holders are not in themselves sufficient reasons to change the system and that safety and aviation risk management are critical.

CASA's current system has been operating for many years with an exemplary safety record. Implementation of delegation without adequate management of the listed safety risks have the potential to erode the current safety record of CASA's aviation medicine system. There would also be potential financial implications for applicants with increases in DAME fees, particularly if the candidate has any medical conditions. Delegation of class 2 certification also had the disadvantage of requiring CASA to run dual certification systems and potential loss of centralised records.

In parallel, the Part 61 project is looking at an alternative means of reducing the medical (and cost recovery) burden on that section of GA that poses a low risk to the general population. Much of the concern about the medical fees was from GA pilots who did little flying hours and felt that \$130 every two or four years was not proportionate. The RPL may provide a viable alternative for those pilots to remain in GA with a reduced safety cost burden.

This will then allow CASA to maintain suitably rigorous scrutiny over the health of those private pilots carrying out aviation activities with higher potential safety risks (e.g. carriage of large numbers of passengers such as in parachuting activities).

CASA has therefore decided to implement Option 4, which is to retain the current centralised system but to commit to enhancing the efficiency of that system with the aim of further reducing the cost to industry whilst improving the service and maintaining an outstanding safety record. This option, combined with the initiatives of Part 61 offers the best combination of flight safety and safety cost effectiveness.

## A. Comparison of CASA with overseas medical certification systems

LA ↓	Medical Exam			Certificate Issued by:				Review	
	Initial	Renewal	Online system?	Professional initial	Professional renewal	Private initial	Private renewal	QA check by LA	Difficult Cases
<b>CASA</b>	AME	AME	Yes optional	LA	LA	LA	LA	Nil - All issued by CA	LA
<b>FAA</b>	AME	AME	Yes mandatory (in US)*	AME	AME	AME	AME	Flagged (with delays)**	CA + AASI
<b>UK CAA</b>	LA	AME	Yes optional	LA	AME	AME	AME	Flagged	LA
<b>NZ CAA</b>	AME	AME	No	A(ME1)	A(ME1)	A(ME1 or 2)	A(ME 1 or 2)	Targeted Sample + flagged	ME1 + LA
<b>TC</b>	AME	AME	No	AME	AME	AME	AME	100%	LA

\* Use of online system is optional for International and military AMEs

\*\* Currently resources are limiting ability to review all flags

### Glossary

**LA - Licensing authority**

**AME - Aeromedical Examiner**

**QA - Quality assurance**

**AASI - AME assisted special issuance (FAA)**

**CASA - Civil Aviation Safety Authority (Australia)**

**FAA - Federal Aviation Authority (US)**

**UK CAA - United Kingdom Civil Aviation Authority (operates under JARs)**

**NZ CAA - New Zealand Civil Aviation Authority**

**TC - Transport Canada**

## B. Medical certification requirements under proposed part 61 rules

Table 61.130 Required medical certificates

Column 1 Item	Column 2 Licence	Column 3 Category rating	Column 4 Medical certificate
1	ATPL	All	class 1
2	CPL	Aeroplane, helicopter, airship, gyroplane	class 1
3	CPL	Free balloon	class 2
4	PPL	—	class 2
5	RPL	—	class 2 (see note)
6	SPL	—	class 2 (see note)
7	Flight engineer	Aeroplane, helicopter	class 1
8	Student flight engineer	—	class 2

*Note* The holder of an SPL or RPL may fly without a medical certificate in certain circumstances. See regulation 61.135 and regulations 61.410 and 61.435.

### 61.135 Flight without medical certificate — SPL and RPL

- (1) The holder of an SPL or RPL may fly solo without being the holder of a class 1 or 2 medical certificate if he or she certifies, in accordance with subregulation (2), that:
  - (a) he or she meets the medical standard for the holder of a private motor vehicle driver licence set out in the publication *Assessing Fitness to Drive — Guidelines and Standards for Health Professionals in Australia*, as published by Austroads from time to time; and
  - (b) within the last 4 years, he or she has assessed his or her medical condition, in accordance with that medical standard, in consultation with a medical practitioner; and
  - (c) he or she is not aware of having any medical condition that would affect the safety of the flight.
- (2) The licence holder must make the certification required by subregulation (1) in his or her licence:
  - (a) at the time that the assessment is made; and
  - (b) in the form specified in MOS Part 61.

*Note for paragraph (a)*, The publication *Assessing Fitness to Drive — Guidelines and Standards for Health Professionals in Australia* (second edition) is available for download as a free PDF file from Austroads at <http://www.austroads.com.au>

#### **61.425 Privileges conferred by RPLs**

The holder of an RPL is authorised to act, but not for remuneration, as the pilot-in-command, in private flights by day under the VFR, of an aircraft that:

- (a) is certificated for single-pilot operation; and
- (b) has a maximum certificated seating capacity, including the pilot, of 4 seats.

#### **61.430 Conditions of RPLs**

- (1) The holder of an RPL must not exercise the privileges conferred by the licence:
  - (a) in an aircraft for which a type rating is required; or
  - (b) in an aircraft for which he or she does not hold the aircraft category rating; or
  - (c) in an aircraft for which a single-engine class rating is required, unless he or she holds the relevant rating; or
  - (d) in an aircraft that has a special design feature, unless he or she holds the relevant design feature endorsement.
- (2) The holder of an RPL must not exercise the privileges conferred by the licence in an area that is not:
  - (a) within a 25-nm radius of the original departure aerodrome; or
  - (b) within the flight training area associated with that aerodrome; or
  - (c) along a route specified by a flight instructor when conducting cross-country navigation training;unless he or she holds a navigation endorsement for cross-country flight in non-controlled airspace.

Penalty: 25 penalty units.

- (3) The holder of an RPL must not exercise the privileges conferred by the licence in controlled airspace unless he or she holds an endorsement to pilot an aircraft in the control zone associated with a specific aerodrome in Class C or D airspace or within a GAAP control zone.

Penalty: 25 penalty units.

- (4) The holder of an RPL must not exercise the privileges conferred by the licence in another Contracting State's airspace except with the permission of the Contracting State.

Penalty: 25 penalty units.

- (5) An offence against subregulation (2), (3) or (4) is an offence of strict liability.

#### **61.435 Flight without medical certificate — RPLs**

- (1) The holder of an RPL may fly as pilot-in-command without being the holder of a class 1 or 2 medical certificate if:
  - (a) he or she satisfies the requirements of regulation 61.135; and
  - (b) he or she tells the passenger that he or she does not hold a class 1 or 2 medical certificate; and
  - (c) he or she assumes all responsibility for the safety of the flight; and
  - (d) only 1 passenger is carried; and
  - (e) he or she does not conduct operations over a populous area or in controlled airspace.